



FIFTH FIVE YEAR PLAN

ANDHRA PRADESH

(1974-79)



DRAFT OUTLINE

PLANNING AND CO-OPERATION DEPARTMENT
GOVERNMENT OF ANDHRA PRADESH
JULY, 1973

CONTENTS

PART I—GENERAL

	PAGE
1.1. Introduction	1
2.2. Approach	5
3.3. Economy of Andhra Pradesh—Review of Economic Situation.	11
4.4. Economy of Andhra Pradesh—Levels of Development	29
5.5. Economy of Andhra Pradesh—Perspective of Income and Investments	55
6.6. Outlays for Fifth Five-Year Plan	63
7.7. Minimum Needs Programme	87
8.3. Financial Resources for Fifth Five-Year Plan	111

V

PART II—SECTORAL PROGRAMMES

		PAGE
1.	Agriculture	117
2.	Training Centres	141
3.	Minor Irrigation	145
4.	Soil Conservation	161
5.	Ayacut Development	165
6.	Animal Husbandry	179
7.	Dairying and Milk Supply	193
8.	Forests	207
9.	Fisheries	219
10.	Warehousing and Marketing	229
11.	Co-operation	233
12.	Community Development and Panchayati Raj.	251
13.	Irrigation	255
14.	Power	271
15.	Large and Medium Industries.. .. .	287
16.	Mineral Development	325
17.	Handlooms	339
18.	Village and Small Scale Industries	347
19.	Roads	373
20.	Road Transport	379
21.	Minor Ports and Inland Water Transport	383
22.	Tourism	393
23.	General Education	395
24.	Technical Education	409

VI

	PAGE
25. Medical and Public Health	419
26. Urban Water Supply and Drainage ..	445
27. Rural Water Supply	453
28. Housing	457
29. Urban Development	461
30. Welfare of Scheduled Castes and other Backward Classes.	467
31. Welfare of Scheduled Tribes	481
32. Social Welfare	509
33. Labour and Labour Welfare	515
34. Statistics	521
35. Planning Organisation	523
36. Land Reforms	525
37. Area Planning Programmes	527
38. Information and Publicity	529

VII

PART—III REGIONAL DEVELOPMENT

				PAGE
I. DEVELOPMENT OF BACKWARD AREAS	..	..	..	583
II. DISTRICT PROFILES	..	..	..	563
1. Srikakulam	..	..	..	572
2. Visakhapatnam	..	..	..	575
3. East Godavari	..	..	..	578
4. West Godavari	..	..	..	580
5. Krishna	..	..	..	583
6. Guntur	..	..	..	587
7. Prakasam (Ongole)	..	..	..	590
8. Nellore	..	..	..	593
9. Chittoor	..	..	..	596
10. Cuddapah	..	..	..	599
11. Anantapur	..	..	..	603
12. Kurnool	..	..	..	606
13. Mahabubnagar	..	..	..	609
14. Hyderabad	..	..	..	612
15. Medak	..	..	..	615
16. Nizamabad	..	..	..	618
17. Adilabad	..	..	..	621
18. Karimnagar	..	..	..	624
19. Warangal	..	..	..	627
20. Khammam	..	..	..	630
21. Nalgonda	..	..	..	633
III. AREA DEVELOPMENT APPROACH	..	..	..	637

IX

PART IV—TABLES.

	PAGE
I Draft Fifth Five-Year Plan Outlays and Expenditure—Summary. ..	646
II Programme-wise Outlay and Ex- penditure	650

P R E F A C E

The outline of the draft proposals for the Fifth Five-Year Plan of Andhra Pradesh has had to be prepared subject to certain important limitations. First and foremost, the resources position was uncertain. No doubt, the Planning Commission had in the meeting of Planning Secretaries of the States held on 31st January, 1973 clarified that the exercise might begin on the assumption that the outlay on the Fifth Five Year Plan would be double that of the Fourth Five Year Plan. It was only later on 2nd June, 1973 that the Planning Commission had indicated that we might assume the outlay on the Plan to be Rs. 1,075 crores including the Minimum Needs Programme. However, in the case of Andhra Pradesh there were many weighty reasons, which have been explained in detail in Chapter 6 as to why the outlay on the Fourth Plan could not be taken as the basis for any projection for the Fifth Plan. At the same time, it was evident that the preparation of an entirely need-based Plan would have been an exercise in wishful thinking as well as futility. While, therefore, the inadequacy and the inequity of the Fourth Plan outlay being accepted as a basis could be conceded, it had to be recognised that outlay that would be needed for the State to achieve a rate of growth of its economy necessary for the present regional imbalances to be wiped out may not be feasible. A reasonable balance had to be struck and it is our hope that the outlay for which these proposals have been finally worked out represents such a balance.

The Working Groups were constituted in August, 1972 but in view of the difficulties mentioned in the preceding para, the drafting of the specific proposals by the Groups could commence only much later. Meanwhile, the prolonged strike of the Government employees of the State from December, 1972 to March, 1973 affected the work of these Groups resulting in further delay. For these various reasons, the Draft has had ultimately to be completed

XII

in some hurry. We would, therefore, in all humility admit that the discipline of the time-table prescribed by the Planning Commission has had ultimately to prevail over the urge for technical excellence. We only hope that it has not prevailed over the requirements of elementary logic or rationality.

Since the year 1971-72, a certain formula has been adopted according to which the developmental outlays in the Annual Plans are being allocated to the three regions of the State. Since no final decision has been taken in this regard and since the adjustments necessary for conforming to any formula for regional allocations would take further time, the present proposals have been prepared only on a State-wide basis. However, since considerable work had been done in the Planning Department for evolving regional strategies of development and for formulating Perspective Plans for the three regions, this work, and in particular the regional strategy, has been taken into account in formulating these proposals. In connection with this work, considerable data has been collected for each of the districts. A brief summary of this has been included in this document as District Profiles. We have also initiated work for breaking up the Plan allocations to the extent possible on a district-wise basis.

We are aware that in a number of issues where there are inter-related problems, the plans and programmes under different sectors would have to be closely co-ordinated. We have tried to sort out some of these problems in the initial stage itself, but admittedly there are still some problems which have not been fully looked into and which would have to be attended to subsequently. Therefore, as soon as the discussions with the Planning Commission on our Draft proposals are completed, it is proposed that the Working Groups should meet again to reconsider their earlier proposals in the light of the comments that would be made in the Central Working Groups. Subsequently, joint meetings of the Working Groups would be held to deal with the inter-sectoral problems of the type mentioned above. The Draft Plan will be formulated after these discussions and any revisions that may be necessary as a result. The Draft Plan could at this stage be made available for public discussion.

XIII

Once the Draft Plan is prepared, a Plan frame would be available which would be communicated to the Districts for the preparation of the District Plans. The Panchayati Raj institutions should be associated with this process. On receipt of the District Plans, any changes necessary in certain sectors would be effected. We hope that this iterative process would lead to more realistic planning both at the District level and at the State level rather than a process which moves in one direction alone either from above downwards or *vice versa*.

This process, which has been described in greater detail in Fifth Plan Technical Papers, is obviously one which would not only take time but would be continuous. This Draft Outline should, therefore, be taken to be only the beginning of the process rather than the end product of it.

One result of the tight time schedule has been that both the initial cyclostyling of these proposals and the later printing had to be done in a great hurry. There are, therefore, bound to be printer's devils as there always are, which might incidentally help cover a variety of sins. However, due to the pressure of time under which these proposals have been formulated, there may in addition be drafter's devils also. We crave for them the same indulgence as is now customary to give to other devils.

Hyderabad
14th July, 1973

B. P. R. VITHAL,
Secretary to Government.

Part I—General

1. INTRODUCTION

The work relating to the preparation of the Fifth Five Year Plan of the State commenced in April, 1972. The Planning Commission sent a letter in March, 1972 prescribing schedule of dates for the preparation of the Fifth Plan. They also indicated that the States would be more intimately associated with the formulation of the Fifth Plan. In order to enable the Planning Commission to prepare the National Approach to the Fifth Plan, they desired the State Governments to furnish information on the following points :

- (a) realistic assessment of the levels of development likely to be reached by the end of the Fourth Plan period in certain critical areas of development falling within the State and Centrally Sponsored sectors ;
- (b) assessment of the financial, material and organisational requirements for the completion of as many continuing projects as possible specially in the field of Irrigation, Flood-Control, Power Generation, Transmission etc., and
- (c) identification and quantification of the gaps between the levels of utilisation. (Under irrigation projects, the utilisation of irrigation is far below the potential created. Similarly, under Power a considerable percentage of generation capacity is either not being utilised or is being dissipated through transmission losses.)

The Plan process starts with a preliminary assessment by the Planning Department of the levels of development that are likely to be reached by the end of the Fourth Plan period, the spill-over commitment etc., and the general approach that may have to be adopted in regard to the Draft Fifth Plan. With this end in view, a study was undertaken by the State Government's Planning Department to review the economy of the State since 1950, the performance of the Plans during the period and the financial position of the State. A copy of the review was sent to all the Working Groups and Heads of Departments for information.

The Planning Department also prepared a Paper on "An Approach to the Fifth Plan" of the State containing the following items :

- (a) A general approach to the Fifth Five Year Plan ;
- (b) A sectoral approach indicating the approach as well as some preliminary issues arising from the approach ; and
- (c) A note on the levels of development likely to be reached in the economy of the State by the end of the Fourth Plan.

This document was also circulated to all the members of the Working Groups to serve as back-ground paper for the formulation of the Fifth Plan. Copies of these documents were also sent to the Planning Commission.

The Planning Commission in their letter dated 28-8-1972 suggested to the State Governments to constitute Working Groups to formulate detailed Fifth Plan for the different sectors of development. The State Government accordingly constituted 12 Working Groups for the formulation of the State's Plan. Working Groups were constituted for the subjects of Financial Resources, Agricultural Production and Marketing, Irrigation, Power, Industries, Transport and Communications, General and Technical Education, Medical and Public Health, Housing, Water Supply and Urban Development, Rural Water Supply and Community Development, Social Welfare and Manpower. Broadly, the terms of reference of the Working Groups have been indicated as follows :

- (i) to generally review the impact of the various development programmes relating to the sector concerned launched during the Fourth Plan period particularly in relation to the benefits accrued and increases in productivity and employment, etc. ;
- (ii) to identify the gaps between the levels of utilisation and the potentials and capacities already created ;
- (iii) to make a realistic assessment of the level of development likely to be reached by the end of the Fourth Plan period in certain critical areas of development falling within the State's sector also taking into account in this regard the Central and Centrally Sponsored Schemes under their Departments ;
- (iv) to make a realistic assessment of the financial, material and organisational requirements for the completion of as many continuing projects as possible ; and
- (v) to work out tentatively the objectives and programmes for the Fifth Plan for the concerned sectors of development taking into account the potentialities of the State as well as the three regions at the end of the Fourth Plan, the pattern and priorities indicated in the Perspective Plans of the three regions, and outlays likely to be available for the Fifth Plan together with financial assistance that can be obtained from financing institutions.

The Working Groups were requested to formulate their reports for the concerned sectors with reference to the following issues in the light of the background papers supplied by the Planning Department ;

- (a) briefly review the impact of the various development programmes so far and arrive at a realistic assessment of the level of development reached ;
- (b) identify the gaps between the potential created and the levels of utilisation ;
- (c) examine in detail the financial, material & organisational requirements of the spill-over projects ;

- (d) indicate the broad strategy for the sector in the light of the over-all approach to Fifth Plan given and the review indicated above; and
- (e) spell - out in keeping with the strategy indicated, the type of programmes that have to be undertaken, the broad physical and financial magnitudes and the inter-sectoral linkages if any in this regard.

The Planning Commission had intimated that the work on the preparation of the Draft Fifth Plan should be commenced on the assumption that the outlays would be double that of the Fourth Plan. However, in view of the emphasis in the Approach Paper on the Minimum Needs Programme and employment oriented programmes, it was obvious that in the case of certain sectors, the step up would have to be more than this. Further in certain sectors like Power and Ayacut Development, large spill-over commitments and factors like the large irrigation potential already created etc., had to be taken into account. The economic stagnation in the past and the strategy to be adopted for future development of the State also required that certain sectors like Industries be given larger allocations: Taking all these factors into account tentative allocations were worked out and indicated to the Working Groups.

The reports of the Working Groups were then scrutinised for consistency (a) within the sectors, (b) between the sectors and (c) in spatial terms and the present draft proposals were thereafter formulated.

After the discussions with the Planning Commission the following procedure is proposed to be followed :

- (a) The Working Groups will meet again to recast the proposals in the light of the discussions with the Central Working Groups and the allocations finally decided in the discussions with the Planning Commission.
- (b) Joint meetings of the Working Groups will be held wherever necessary to consider inter-sectoral problems. The Draft Plan will then be formulated in the light of these discussions.

Each Working Group had been asked to work out the manpower implications of its proposals. In addition, as mentioned above, a separate Working Group had also been set up for Manpower itself. The employment implications as well as the manpower requirements of the Plan will be worked out in greater detail at the time of formulating the Draft Plan.

District Plans :

On the basis of this Draft Plan, the following will be worked out for each district :

- (a) a preliminary Plan frame ; and
- (b) a dimensional hypothesis for the district sector. These will be communicated to the District Planning authorities.

The District authorities will be expected to prepare District Plans on the basis of :

- (a) the District Profiles already prepared ;
- (b) the plan frame and the regional physical strategies ; and
- (c) the dimensional hypothesis.

The District Plan will give :

- (a) a profile of the resource endowment of the district ;
- (b) levels of development in important sectors reached so far with a review where necessary of the on-going plan schemes and their relevance for the future ;
- (c) spill-over commitments - physical, manpower and financial implications ;
- (d) strategy adopted based on the above and
 - (i) regional strategy including spatial aspects ; and
 - (ii) the plan frame,
- (e) state sector schemes and their implications for the district plan ;
- (f) sectoral plan in the district sector with phasing ;
- (g) scheme-wise details of the more important schemes ; and
- (h) local participation in particular resource mobilisation at local level.

On receipt of the District Plans they will be scrutinised by the Planning Department for consistency and would be referred again to the Working Groups concerned if necessary. Thereafter, the final Draft Fifth Five-Year Plan which will include the District Sector will be prepared and made available for public discussion.

2. APPROACH

Our approach to the Fifth Plan has naturally to be in consonance with the overall approach indicated by the Planning Commission that has been approved by the National Development Council. According to this approach "the elimination of abject poverty will not be attained as a corollary to a certain acceleration in the rate of growth of the economy alone. In the Fifth Plan it will be necessary to launch a direct attack on the problems of unemployment, under-employment and massive low-end poverty. The essential ingredient of this line of attack would have to be provision of employment opportunities on as large and wide a scale as necessary and to make this effort technically and administratively feasible". The approach goes on also to state that "even if we succeed in producing vast employment opportunities for the poor, they will not be able with their level of earnings to buy for themselves all the essential goods and services which constitute quality of life. The programme for providing larger employment and incomes to the poorer sections of the population will, therefore, have to be supplemented by a national plan for the provision of social consumption".

While our approach to the Fifth Plan of the State will have to be in consonance with the general approach approved by the National Development Council, we will also have to take into account the circumstances of our own State in formulating a more detailed approach for our own Plan. In any review of the economic development of Andhra Pradesh, the year 1964-65 stands out as a significant one. Upto that period, there had been steady, although modest growth while subsequently there has been only a decline or stagnation or a somewhat weak recovery, so that the level of income of that year in per capita real terms has not yet been achieved again. This unique phenomenon is the result of the combination of several unfortunate circumstances all of which have had a dampening effect on the economy of the State. Firstly, the effect of the recession and the sharp increase in prices which the country as a whole experienced after 1965-66 was naturally felt in Andhra Pradesh also. Secondly, since then there have been droughts and floods in large parts of the State almost every year, even when the country as a whole has had a long spell of good agricultural years. Thirdly, the State has been consistently facing financial difficulties.

The financial difficulties have been partly due to the fact that the adverse seasonal conditions and the consequent decline in agricultural production itself affected the resources of the State which were to a great extent dependent upon this sector. The nature of the previous investments as a result of the high priority given to Irrigation and Power and the patterns of the Central assistance resulted in the State accumulating a large debt burden. As a consequence of these two trends, namely, a decline in the buoyancy of the State revenue due to adverse seasonal conditions and the growing debt burden, considerable strain was imposed on the financial resources of the State. Simultaneously, the Central assistance available for the Plans declined from

63 percent during the Third Plan period to 51 per cent in the Fourth Plan or 65 per cent in 1965 to 48 per cent in 1972-73. All these factors resulted in a decline in the outlays on the Plan.

Many of the problems of recent years can be ultimately traced to this phenomenon of declining investments over the last eight years. The first necessity, therefore, is to step up the developmental outlays and consequently the investments. Unless this is done, many of the other problems-whether they be administrative, financial or political cannot really be served. Any measures in the nature of the special schemes for which additional outlays are made available, for tackling some acute problem in isolation can at best remain only marginal and cannot in these circumstances bear fruit.

The other factor that would be equally striking in any study of development of the State is the emergence of regional imbalances. It can be shown that regional imbalances have not perhaps become wider or more acute than they were to begin with even if they may not have been reduced to any significant degree. However, the awareness of these imbalances is now a factor that has to be reckoned with. To some extent at least, it is the stagnation of the economy over the last few years, that has been described above, that has perhaps been responsible for this awareness having grown. Disparities that are tolerated in a period of general growth become unbearable during periods of stagnation. Any future strategy for the development of the State would, therefore, now have to take into account the regional levels of development and the need to reduce the disparities between them. On the other hand, the acute awareness of these imbalances has sometimes led to a tendency to concentrate too much on the problems of the region alone. However, the problems of the regions cannot be solved unless they are fitted into a strategy for the State as a whole and ultimately for the nation. While, therefore, it is necessary to have regional strategies of development these would have to be made part of a State strategy. The aim of the regional strategies should be to bring up the level of development of the region based on its own resource endowment and any comparative advantages it may have and not a kind of autarchic or regional self-reliance approach.

Regional development will require not merely the assignment of priorities in the Plan for the allocations of funds, but the evolution and adoption of policies which have the same purpose in view. For instance, in evolving a strategy for agricultural development for the State as a whole, where other technical resource factors are equal we would have to give priority to backward areas for the encouragement of high value crops and also link up with this the location of connected agro-based industries. Similar considerations would have to weight in regard to the utilisation of available water potential or while prescribing cropping patterns for irrigation projects etc. Similarly, in the case of industrialisation our present incentives being in the nature of subsidies on capital in fact discriminate in favour of capital-intensive industries, whereas what are needed for the development of backward areas are labour-intensive industries. There are other sectors also in which suitable policies would have to be evolved with a view to reducing regional imbalances. For instance, Animal Husbandry

and Dairying is an activity that has great potential for developing areas that are otherwise not well endowed for agriculture. Animal Husbandry activities and dairy farming should, therefore, be encouraged more in the dry farming areas. The additional cost of such allocation, if any, may get offset in the long run. Even otherwise in any cost-benefit analysis this could be attributed to the social objective.

Unless, however, the removal of regional imbalances is introduced as a basic factor in the evolution of national policies themselves, a mere investment of some additional funds will not solve the problem. The backward areas also have, in some respect or the other, a comparative advantage. This advantage will have to be identified and in any State or national strategy for development wherever a backward area has a comparative advantage that particular activity will have to be reserved for that area, so that the regional strategy can be based on this as the lead sector.

The channelling of public investments through institutional agencies has assumed increasing importance in the recent past and in future the role of these institutions as instruments of public investment is bound to expand greatly. There would, therefore, have to be a close co-ordination between Governmental investments and the investments through these agencies. Apart from the problem of ensuring that the institutional finances flow to the more backward areas the related question of ensuring the flow of institutional finance in keeping with the general strategies of development identified for different areas would also have to be tackled. Thus standardised procedures and norms for investment in the country as a whole will not serve this purpose. A decentralised form of decision making based on differentiated norms and procedures has to be worked out and this would have to be linked up with the strategies of development evolved for specific areas.

The Minimum Needs Programme adopted as part of the national strategy for the Fifth Plan will no doubt take care of some of the requirements of the backward areas and to that extent reduce the imbalances. However, the backward areas in our State will require attention not only in regard to the basic amenities which have been included in the National Minimum Needs Programme but also for raising the general level of their economy. Very often these being areas which are less endowed for agriculture are also areas with a higher degree of unemployment. Therefore, in the other part of the national strategy, viz., the employment programme also, these backward areas will have to be given priority. It is only when all the three elements are combined, namely, bringing up the level of the basic amenities in such areas through the National Minimum Needs Programme, giving priority in employment oriented programmes and creating circumstances under which whatever comparative advantage such areas have is pushed to the maximum extent, that a meaningful strategy for the region can be evolved and thus some impression made on the problem.

Next to regional imbalances, the most important factor to be taken into account is what may be called sectional imbalances or disparities in income of different sections of society. The two most

important manifestations of these imbalances are in caste terms the Scheduled Castes and Tribes and in a broad economic sense the small farmers and agricultural labourers. Here again, a programme of increasing public consumption and the employment programmes, ought to benefit these sections most. In regard to the economic and the employment programmes intended to help the weaker sections, we will have to examine our existing institutional arrangements dispassionately with a view to determining whether in fact they will serve as effective instruments for such programmes to be so implemented that they would benefit the weaker sections in particular. In regard to the economic programmes, the most important institutions to be examined will be the credit institutions and in regard to the employment programmes the contractor agency.

Besides setting up the institutional agencies required it will also have to be ensured that every policy of Government whether economic or administrative and the developmental strategies and policies evolved in every sector are in keeping with three basic objectives viz.,

- (a) reduction of regional imbalances,
- (b) reduction of income disparities, and
- (c) bringing up of the economic level of the lowest sections.

Every sectoral programme should explicitly spell out the components in it that are intended to help achieve the above objectives.

Besides the backward areas and the weaker sections, we have to bear in mind the special problems of the tribal areas since Andhra Pradesh happens to be a State with a not inconsiderable percentage of the tribal population. In any strategy for the State special note will have to be taken of the problems of the Scheduled Areas and of the Scheduled Tribes.

Another important feature in regard to Andhra Pradesh that would strike any one who analysed the development under the Plans so far is the fact that we have now reached a stage, or will be reaching it during the Fifth Plan period, when large capacities would have been built as a result of the cumulative investments in the past particularly under irrigation. Much of the investment made in building up the infrastructure in the past plans also would be coming to fruition during this period. A great deal of the emphasis will, therefore, have to be placed on the full utilisation of the capacities already created whether these be in ayacut development in the Irrigation sector or in the reduction of transmission losses and the development of full load in villages already electrified in the Power sector. Besides a programme for social consumption and the employment programme, therefore, the next priority will have to be given under every productive sector to the completion of spill-over schemes and the full utilisation of capacities already created.

About 70 per cent of the people are still dependent on agriculture. No matter what the magnitude of industrialisation may be, this percentage will continue to be very high in the immediate perspective. As pointed out in the national approach, the main attack on poverty

will have to be on rural poverty. If, therefore, the standard of living of the vast majority of our people is to be raised, the basic priority in our developmental programmes will still have to continue to be for agriculture. Andhra Pradesh is placed in a peculiar position in as much as, on the one hand, it has high percentage of irrigation compared to the All-India average, while, on the other, it has large areas that are drought prone. The percentage of irrigation for the State as a whole is 30 against 21 for All India, while in the Coastal region it goes up to 49. On the other hand, 47.5 per cent of the area of the state has been identified as being drought prone and the population in those areas represents 34.7 per cent of the total population of the State. In both these cases however, the problem is one of applying technology so as to be able to make the best use of the available resource potential. An agricultural programme based on strategies most suitable to the diverse circumstances in the different regions would, therefore, have to be evolved.

Andhra Pradesh is also well endowed with natural resources which would provide the raw material for industrialisation. Further even for supporting a programme of increased agricultural production and for providing the necessary incentive for such a programme, agro-based industries would be required in many cases. A well-conceived programme of industrialisation based on an assessment of the resource endowment of the State and taking into account the need for bringing about balanced regional development within the State will, therefore, be required. It is necessary, however to mention once again that the consideration which are relevant at the national level, such as self reliance or diversification of the economy, would not apply to the State taken as a unit in itself. This would have to be borne in mind while evolving any scheme for incentives etc. for encouraging industrialisation. In the case of the agriculturally more prosperous areas, our anxiety now should be more to offer incentives for investment ∞ local capital. In backward areas however, our anxiety should be to attract labour intensive industries irrespective of from where the capital comes. Since the primary objective here is to afford employment opportunities to areas otherwise backward and perhaps physically not well endowed.

The third most important aspect for the development of the economy of the State would be the improvement of the communications of the State which have not in the past received the attention they deserve. The communications programmes being employment intensive can form part of the employment programmes. It has also an important role to play in the removal of regional imbalances. It is an essential prerequisite for the general development of the economy. From all these points of view, therefore, it requires to be given adequate priority in the Fifth Five Year-Plan.

The Planning Commission have advocated the formulation of District plans as a means of establishing a close correspondence between local conditions, potentials and priorities and the programmes to be taken up in the area. They have also pointed out that in relation to the employment intensive heads of Development, the scope for development during the Fifth Plan period can be defined meaningfully only within the context of local area. For this purpose, steps will be

necessary for collecting information about the potentials and the steps required for their exploitation at the local level. It is necessary to visualise different programmes for resource development, extension of infrastructure and production within a framework of inter-dependent relationship.

All this will require the building up and strengthening of the Planning machinery at the District level. Correspondingly, technical expertise in man power planning in project formulation and evaluation will also have to be built up and strengthened at the State level. A reorientation of the procedures of planning and a strengthening of the machinery for this purpose will, therefore, be an essential prerequisite for the formulation of the Draft Fifth Plan Proposals.

3. ECONOMY OF ANDHRA PRADESH—REVIEW OF ECONOMIC SITUATION*

The review of economic situation contains a broad analysis of general indicators such as growth of population, literacy, composition of workers, State-income and its composition, per capita income at current and constant prices, consumer prices, level of consumption among different fractile groups of population, land utilisation etc. In regard to agriculture and allied activities the review covers cropping pattern, area, production and productivity of crops, area irrigated by sources, livestock, production and value of forest products, wages of agricultural labour and artisans etc. Further the growth and working of credit institutions such as Land Mortgage Banks, Primary Agricultural Credit Societies and Commercial Banks are also studied. In the field of industry and mining the production of select commodities, the number of factories, the number of workers employed, industrial production, production of minerals and registration of joint stock companies, are analysed. Power is analysed in terms of generation by source, consumption pattern, number of towns and villages electrified etc. In regard to transport and communications, the length of roads under various categories, number of Motor vehicles registered, public sector passenger services, rail route length, Post and Telegraph facilities are analysed. In the field of Social Services select items such as the growth in the number and enrolment in schools and colleges, number of hospitals, hospital beds, etc., are studied.

The rate of growth of population in the State was more in the second decade since 1951 than in the first. The increase was more conspicuous in urban than in rural areas. The population of Andhra Pradesh which was 31.26 millions in 1951 increased to about 35.98 millions in 1961 and to 43.50 millions by 1971. Thus, the rate of growth of population in 1971 over 1951, was 39.2 per cent. The rate of growth of total population in the decade 1961-71 was thus substantially more than that in 1951-61 being 20.9 percent in 1961-71 as against only 15.1 per cent over 1951-61. The urban population in the State was 5.4 millions in 1951, 6.8 millions in 1961 and 8.4 millions in 1971. Thus the rate of growth of urban population in 1971 over 1951 was 54.5 per cent. The rate of urbanisation, was more in 1961-71 being 33.9 per cent when compared to 1951-61 when it was only 15.4 per cent.

The growth of literacy was very impressive during the first decade. However, during the second decade the growth rate is less than half of what it was in the earlier decade. Further, the reduction in the rate of growth of literacy was much more evident in rural than in urban areas. Yet over the two decades the overall rate of growth of literacy was less in urban areas than in the rural areas. The overall rate of growth of literacy for the two decades was 161.0 per cent. The growth of number of literates has been very impressive during the decade 1951-61 being 86.8 per cent. Over the decade 1961-71 however the rate of growth was only 39.7 per cent in the number of iterates. More distressing is the fact that the addition of absolute

* Extracted from Fifth Plan Technical Paper where detailed tables are given and data brought up to date.

number of literates was about 36 lakhs in 1951-61 as against only 30 lakhs in 1961-71. Further the increase in the number of literates in the rural areas has come down from 98.1 per cent during the earlier decade to only 34.2 per cent in the latter decade. The rate of growth in urban areas was less than that in rural areas being 68.3 per cent in 1951-61 whereas it was more in 1961-71 being 80.2 per cent compared to 34.2 per cent in the rural areas in the same decade. In percentage terms over the 20-year period the growth of number of literates was marginally less in urban areas.

In regard to composition of workers, the pressure on agriculture is evident during the period 1961-71 (subject to changes in definitions in the Census). The number of agricultural labourers increased by 12.67 per cent over the period 1961-71 whereas the non-agricultural workers and the cultivators came down by 5.93 per cent and 22.14 per cent respectively.

The rate of growth of State income at current prices, over the period 1960-61 to 1970-71 was 139 per cent. At constant prices, however, the increases are less impressive though an increase from year to year is noticed except for one year in 1965-66. The rate of growth of State Income at constant prices over the period 1960-61 to 1970-71 is 31 per cent. In regard to per capita income at current prices there is continuous increase except for the year 1965-66. The per capita income at constant prices shows a somewhat erratic trend. On the whole there is very little growth in per capita income in the State at constant prices since 1960-61. The State income at current prices increased from about 983 crores in 1960-61 to about 2,346 crores by 1970-71. The per capita income at current prices increased from Rs. 275 to Rs. 545. The per capita income at constant prices however, has increased only from about Rs. 275 in 1960-61 to Rs. 300 in 1970-71. The highest per capita income recorded was in 1964-65 being Rs. 309 but subsequently it decreased due to the drought conditions in successive years and not yet again reached the 1964-65 level.

In regard to the composition of the State income, at current prices, there is no discernible trend in it except that there is a marginal shift from agriculture to mining and industrial sector as also trade, transport and commerce. The agricultural and allied sectors accounted for 56.5% of the State income in 1970-71 as against 58.2 per cent in 1960-61 while Mining and Industries accounted for 14.6 per cent in 1970-71 against 13.4 per cent in 1960-61. In regard to Trade, Commerce and Transport, the figures are 15.6 per cent in 1970-71 against 14.7 per cent in 1960-61. Broadly, it can be construed that the economy continues to be primarily agriculture oriented and that there has been only a marginal diversification of the economy to the tune of a reduction by 2 per cent in the agricultural sector and an increase of each about 1 per cent in the Mining and Industry and Trade and Commerce sectors.

The index number of consumer prices at selected urban centres indicates a near doubling and more than doubling of the prices between 1960 and 1972. Taking 1960 as the base, the index for 1971 in respect of Guntur was 215, in respect of Hyderabad 205, Adoni 202, Warangal 198 and Visakhapatnam 197.

In order to assess the impact of economic growth over a period of time it is necessary to compare the levels of consumption among different fractile groups of the population. The information on consumer expenditure in the rural and urban areas of the State is being collected annually by the National Sample Survey since the last few years. The tabulation of this data had been done earlier according to the per capita consumer expenditure classes, while in recent years it is being done according to fractile groups. As such, comparable data is not available for the past to assess the rise in consumption levels. However, the information for the latest available year is for 1967-68 for Andhra Pradesh and All-India. It is seen that the inequalities in the shares of consumption are comparatively less in Andhra Pradesh than in All-India though the general level of economic development in Andhra Pradesh is very much below that of All-India. It will be observed that the poorest 60 per cent of the population have a higher share of total consumption, viz., 48.07 per cent in rural and 45.49 per cent in urban areas in Andhra Pradesh as compared to All-India (39.10 per cent in rural areas and 35.25 per cent in urban areas). The percentage shares of each of the fractile groups of the poorest 60 per cent of the population in Andhra Pradesh are observed to be consistently higher than the corresponding shares in All-India both in case of rural as well as urban areas. The share in total consumption of the higher fractile groups of population in Andhra Pradesh are lower than the shares of the corresponding fractile groups in All-India.

The land utilisation pattern has changed since 1950-51. Apparently the trend is towards more intensive and more productive use of the land. The net area sown, area under miscellaneous tree crops, permanent pastures, land put to non-agricultural use and forests have increased during the last two decades. There is a decrease in current and other fallows, cultivable waste and barren uncultivable land. The area under forests has increased from about 52 lakh hectares in 1950-51 to about 65 lakh hectares in 1970-71. It may be mentioned that the increase in area under forests is probably not so much due to the increases in area under effective forest as such, but due to a policy of declaring substantial barren uncultivable land and some cultivable waste as forest. The barren uncultivable land has decreased from about 33.5 lakh hectares to 21 lakh hectares by 1970-71. The land put to non-agricultural use as also permanent pastures and other grazing lands have increased. Cultivable waste, however, has decreased during the period. The current and other fallows show a substantial decrease. The net area sown has increased from about 104.5 lakh hectares to 117.4 lakh hectares in 1970-71. To sum up the net area sown was about 38.07 per cent in 1950-51 whereas it was 42.8 per cent of the total geographical area in 1970-71. Area under forests increased from 18.97 per cent to 23.6 per cent during the period.

The total cropped area increased during the first decade and during the early 60's but subsequently showed no discernible increase except for 1969-70. On the whole, the first decade is marked by a shift in favour of foodgrains, at the cost of oilseeds, and, to a marginal extent, fibres and other non-food crops. The second decade is marked by a marginal shift away from foodgrains in favour of oilseeds and other non-food crops. The major crops in the State in 1950-51 were

rice, jowar, groundnut, small millets, bajra, castor, greengram and cotton in that order. Tobacco, sugarcane and chillies accounted for only 1.3, 0.7 and 0.5 per cent respectively. By 1960-61, the major crops remained the same except for elimination of cotton. By 1965-66 castor also got eliminated and by 1970-71, the position continued as far as the list of major crops is concerned. The area under tobacco, sugarcane and chillies put together increased from 2.5 in 1950-51 to 4.2 per cent by 1970-71. The area under foodgrains increased perceptibly in the first decade but since 1962-63 has shown a decline upto 1965-66 and again reached the level of 1962-63 in 1970-71. About 70 per cent of the total cropped area was, and continues to be under foodgrains only—though in the late 50's and early 60's it was more than 75 per cent. In regard to oilseeds, the percentage of area under oilseeds to the total cropped area decreased during the first decade and increased slightly during the second, but is yet to reach the initial level. In regard to Fibres, the percentage of area decreased in the first decade and has maintained almost a constant level since then. In regard to area under non-food crops, there was a sharp decline in the first decade, followed by a marginal recovery in the early 60's and thereafter an almost steady level has been maintained. Thus, the total cropped area has increased from 106.52 lakh hectares in 1950-51 to 128.42 lakh hectares by 1962-63. Subsequently, there has been no increase and only in 1970-71, it was 132.47 lakh hectares. The area under foodgrains increased from 73.37 lakh hectares in 1950-51 to 91.43 lakh hectares by 1960-61 and 97.54 lakh hectares by 1961-62. Since 1962-63, there has been a reduction in the area under foodgrains except in the year 1969-70. In regard to oilseeds, the area decreased from 20.35 lakh hectares in 1950-51 to 14.21 lakh hectares by 1960-61. Since 1960-61 there has been a consistent increase till 1970-71 when it reached 22.77 lakh hectares. In regard to fibres, there was a decline during the first decade from 4.59 lakh hectares to 3.91 lakh hectares. A spurt in the early 60's, a slump in the mid 60's and a recovery soon to 4.20 lakh hectares is observed. In regard to non-food crops there was a decline in the first decade from 28.17 lakh hectares to 21.35 lakh hectares. Subsequently it increased and ranged between 24 and 28 lakh hectares upto 1969-70 with a spurt in 1970-71 to 30.97 lakh hectares.

From a reading of the index number of the area under crops in Andhra Pradesh with the year 1956-57 as the base it is found that impressive increases are observed in sugarcane, mesta, blackgram. In major crops like rice, groundnut, jowar, etc., there has been only a marginal increase. A definite decline is visible in respect of bajra, small millets, bengalgram, horsegram, sesamum, linseed and cotton.

In regard to productivity of various crops, the first decade shows a general increase. Subsequently the picture is unclear and except for a good year in 1964-65, the 60's are not encouraging. In respect of individual crops, rice, jowar, bajra and sesamum show marginal increase in productivity. Groundnut and cotton show disturbing decreasing trends. The position was not encouraging even with regard to sugarcane, chillies and tobacco. The yield rate of rice was 1,028 Kgs. per hectare in 1950-51. It increased by more than 20 per cent during the first decade reaching 1,239 kilograms per hectare

by 1960-61. In 1961-62, it was more being 1,330 kg. per hectare which worked out to 7.3 percent increase over 1960-61. Subsequently, however the average yield has been varying and did not show any increasing trend. Even with regard to jowar, there has been a substantial increase in the first decade and subsequent to 1961-62 there has been almost a decreasing trend. In regard to groundnut there has been only a marginal increase in the first decade and a decreasing trend subsequent to 1960-61. In regard to castor, however, there was an increase in the first decade, a slump in the early 60's, and again an increasing trend during the late 60's.

If the index number of agricultural productivity is studied taking 1956-57 as the base it is found that productivity has increased substantially in respect of maize. Marginal increases are observed in respect of rice, jowar, bajra and sesamum. Productivity in respect of cotton and groundnut shows a disturbing decline in the recent past. In respect of almost all other crops, the productivity index is less than 100 per cent in the year 1969-70 compared to 1956-57. The index for all crops put together was 104.4 for 1960-61 whereas it was only 119.0 for 1970-71. The productivity index was exceptionally good in 1970-71 for all pulses crops as well as chillies crop. The index for jowar showed a decline in 1970-71. It is however, observed that the highest productivity was reached in 1964-65 and subsequently it has been going down.

The production of agricultural commodities shows impressive increase up to 1964-65 and an erratic trend since then. Over the two decades, it is rice production which has nearly doubled itself followed by jowar where the increase was nearly 70 per cent. In regard to other cereals and millets also, there is a 40 to 50 per cent increase in production. Foodgrains in general have recorded an increase. Groundnut, cotton, sesamum and tobacco are almost at 1950-51 level. Sugarcane recorded an increase of more than 200 per cent, compared to 1960-61. However, the increase in respect of other crops are not so impressive except in case of rice where there is substantial increase. There is marginal increase in other crops like jowar and other cereal and millet crops. In absolute terms, the production of rice increased from 22.73 lakh tonnes in 1950-51 to 36.61 lakh tonnes in 1960-61 and reached a maximum of 50.07 lakh tonnes in 1964-65. In regard to jowar, the production increased from 7.44 lakh tonnes to 13.56 lakh tonnes in the first decade and was around 14 lakh tonnes in the first three years of the second decade, and has dropped subsequently. The total foodgrains also show a similar trend. In regard to groundnut, the production was 10.43 lakh tonnes in 1950-51 which fell to 6.94 lakh tonnes in 1960-61, has however been showing an upward trend since 1965-66 reaching 12.34 lakh tonnes in 1970-71. It is in the case of sugarcane production that impressive increases are found. The sugarcane production in terms of gur which was only 4.79 lakh tonnes in 1950-51 went up to 8.13 lakh tonnes by the end of fifties and steadily rose to 12.74 lakh tonnes by 1968-69.

In terms of index of total agricultural production, taking 1956-57 as the base, a major increase in production can be observed up to 1964-65 (127.9). Subsequently, there has been a decrease in all the years and in 1970-71 the index was almost equivalent to that of 1964-65 at 127.8.

From the data it is seen that the area irrigated increased substantially till the early 60's, wells accounting for the maximum increase. The gross irrigated area increased more rapidly than the net irrigated area, increasing from 25.24 lakh hectares in 1950-51 to 35.28 lakh hectares in 1960-61 and to 42.23 lakh hectares in 1970-71. The increase in the net area irrigated was from 23.43 lakh hectares in 1950-51 to 29.09 lakh hectares in 1960-61. By 1962-63, the net area irrigated was 31.82 lakh hectares and subsequently it was below this level till 1970-71 when it was more than that of 1962-63 level at 33.13 lakh hectares. The area under canals increased from 12.04 lakh hectares in 1950-51 to 15.79 lakh hectares by 1970-71. The most impressive and consistent increases are found under wells where the area irrigated increased from 3.03 lakh hectares to 5.09 lakh hectares. There is clear evidence of intensive irrigated cropping. Area irrigated more than once increased from 1.81 lakh hectares in 1950-51 to 9.64 lakh hectares in 1969-70. The gross irrigated area as percentage of gross cropped area has increased from 23.7 per cent in 1950-51 to 29.5 per cent in 1960-61. Subsequently increases have not been consistent and have been only marginal reaching 31.6 per cent by 1969-70. The net area irrigated as a percentage of net area sown shows an increase only during the decade 1950-51 to 1960-61 and has been more or less constant since then. Even the total area reported as irrigated does not fully reflect the investments made in irrigation under the Plans and this aspect requires to be looked into.

The quinquennial livestock census population figures are available for 1956, 1961, 1966 and 1972. Broadly it could be said that for almost all categories of livestock, there is no substantial increase in the numbers. Thus, the total livestock in 1956, was 2.95 crores, in 1961 it was 3.26 crores and in 1972 it reached 3.29 crores.

The three most important livestock categories are cattle, buffaloes and sheep. The population of the cattle is slightly more than 1.2 crores in all the censuses. The buffalo population was 60 lakhs in 1956 which increased to 70.3 lakhs in 1972. Sheep accounted for around 80 lakhs only in all censuses. The population of goats ranged between 36 to 43 lakhs. In regard to Bovine animals, the service animals have been increasing from about 1.21 crores to about 1.38 crores by 1966. The working animals Bovine and the Milch animals also show increases between 1956 and 1961. Since 1961 the number is around 60 to 70 lakhs. In this connection it is necessary to appreciate that the figures of 1951 census are not considered as accurate as those of 1956 and therefore, appropriate comparisons from 1956 onwards would be useful.

The production and value of important forest products is also worth studying. The quantity of timber and fuel produced has increased enormously during the period 1957-58 and 1970-71. The value of bamboo produced increased from about Rs. 29 lakhs to about Rs. 51 lakhs in the corresponding period. The value of beedi leaves also has increased from about Rs. 35 lakhs to Rs. 90 lakhs during the same period. It is in respect of grazing and fodder grasses as well as the minor forest produce that the value has gone down. It is interesting to note that the value of minor forest produce accounted for nearly

Rs. 59 lakhs in 1957-58. By 1970-71 the pride of place is taken by beedi leaves which accounted for nearly Rs. 90 lakhs.

In an agriculture oriented economy, like that of Andhra Pradesh the wages of workers in the rural area, especially the wages of agricultural labour, need to be studied. Taking the year 1958-59 as the base it is found that the wages of all categories of labour have been increasing in money terms. In order to ascertain whether this represents any increase in wages in real terms the increase in price levels will have to be taken into account. Since no rural consumer price index is available we may compare it with the C.P.I. of select towns. It will then be seen that the increase in money wages, is not substantially more than the increase of the consumer price index. In almost all categories the increase in agricultural wages is even less than the increase in the cost of living thus indicating almost a constant real wage as far as the labour is concerned. In the case of artisans like carpenters, blacksmith and cobblers however there is a decline in terms of real wages. In regard to field labour, the increase in money wages is slightly better but not enough to compensate for the increase in prices fully. The differential between man and women as far as the field labour is concerned, continues to persist. The index number for 1969-70 for carpenter is 168.6, for blacksmith 166.4 for cobbler 166.8, for field labour man 182.4 and for field labour woman 185.7 with 1958-59 as the base.

In regard to industry, the overall rate of growth of production of select commodities as well as employment is positive though not impressive. The number of establishments however, has not increased much. Thus, the number of factories is almost the same upto 1970, as it was in 1951 at around 4,600 and was 5,229 in 1971. The number employed has, however, nearly doubled from 1.10 lakhs to about 2.18 lakhs, in about two decades, much of the increase being in the first decade. In regard to minerals, the production shows erratic behaviour. The index of industrial production shows doubling or more (with 1956 as base) in respect of Asbestos, Cement, Paper, Cigarettes and Sugar. The general index, however, shows an almost fourfold increase over the period. Yet, considering the very slender base with which the State started, the growth is not that substantial in absolute terms.

In regard to the establishments under the operation of the Factories Act, the number of establishments decreased from 4,578 in 1951 to 3,160 in 1961. Since then, however, a consistent increase was observed till 1970, and a spurt in 1971 when the number was 5,229. A more correct picture is obtained if we observe the number employed in the establishments under the operation of Factories Act. The number employed increased from 1.10 lakhs to 1.82 lakhs in the first decade. The growth in the second decade was however, slow particularly since 1963. The range of the number employed since 1963 has been 2.09 to 2.35 lakhs.

Of the index number of industrial production in the State is observed, we find that the general index shows substantial increase since 1969 with 1956 as the base. The general index with 1956 as

base is 163 for 1961, 251 for 1969, 466 for 1970 and 420 for 1971. If individual commodities are studied, enormous variations are observed in respect of asbestos products as also cement products. Consistent increases are observed in respect of cigarettes, sugar and jute products.

In regard to the production of minerals, there are high variations over the period of 1960 to 1969. Almost steady increases are found in respect of Graphite, Manganese and Steatite. In most other commodities there is no discernible trend. Iron ore, Limestone and Manganese are the bulky minerals extracted in Andhra Pradesh. The other minerals are of somewhat marginal significance in terms of weight. Barytes, White Clay and White-Shell are also mined in fairly substantial quantities.

The number of Joint Stock Companies registered have increased as far as private limited companies are concerned, whereas in respect of public limited companies, the registrations have increased very marginally. The paid up capital of the companies registered shows consistent increase in both public and private limited companies though the growth is more impressive in respect of private limited companies.

One of the fields in which impressive strides were made by Andhra Pradesh is Power. Power generated as well as consumed has increased by more than twenty times during the last two decades. The number of towns and villages, etc., electrified have increased by fifty times during the last two decades. While in 1950-51 the entire quantity of electricity was generated by steam and diesel sets, in 1970-71 the whole power is generated through hydro and thermal sources almost in equal share. The pattern of consumption has changed, particularly in the second decade in favour of agriculture. The number of wells energised has increased from a meagre 4,930 in 1956 to 2.12 lakhs by March, 1972.

Power is a vital element in the infrastructure for development. The power generation and consumption broadly indicates the level of development of the economy. In Andhra Pradesh only 103.9 Mkw/h was generated in 1950-51. By 1960-61 there was more than a seven-fold increase in the total power generated. In the next 10 years it had increased from about 780 Mkw/h to 2,875 Mkw/h. The major sources of power generation are Hydro and Steam. There have been increases in regard to both Hydro and Thermal Generation over the period. However, in the average composition of the power generated Hydro power accounts for more than the steam power. Thus the percentage of the power generated by Hydro and steam in 1955-56 was 34.1 and 60.0 respectively. In 1960-61 it was 77.9 and 21.3 respectively. By 1970-71 it was 50.1 and 49.9 respectively.

In regard to the consumption of electricity it has increased enormously during the last 20 years. In 1950-51 the total consumption was 98.2 Mkw/h. by 1955-56 it was nearly doubled being 186 Mkw/h. By 1960-61 it reached 602.6 Mkw/h. From then the power consumption has been increasing rapidly almost at the rate of about 100 Mkw/h till 1966-67. Subsequently the average annual growth rate of power

consumption is nearly 300 Mkw. In 1970-71 the consumption was 2,186.2 Mkw. which represents a 20 fold increase over the 20 years.

The pattern of consumption has also undergone a substantial change. Domestic consumption accounted for 21.3 per cent of the total in 1950-51 whereas in 1970-71 it is only 8.2 per cent. In absolute terms however the consumption has naturally increased by nearly 9 times. The composition in regard to the other items of consumption can be studied more easily from 1960-61. It is found that during the decade 1960-61 to 1970-71, Domestic, Commercial and Public Lighting Consumption have come down in terms of percentage composition for the respective years relative to the total consumption. Industrial consumption has come down marginally. The most impressive increase during the period is in respect of agricultural consumption. It increased from 9.4 per cent of the total consumption to 18.0 per cent. In terms of the power consumed, while it was 63.5 Mkw in 1960-61 it rose to 393.8 Mkw. in 1970-71.

With regard to the number of towns and villages electrified including hamlets only 177 were electrified upto 1950-51. Even in 1955-56 the number was as low as 637. By 1960-61 it increased to 2,655 and by 1965-66 it was 4,318. During the next six years, the number was more than doubled bringing the total number of towns and villages electrified to 9,475 in 1972. The number of wells electrified in 1956-57 was 4,930 and by 1960-61 it went upto 15,852. Impressive increases are found in the second decade when the number rose to 39,566 by 1965-66 and to 2.12 lakhs by March 1972.

Transport and Communications play an important role in the process of development. The length of roads increased by about 70 per cent in about thirteen years (1956-69). Increases are particularly noticeable in "State Highways" and "Village Roads" indicating a better integration of the State economy in general, and an opening up of the rural areas substantially. This process was more evident in the sixties. The number of Motor vehicles registered and the services of Government passenger transport organisation have also increased. However practically no growth in new railway routes is noticeable. There has been a steady increase in the number of Post and Telegraph Offices in the first decade.

The total road length in Andhra Pradesh increased from 31,333 Kms. in 1956 to 38,624 Kms., in 1961. By 1969 the total road mileage was 54,231 Kms. The length of National Highways has been practically constant since 1956, which was 2,340 Kms., in 1969. There was only marginal increase in the length of State Highways from 2,208 Kms. to 2,424 Kms. during the period 1956-61. Subsequently, however, there has been two-fold increase in regard to the length of roads under State Highways taking the total to 5,966 Kms. in 1969. In respect of Major District Roads there was marginal increase during 1956-61 and decline between 1961 and 1969. It is probable that the decline was due to conversion of some major district roads into State Highways. The "Other District Roads" have increased enormously by nearly two and half times during the period 1956 to 1969. The major increase was during the period 1961 to 1969 from

about 5,623 Kms. to 10,614 Kms. In regard to "Village Roads" also there was an increase from 6,194 Kms. in 1956 to more than 19,000 Kms. by 1969.

The motor vehicles registered in the State have increased from about 27,000 in 1951 to about 35,000 in 1961. During the decade 1961 to 1972 there was greater increase and the number was nearly 89,000. Substantial increases are found in respect of Goods Vehicles, Motor Cars, Motor Cycles and Scooters.

In regard to the Road Transport Corporation Services in Andhra Pradesh, the average number of buses in use increased substantially from 905 to 2,051 during the decade 1961 to 1971. The number of passengers carried increased from about 5 crores in 1956-57 to about 32 crores in 1970-71.

In respect of Railways very few new railway lines, for opening of new areas, were laid. But conversion from metre-gauge to broad-gauge and doubling broad gauge lines has occurred substantially. As a result the route length increased from about 2,800 Kms. in 1957 to 4,700 Kms. by 1971. The number of Stations has increased during the second decade from 500 to 836.

The Post and Telegraph facilities have also increased substantially. The number of Post Offices has increased from 6,702 in 1956 to 12,388 in 1966. Subsequently the growth in the number of Post Offices was marginal reaching a figure of 13,589 by 1972. The number of Telegraph Offices increased from 374 in 1956 to 1,114 in 1972.

Impressive increases have taken place in Social Service facilities especially under Education and Health sectors. The growth in the number of primary and secondary level institutions was phenomenal in the first decade, the increase in scholars being even more. In the second decade however, the increase was less impressive. At the professional level the number of institutions increased substantially in the first decade whereas the number of schools increased in the second decade. In regard to collegiate education the increase was spectacular in the second decade. In regard to health facilities, the number of Allopathic hospitals increased by nearly 50 per cent between 1957 and 1961 and by about 40 per cent during 1961-71. The number of beds, however, increased only by about 38 per cent and 10 per cent respectively during the above periods. In regard to Government Doctors the increase was slightly less than double during 1957-61 and more than 60 to 70 per cent during 1961-71.

The number of schools at primary and upper primary level which stood at 5,933 in 1951-52 increased enormously to about 37,100 in 1961-62. Subsequently however, the growth in the number is marginal taking the total to 40,340 by 1970-71. In regard to scholars also the expansion is nearly nine-fold during the first decade. Subsequently it is only about 25 per cent. A similar trend is observed in regard to High Schools and Higher Secondary Schools. During the period 1952 to 1962, the number of schools increased from a mere 95 to 2,723. Subsequently the increase was marginal and it was 2,994 by

1970-71. In regard to number of scholars, the number increased by nearly fifteen times during the earlier decade whereas subsequently it was more than 10 per cent. In regard to Professional education, however, the number of institutions increased from 27 to 39 by 1961-62. Subsequently, 8 more institutions were added bringing the total number to 47 by 1970-71. Though the number of institutions added during the period 1961-62 to 1970-71 was only 8, the number of scholars increased more than proportionately to 22,158. In regard to Colleges for general education there has been a constant increase. In the earlier period the increase in the number of institutions was about 86 per cent, whereas in the later period it was multifold. In regard to the number of scholars in the first decade the increase was 100 per cent whereas in the second decade it was more than 200 per cent. During the period 1951-52 to 1970-71 the number of institutions increased from 37 to 302 and the scholars from 23,000 to 1,57,000.

The total number of Allopathic hospitals increased from 396 to 1,404 between 1956-57 and 1970-71. The number of beds increased from about 14,000 to 22,531. The number of doctors increased from 1,094 in 1956-57 to 2,048 in 1960-61. By 1969-70 the number increased to 3,521. In respect of Unani and Ayurvedic hospitals there was only a marginal increase between 1956-57 and 1960-61 when the number was about 700. By 1970-71 the number increased to more than 1,000.

In regard to Co-operative institutions impressive growth is found in Land Mortgage Banks. In regard to Co-operative Credit, the second decade indicated some stagnation. The Commercial Banks, however, expanded enormously in the recent past.

The number of Primary Agricultural Credit and Multipurpose Co-operative Societies increased from about 8,000 in 1951 to about 14,000 in 1961 and only marginally to about 15,000 by 1970-71. In regard to membership also a similar trend was observed. The increase was from about 5 lakhs in 1951 to about 14 lakhs in 1961 and to 22.6 lakhs in 1970-71. The number of Primary Land Mortgage banks also increased from about 50 in 1951 to 105 in 1961 while the membership went up from about 50,000 to about 2 lakhs or nearly four times. Between 1960-61 and 1970-71, the number increased from 105 to 181 and the membership from about 2 lakhs to nearly 7 lakhs. In regard to industrial Co-operatives, Weavers Co-operatives and other Co-operatives the number and membership increased marginally subsequent to 1961.

In regard to the working of the Primary Land Mortgage Banks the share capital increased from about Rs. 12 lakhs in 1950-51 to about Rs. 56 lakhs by 1960-61 and to Rs. 748 lakhs by 1970-71. The working capital also increased from about Rs. 1.6 crores in 1950-51 to Rs. 98 crores by 1970-71. However, the most impressive increase was noticed in the quantum of loans advanced. It went up from about Rs. 41 lakhs in 1950-51 to Rs. 1.8 crores by 1960-61 and to Rs. 20.7 crores by 1969-70. In the next year it however, came down to Rs. 19.8 crores.

In regard to the Primary Agricultural Credit and Multipurpose Societies the share capital increased from about Rs. 81 lakhs to Rs. 4.1 crores in the first decade. During the second decade it was more than doubled and the figure rose to Rs. 10.6 crores. The working capital also increased from Rs. 5.3 crores to Rs. 26.1 crores in the first decade and to Rs. 50.9 crores by 1970-71. The loans advanced also increased substantially in the first decade, from about Rs. 2.9 crores to Rs. 18.9 crores. In the second decade, the increase was, however, not substantial and the amount increased to only Rs. 28.7 crores in 1970-71. This may perhaps be attributed to some of the structural weaknesses in the working of these institutions. The overdues increased disproportionately to the loans during the second decade taking the overdues from Rs. 3.7 crores to Rs. 17.1 crores. The overdues which formed 19.4 per cent to loans advanced in 1960-61 increased to 59.6 per cent in 1970-71.

The number of working offices of the Commercial banks in Andhra Pradesh increased nearly four fold from 224 to 869 during the two decades. The major increases are found in the second decade. The number of places covered increased by more than four-fold and the increase was more in the second decade, particularly during the period 1966 to 1971. The population coverage per office decreased from 1,40,000 in 1951 to 1,08,000 in 1961, 86,000 in 1966 and 50,000 by 1971.

The trends in total commercial bank deposits and advances in the State are of interest. In 1961 the deposits and advances figures were Rs. 43.7 crores and Rs. 40.3 crores respectively. By 1970 there was a multi-fold increase in that, they reached Rs. 183.00 crores and Rs. 199.7 crores respectively.

To sum up, in any review of the economic development of Andhra Pradesh, the year, 1964-65 stands out as a significant one. Upto that period there had been steady although modest growth while subsequently there has been only a decline or stagnation, or a somewhat weak recovery so that the level of income of that year in per capita real terms has not yet been achieved again. This unique phenomenon is the result of the combination of several unfortunate circumstances all of which have had a dampening effect on the economy of the State. Firstly, the effect of the recession and the sharp increase in prices which the country as a whole experienced after 1965-66 was naturally felt in Andhra Pradesh also. Secondly, since then there have been droughts and floods in large parts of the State almost every year even when the country as a whole has had a long spell of good agricultural years. Thirdly, the State has been consistently facing financial difficulties. This was partly due to the fact that the adverse seasonal conditions and the consequent decline in agricultural production itself affected the resources of the State which were to a great extent dependent upon this Sector. The nature of the previous investments as a result of the high priority given to Irrigation and Power and the patterns of the Central assistance resulted in the State accumulating a large debt burden. Again, in view of the projects taken up in Irrigation and Power being long-gestation ones and as a result of the terms of Central loans not making any allowance for

this, the debts became repayable long before the investments started yielding results. As a consequence of these two trends, viz., a decline in the buoyancy of the State revenues due to adverse seasonal conditions and the growing debt burden a strain was imposed on the financial resources of the State. Simultaneously, the Central assistance available for the Plans declined from 63 per cent during the Third plan period to 51 per cent in the Fourth Plan or 65 per cent in 1965 to 48 per cent in 1971-72. All these factors resulted in a decline of the outlays on the Plan from Rs. 105 crores in 1965-66 to a low level of Rs. 67 crores in 1967-68. Even to-day, the outlay on the Plan is lower than the outlay in 1965-66 both in money terms and much more so in real terms. However, during this same period, the commitments increased sharply due to a number of projects involving rather heavy investments, all of which had been started in the earlier buoyant period, being bunched together. The sharp decline in developmental investments is the main reason for the stagnation.

STATE PLANS :

The State Plans have special significance in as much as they cover a wide area of economic activities significant for the people at large. The more important of the activities relevant for State Planning are agriculture, animal husbandry, forestry, fisheries, irrigation, power, roads, education, medical and public health and social welfare. A review of the performance of the State Plans is therefore essential not only for assessing the present level of development but also for ensuring a suitable strategy for future plans. The following table shows the plan expenditure in broad sectors from First Plan onwards.

Sector.	Expenditure			Rs. in Crores.		
	First Plan.	Second Plan.	Third Plan.	Three Annual Plans.	Fourth Plan (anticipated).	Total upto the end of Fourth plan.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Agriculture and Allied ..	10.76 (11.1)	18.40 (9.8)	51.48 (14.6)	34.76 (14.8)	47.46 (11.1)	162.86 (12.5)
2. Co-operation and C. D. ..	1.53 (1.6)	18.97 (10.1)	27.41 (7.8)	6.07 (2.6)	18.00 (4.2)	71.98 (5.5)
3. Irrigation ..	21.86 (22.6)	57.43 (30.4)	93.02 (26.4)	59.36 (25.4)	98.18 (23.0)	329.85 (25.4)
4. Power ..	37.84 (39.1)	38.53 (20.4)	93.62 (26.6)	97.96 (41.8)	176.28 (41.4)	444.23 (34.2)
5. Industry & Mining ..	1.15 (1.2)	10.15 (5.4)	15.19 (4.3)	7.11 (3.0)	14.77 (3.5)	48.37 (3.7)
6. Transport & Communications ..	3.43 (3.5)	9.52 (5.0)	17.00 (4.8)	7.21 (3.1)	15.50 (3.6)	52.66 (4.1)
7. Social services ..	18.40 (19.0)	33.51 (17.8)	53.22 (15.1)	21.45 (9.2)	56.91 (13.3)	183.49 (14.1)
8. Miscellaneous ..	1.81 (1.9)	2.09 (1.1)	1.48 (0.4)	0.14 (0.1)	0.38 (0.1)	5.90 (0.5)
Total ..	96.78 (100.0)	188.60 (100.0)	352.42 (100.0)	234.06 (100.0)	427.48 (100.0)	1,299.34 (100.0)

Note :—Figures in brackets are percentages to the total.

A study of the expenditure under the various plan periods shows that the expenditure has been changing from year to year. It was stepped up steadily from a total of Rs. 97 crores in the First Plan period to an estimated amount of Rs. 427 crores in the Fourth Plan period. Compared to the expenditure in the First plan of Rs. 97 crores, the expenditure in the Second plan registered an increase of about 95% reaching a level of Rs. 188.60 crores. The Third plan also involved a stepping up over the Second Plan to the tune of 87 per cent involving an expenditure of Rs. 352.42 crores. After completion of the Third Five Year Plan, there was a delay of three years in the launching of the Fourth Plan. During this interval of three years, three annual plans were implemented involving a total expenditure of Rs. 234.06 crores. The average annual expenditure during the three Annual Plans is marginally more than the average annual expenditure during the Third Plan. However, the estimated average annual expenditure in the Fourth Plan is expected to be about 9.2 per cent more than that of the average of the Three Annual plans preceding the Fourth Plan. Thus, the annual expenditure on plan schemes increased from a mere Rs. 15.27 crores in 1951-52 to more than Rs. 105 crores in 1965-66. However subsequently, the outlay has decreased. The actual expenditure incurred was Rs. 98.39 crores in 1966-67, Rs. 66.30 crores in 1967-68 and Rs. 74.36 crores in 1968-69. Since 1965, there have been droughts and floods in large parts of the State almost every year, and consequently there was decline in Agricultural Production itself which affected the resources of the State. Secondly, the nature of investments in the past as a result of the high priority given to Irrigation and Power and the pattern of Central Assistance resulted in the State accumulating a large debt burden. As a consequence of these two trends a strain was imposed on the financial resources of the State. Simultaneously, the Central assistance available to the State has also declined from 63 per cent during the Third Plan period to 51 per cent in the Fourth Plan. All these factors resulted in a decline in the outlays on the Plan from Rs. 105 crores in 1965-66 to a low level of Rs. 67 crores in 1967-68. Even in the last years of the Fourth Plan the outlay on the plan is lower than the outlay in 1965-66 both in money terms and much more so in real terms.

Over all the Plans, Agriculture, Irrigation and Power have received the highest priority. The priority given for Agriculture was justified not only because it reflected the priority given for Agriculture but also because the economic conditions of the State demanded it since nearly two thirds of its population depended on land for their living in one way or other and no substantial increase in income in the State could be planned within a short period without an increase in agricultural production. The Agricultural Sector including Community Development and Co-operation received 13 percent of the total outlay in First Plan, 20 percent in Second Plan, 22 percent in Third Plan, 17 per cent in the three Annual plans and 15 percent in the Fourth Plan. For the period 1950-51 to 1973-74, the percentage allocation to Agricultural sector amounts to 18 percent the allocations for Irrigation in our Plans have also been given high priority because of the close and vital link between Irrigation and Agriculture and partly because of the Nagarjunasagar Project which required large outlays. An amount of Rs. 39.00 crores in the Second Plan, Rs. 65.00 crores in the Third

Plan, Rs. 42.50 crores in the three Annual Plan years and Rs. 43.56 crores in the Fourth Plan was incurred on this project. Thus, from the inception of the Project up to 1973-74 an expenditure of Rs. 190.06 crores has been incurred on this Project. The allocation for Irrigation represented 23 per cent in First Plan, 30 per cent in Second Plan, 26 per cent in Third Plan 25 per cent in the three Annual Plans and 23 per cent in the Fourth Plan. For the period 1950-51 to 1973-74 the percentage allocation for Irrigation works out to 25 per cent. Since Andhra Pradesh has a per capita consumption of Power which is one of the lowest among the States in the country and since Power is an essential requirement not only for the industrialisation of the State but also for increased agricultural production itself, Power has been given the highest priority in our Plans. The Power sector has taken 39 per cent in the First Plan, 20 per cent in Second Plan, 27 per cent in Third Plan, 42 per cent in the three Annual Plans and 41 per cent in the Fourth Plan. For the period 1950-51 to 1973-74, this sector has taken 34 per cent. Thus, the allocations for Agriculture, Irrigation and Power have been of the order of Rs. 72 crores representing 74 per cent in the First Plan, Rs. 133.11 crores in the Second Plan, representing 70 per cent of the Plan, Rs. 265.52 crores, representing 75 per cent in the Third Plan, Rs. 198.15 crores representing 84% in the three Annual Plans and Rs. 338.44 crores representing 79% in the Fourth Plan.

Naturally, one of the results of allocations of the above order for Agriculture, Irrigation and Power has been that we have not been able to provide what would normally have been required under Industries, Transport and Social Services sectors. The Industries sector received Rs. 1.15 crores, representing 1 per cent of the total expenditure in First Plan Rs. 10.15 crores representing 5.4 per cent in the Second Plan and Rs. 15.19 crores representing 4.3 per cent in the Third Plan Rs. 7.11 crores representing 3 per cent in the three Annual Plans and Rs. 14.78 crores representing 3.5 per cent in the Fourth Plan. For the period 1951-74 the total expenditure incurred on Industries sector amounted to only Rs. 48.38 crores. It would, however, not be correct to directly correlate the progress of industrialisation in the State merely on the basis of allocations for Industries in the State. The role of the State Government in Industrial Development and Plan allocations is limited to the extent of providing necessary facilities and building up the infrastructure for promotion of industrial development, where as the major share of the investments will have to be in the Central and Private sectors. One of the important pre-requisites for the rapid industrialisation of the State is the development of Power and the Power sector has been given the highest priority in the State Plan.

The allotment made for Transport and Communications sector was also not very substantial. The Transport and Communications sector received Rs. 3.43 crores representing 3.5 per cent in the First Plan, Rs. 9.52 crores representing 5 per cent in the Second Plan, Rs. 17.00 crores representing 4.8 per cent in the Third Plan, Rs. 7.21 crores representing 3.1 per cent in the three Annual Plans and Rs. 15.50 crores representing 3.6 per cent in the Fourth Plan. The position is similar with regard to the Social Services sector. In fact the percentage allot-

ment made for Social Services has been going down from Plan to Plan. While the allotment in the First Plan for Social Services sector was Rs. 20.21 crores representing 21.0 per cent, in the Second Plan this sector received only 19.0 per cent of the total outlay amounting to Rs. 35.60 crores. The allotment in the Third Plan for Social Services was Rs. 54.70 crores representing only 15.5 per cent. For the Annual Plan years of 1966-69, the percentage allotment is only 9.3 amounting to Rs. 21.59 crores while the Fourth Plan allotment is only 13.5 per cent amounting to Rs. 57.21 crores. However, even so those aspects of the Social Services Programmes which have an immediate bearing on the productive effort of the country such as technical and professional education were not allowed to suffer. But so far as welfare and ameliorative schemes are concerned, it has to be admitted that the effort has fallen short of the real and basic needs. This represents in a sense, the social cost, the State has been bearing by giving priority to Agriculture and Irrigation in the interests of national priorities.

A detailed analysis of the levels of development reached by the State for which the State Plan effort constitutes an important instrument has been made in a separate section. However, a few of the physical achievements may be indicated here to high-light the efforts under the Plan. The irrigation projects under-taken under the plans are estimated to have created an irrigation potential of nearly 57 lakh acres. The installed capacity for power generation has increased from 21 million Kilo watts in 1950-51 to nearly 888 million Kilo watts by 1973-74. As against less than 200 towns and villages electrified by 1950-51, more than 8,300 of them were electrified by 1970-71. In the field of agriculture, the consumption of fertilisers distributed through State Agencies increased from 0.33 lakhs tonnes of nitrogenous fertilisers in terms of ammonium sulphate in 1956-57 to nearly 10.41 lakh tones in 1970-71. The road communications in the State increased from 31,000 km. in 1956 to more than 54,000 km. by 1969. The primary schools increased nearly 7 fold over 1950-51 level, colleges for general education by five fold and those of professional education by 30 per cent.

SPECIAL TELANGANA DEVELOPMENT SCHEMES :

Consequent on the determination of the unutilised Telangana surpluses by the Bhargava Committee, the State Government had decided to make available an amount of Rs. 45.00 crores from out of the special assistance provided by the Government of India for the accelerated development of Telangana region from 1st April, 1968 to end of the Fourth Plan. Excluding an amount of Rs. 1.28 crores utilised during the year 1968-69, an amount of Rs. 43.72 crores was available for the Special Development Programmes during the Fourth Plan period. A Special programme for utilisation of this amount was drawn up by the State Government in consultation with the Telangana Development committee. Against this provision till the end of the Fourth Plan, an amount Rs. 36.99 crores was utilised on programmes indicated below till 1972-73. An amount of Rs. 6.73 crores is provided for the last year of the Fourth Plan.

	<i>Rs. in lakhs.</i>
Rural electrification	1336.00
Irrigation	880.73
Communications	488.63
Water Supply	320.83
Education	157.28
Milk Supply Schemes	105.06
Harijan Welfare	100.47
Tribal Welfare	99.02
Other Schemes	210.64
Total	3698.66

The bulk of the amount to be provided for the Special Telangana Development Schemes has been utilised for Rural Electrification of the region. 1,261 villages have already been electrified and 52 more villages are proposed to be electrified during the last year of the Fourth Plan. Of the provision made for the Special Development programme in the Telangana region, an amount of Rs. 6 crores is intended as an additional resource for the expeditious completion of the Pochampad project. An early completion of the Project is crucial to the quick development of the region. Besides this, an amount of Rs. 23.23 lakhs has been utilised for remodelling the distributaries of the Nizam-sagar project. A little over Rs. 3.5 crores was spent for the development of minor irrigation facilities and about a crore of rupees is also proposed for the last year of the Plan. By the end of 1972-73, irrigation potential, to the extent of about 45,000 acres was created besides stabilising supplies for the existing ayacut of 39,000 acres. About Rs. 5 crores was also utilised on the development of communication facilities through the Panchayati Raj Institutions. Under this programme, 1,556 Km of roads were laid besides metalling 1,315 Km length and black topping of 47 Km. The construction of 183 bridges/causeways and 2,680 culverts was completed. From out of these funds, water supply schemes in the Town committees have been taken up and 31 water supply schemes have been completed till the end of the year 1972-73. In addition, the Municipalities were also given loan assistance to secure financial assistance from the L.I.C. of India for the water supply schemes. Till the end of 1972-73, an amount of Rs. 320.83 lakhs was spent and an amount of little less than a crore of rupees is proposed to be utilised for the same scheme during the last year of the Fourth Plan. To promote educational facilities in the Telangana region, funds were provided to the Osmania University to start a special course for graduate teacher candidates in M.Sc. physics and Chemistry. Financial assistance was also given for the construction of buildings for the private colleges. Under this programme, Dairy and Milk supply schemes through the establishment of Milk Chilling centres and starting of Intensive Cattle Development Blocks was taken up. Funds have also been provided for the establishment of the Milk Power Factory at Hyderabad. With a view to promoting Harijan and Tribal welfare, funds were placed at the disposal of the Panchayati Raj Institutions for programmes relating to their welfare. Besides, an amount of Rs. 45 lakhs was contributed towards the share capital of the Andhra Pradesh Scheduled Castes and Scheduled Tribes Co-operative Housing Societies Federation to build houses for Harijans.

4. ECONOMY OF ANDHRA PRADESH : LEVELS OF DEVELOPMENT.

In our Plans so far implemented no positive policy has been adopted in regard to planned development for achieving reduction of regional disparities, though the need for and the general approach to balanced regional development was spelt out in some detail in both the Second and Third Five-Year Plans. It was stated in the Third Plan that "in drawing up and implementing the Second Plan, the regional aspects of development were dealt with in three different ways. Firstly, through the Plans of States, emphasis was given to programmes which had a direct bearing on the welfare of the people in different parts of the country. Secondly, special programmes were undertaken in particular areas where development had either received a temporary set-back, or was being held back by certain basic deficiencies. In the third place, steps were taken to secure more dispersed development of industry which, in turn, creates conditions for development in several related fields."

2. So far as the Third Plan itself was concerned, emphasis was laid on the fact that since some of the most important Plan Schemes fell within the State Plan, the size and pattern of outlays for the States under the Third Plan had been so calculated as to "reduce disparities of development between different States, although in the nature of things this is a process which must take time". Besides this, several features in the Third Plan were indicated as being intended to "enlarge the possibilities of development in areas which have in the past been relatively backward". Among these were the intensive development of agriculture, expansion of irrigation, village and small industries, expansion of power, development of roads and road transport, educational facilities, provision of water supply and programmes for the welfare of Scheduled Tribes and Scheduled Castes.

3. The location of basic industries as means for achieving regional development was mentioned both in the Second and the Third Plans. Technical and economic limitations were emphasised, but it was stated that subject to these considerations the claims of under developed regions should be kept in view.

4. In contrast to the fairly elaborate treatment of this aspect in the Third Five-Year Plan, the Fourth Five-Year Plan, while it deals in detail with regional development in the sense of physical planning, particularly of urban and metropolitan areas, makes only a brief mention of the correction of regional imbalances. While describing it as a problem that is "highly complex" the Plan document states that "differences in development between State and State arise out of variations in activity in the three sectors—co-operative, private and public". With regard to the first, it is stated that "no specific new programmes or policies of the Central Government could help materially in this regard". With regard to the second, it is stated that this would depend "on the extent of entrepreneurship within the State and the resources commanded by it". With regard to the

third, it is stated that "availability of resources with Governments of States for planned development is the heart of the matter". This is in contrast to the approach in the Third Plan where the State Plan outlays were taken as important instruments for the reduction of regional disparities. While the Third Plan emphasised the crucial role of the State Plan outlay in reducing regional disparities, the Fourth Plan document mentions only the allocation of central assistance and that too with the corollary that in the existing arrangements such help will not be substantial. The whole question of adopting a positive policy in regard to planned development for achieving reduction of regional disparities, therefore, remains unresolved.

5. In all these discussions, regional disparity has been taken to mean the disparity in the levels of development between different States. However, an attempt has sometimes been made to define a region as an area smaller than that of a State and pose the problem as one of identifying such under developed regions all over the country and of seeking to achieve their development irrespective of the level of development of the State as a whole in which such regions may occur. To the extent, however, that many of the policies and programmes that are needed to be adopted for developing such regions happen to fall within the State Plan, the level of development of the State becomes a very crucial factor, since States which on the whole are more developed and financially stronger would be better placed to tackle such problems within their allocations than the States which, besides having such underdeveloped regions, happen to be less developed in other respects also and are as States financially weaker. The problem of backward regions has, therefore, necessarily to be considered as a two tier problem, viz., less developed States as one level and less developed regions within the State as another. National policy in regard to balanced regional development should concern itself with problems related to less developed States and should make a distinction between the problems of backward areas that occur within a less developed State and those that occur within a State that is otherwise advanced.

6. It would be useful at this juncture to study how Andhra Pradesh is placed when compared to other States and All India in respect of selected indicators of development.

7. Andhra Pradesh with a population of 43.5 million is the fifth largest State in the country accounting for 7.9 per cent of the country's population. Uttar Pradesh, Bihar, Maharashtra and West Bengal are the other four States which have a larger population than Andhra Pradesh (*vide* Table 1).

8. The State has a low population density and a low population growth rate. According to the 1971 Census, the population density in the State is only 157 persons per sq. km. against the All India average of 182. The States with very high densities of population are Kerala and West Bengal with density 548 and 507 respectively. Besides a low density of population, Andhra Pradesh is also having a low rate of growth of population. During the decade 1961-71, the growth of population in Andhra Pradesh was 20.90 per cent only against the All India average of 24.66 per cent. It is interesting

to note that there is only one State, *viz.*, Uttar Pradesh, where the rate of growth of population in 1961-71 has been less than that of Andhra Pradesh (*vide* Table 2). It is, however, a matter of concern that though the birth rate in Andhra Pradesh is lower than that for the country as a whole, the lower growth rate in Andhra Pradesh is also partly due to a higher death rate than All India. It was estimated that during 1966-70, while the birth rate for Andhra Pradesh was 37.3 per 1,000 population against 38.6 for All India, the death rate in Andhra Pradesh was of the order of 16.6 deaths per thousand population against 14.00 in All India.

9. Andhra Pradesh has a smaller percentage of workers engaged in non-agricultural occupations compared to All India average. According to the 1971 Census, 30.37 per cent of the workers in Andhra Pradesh are engaged in non-agricultural occupations against 31.37 per cent for the country as a whole. The States with higher percentage of workers in non-agricultural occupations are Kerala, with 51.37 per cent, West Bengal with 42.50 per cent, Tamil Nadu with 39.90 per cent, Punjab with 37.22 per cent, Maharashtra with 35.93 per cent and Gujarat with 34.93 per cent (*vide* Table 2).

10. There is a high positive correlation between the proportion of workers in non agricultural occupations and the degree of urbanisation. The States which have a high percentage of non-agricultural workers are also the States where the degree of urbanisation is fairly high. In 1971, the urban population in Andhra Pradesh constituted 19.35 per cent of the total population against 19.87 per cent in the country as a whole and 31.20 per cent in Maharashtra, 30.28 per cent in Tamil Nadu, 28.13 per cent in Gujarat. Obviously, there does not appear to have been a significant increase in non-agricultural occupations in the State during the decade 1961-71 as can be seen from the increase in urban population. During the decade 1961-71, the urban population in Andhra Pradesh rose by 33.81 per cent only against 37.83 per cent in the country as a whole. Some of the other States such as Orissa, Bihar, Madhya Pradesh and Rajasthan, which also have a smaller proportion of workers engaged in non-agricultural occupations than the All India average, have in fact shown higher rates of urban population growth during the decade 1961-71. The rate of growth of urban population during this decade is as high as 63.52 per cent in Orissa, 46.31 per cent in Madhya Pradesh, 44.45 per cent in Bihar and 38.03 per cent in Rajasthan.

11. The percentage of literates to total population in Andhra Pradesh according to the 1971 Census was very low being 24.56 per cent against the All India average of 29.34 per cent. In literacy rate, Andhra Pradesh ranks 13th among the 18 States of the Indian Union, excluding the new States of Meghalaya, Manipur and Tripura. The States which have a literacy rate below that of Andhra Pradesh are Madhya Pradesh, Uttar Pradesh, Bihar, Rajasthan and Jammu and Kashmir. The increase in literacy in the State during the decade 1961-71 fell short of the rate for the rest of the country. This can be seen from the fact that during 1961-71, the rate of growth of literacy was 22.10 per cent in All India whereas it has been only 15.90 per cent in Andhra Pradesh (*vide* Table 2).

12. Andhra Pradesh is generally considered as an advanced State in so far as agriculture is concerned. This is true when we consider yields per hectare. During 1961-69, Andhra Pradesh ranked 6th in regard to yield per hectare of rice and 3rd in regard to yields per hectare of groundnut and sugarcane. However, in regard to cotton, the yield per hectare was much lower. During this period, the yield of rice in Andhra Pradesh was 12.3 quintals per hectare against 9.8 quintals in All India. Similarly the yield per hectare of groundnut in the State was 7.2 quintals against 6.4 quintals in All India and that of sugarcane (in terms of gur) was 81.8 quintals against 48.8 quintals in All India. Thus, the relatively high yields of some of the principal crops in Andhra Pradesh give the impression that the State is much above several States in agricultural development. However, the position is that, according to the comparable estimates of income from agriculture prepared by the Central Statistical Organisation, in 1969-70 the per capita income from agriculture (including Animal Husbandry) was only Rs. 288 in Andhra Pradesh against Rs. 283 in All India and Rs. 565 in Punjab and Rs. 561 in Haryana. The State ranked 10th among the 18 States of the Indian Union, excluding the newly formed States of Meghalaya, Manipur and Tripura in regard to the per capita income from agriculture (*vide* Table 3). This trend is due to two factors. Firstly, though the agricultural production in the State had gone up more or less steadily till 1964-65, there was, however, a stagnation in the subsequent years due to drought conditions. The index of agricultural production for the State increased by 27.9 per cent during 1956-57 to 1964-65 against an increase of 28.5 per cent for the country as a whole. Subsequently, due to the adverse seasonal conditions the agricultural production in the State never reached the production levels of 1964-65. In 1969-70, the index of agricultural production for the State was only 16.1 per cent higher than that in 1956-57, against 37.0 per cent in the country as a whole. The other factor responsible for a relatively low per capita agricultural income in the State is that a considerable acreage is under low income yielding crops such as pulses and millets.

13. The backwardness of the State is much more glaring in the industrial and commercial fields. In 1967, the per capita value added by manufacturing industry was only Rs. 17 in Andhra Pradesh against Rs. 42 in the country as a whole and Rs. 120 in Maharashtra, Rs. 91 in West Bengal, Rs. 82 in Gujarat and Rs. 54 in Tamil Nadu. Only four States, *viz.*, Rajasthan, Uttar Pradesh, Orissa and Jammu and Kashmir have a lower per capita income from manufacturing industry than Andhra Pradesh. Thus, the glaring regional imbalances in the development of new industrial units appear to have widened further despite two decades of economic planning (*vide* Table 4).

14. The average daily employment of factory workers per 1,000 population in Andhra Pradesh in 1971 was only 6.0 against the All India average of 9.0 and 20.2 in Maharashtra, 18.8 in West Bengal, 16.6 in Gujarat and 10.7 in Tamil Nadu. The lower level of industrialisation in the State is also reflected by the lower per capita consumption of electricity for industrial purposes. In regard to this indicator, the State ranks 13th among the States of the Indian Union, excluding Meghalaya, Manipur and Tripura. The per capita consumption of electricity for industrial purposes in the State in 1970-71 was 22.3

K.W.H. only against 54.9 K.W.H. in All India and 105.9 K. W. H. in Maharashtra, 93.5 K.W.H. in Punjab, 90.2 K.W.H. in Gujarat 70 to 80 K.W.H. in Mysore, Tamil Nadu and West Bengal (*vide* Table and 4).

15. Even in regard to per capita total consumption of electricity, the State fared no better having occupied the 11th rank among the 18 States of the Indian Union excluding Meghalaya, Manipura and Tripura. The total consumption of electricity per capita in 1970-71 in Andhra Pradesh was only 50.5 K.W.H. against 80.9 K.W.H. in the country as a whole. The highest per capita consumption of electricity was 153.3 K.W.H. in Maharashtra followed by 140 K.W.H. in Punjab, 129.8 K.W.H. in Tamil Nadu, 124 K.W.H. in Gujarat, 106 K.W.H. in West Bengal and 101.2 K.W.H. in Mysore. The industrial backwardness of Andhra Pradesh is also evident from the per capita banking facilities and credit. The per capita bank credit from commercial banks, in 1970, was the highest in Maharashtra at Rs. 262.4—a little more than three times the national average of Rs. 83.9. On the other hand in Andhra Pradesh the per capita bank credit from commercial banks was a mere Rs. 49.7. However, in terms of banking facilities, the disparity between Andhra Pradesh and All India average is somewhat less compared to that in regard to bank credit extended by commercial banks. In 1970, there were 2.3 banking offices per lakh population in Andhra Pradesh against 2.9 in the country as a whole and 5.7 in Gujarat, 5.4 in Maharashtra, 5.1 in Mysore, 4.5 in Punjab, 4.1 in Kerala and 4.0 in Tamil Nadu (*vide* Table 4).

16. In respect of total roads per 100 sq. kms. of area, Andhra Pradesh is near about the All India average with 37 km. against 36 kms. All India average as at the end of 1969-70. But, in railway route mileage, in 1967-68, the State had only 17 kms. per 100 sq. kms. of area against 18 in the country as a whole (*vide* Table 4).

17. While the State ranked 8th and 10th in regard to railway route mileage and road mileage among the States of the Indian Union, it occupied the 12th place in regard to number of motor vehicles per lakh population. At the end of 31st January 1970, there were 240 motor vehicles per lakh population in the State against 298 in the country as a whole and 553 in Maharashtra and 476 in Gujarat (*vide* Table 4).

18. In the Social Services sector also, the State is lagging behind, especially in regard to education. At the end of the Fourth Plan, it is anticipated that the enrolment of children of the age group 6-11 in primary schools in the State will be 75.7 percent against 84.7 percent in the country as a whole, while the enrolment of children of the age group 11-14 will be 29.1 percentage against 39.2 per cent in the country as a whole. In regard to percentage of enrolment of children of age group 6-11, the State occupies the 12th place while it occupies the 18th place in respect of percentage enrolment of children of age group 11-14. Rajasthan and Bihar are the only two States which will be having, at the end of the Fourth Plan, a lower percentage of enrolment of children of age group 11-14 in schools than Andhra Pradesh (*vide* Table 5).

19. However, in regard to hospital beds per lakh population, the State is slightly better placed than the All India average having 61.2 beds per lakh population against 56.8 beds in the country as a whole. Similarly, in doctor population ratio, the State ranks 8th among all the States in the country with a Doctor-population ratio of 1 : 4922. The States with a lower doctor population ratio than Andhra Pradesh are West Bengal, Tamil Nadu, Tripura, Maharashtra, Assam, Kerala and Gujarat.

20. The above comparison on the basis of relevant indicators selected from the various economic and social sectors broadly bring out that while the State has high yields per hectare in respect of some of the principal crops, the per capita income from agriculture in the State, however, is only near about the All India average mainly due to the cropping pattern which is weighed heavily in favour of low income yielding millet and pulses crops. At the same time, the level of industrialisation of the State is still far below the All India average. These two factors contributed to a less than average position in regard to the tertiary activities. As a result, the per capita income in Andhra Pradesh is below that in the country as a whole. According to the comparable estimates of State income compiled by the Central Statistical Organisation, in 1969-70, the per capita income in the State was Rs. 544 against Rs. 590 in the country as a whole and Rs. 1,002 in Punjab, Rs. 902 in Haryana, Rs. 740 in Gujarat, Rs. 736 in Maharashtra and Rs. 706 in West Bengal. The State occupied the 13th rank among the States of the Indian Union in regard to per capita income. Even in 1967-68 and 1968-69 the per capita income in the State was lower than the All-India average and the State occupied 11th and 14th places respectively among the States of the Indian Union (vide Table 6)

21. One of the more powerful instruments available for the reduction of regional imbalances is the process of industrialisation. The State Government, however has a relatively minor role to play in industrialisation having to provide the necessary infrastructure for location of industries while the bulk of investments have to come either from the central sector or from the private sector. But the State did not receive its due attention in the Plans implemented so far in regard to central investments on industrial projects. During the period 1951-69 covering the first three Plans and three Annual Plans, the Central investments on industrial projects in the State was only Rs. 106.6 crores against Rs. 2,879 crores in the country as a whole. The central investments on industrial projects during this period in the State formed only 3.7 percent of the total central investments on all industrial projects. The position was no better in the Fourth Plan period. Considering only those projects whose locations have been decided and excluding the provision made for various corporations, it was broadly estimated (Yojana, 26th January 1972) that the central investments in the Fourth plan in the State were of the order of Rs. 47.7 crores only (vide Table 7).

22. Thus, although wide spread diffusion of industries has been accepted as one of the important instruments for reducing regional imbalances, in effect, Andhra Pradesh continues to receive only a small proportion of the central sector investments on industrial projects.

The position is not very much different in regard to the investments in private sector also with the result the over-all investment in the State in Industries has been low. The paid up capital in Joint stock companies can be taken as a measure of investment in organised industries. In 1956-57 the paid-up capital of both public and private Joint stock companies in the State formed only 2.1 per cent of the total in the country. In 1971-72 the total paid up capital of Joint stock companies at work in the State was Rs. 86.80 crores only against Rs. 4,407 crores in the country as a whole, forming a mere 2.0 per cent. Thus, it will be seen that on the one hand private and central sectors investments in the State together have been of a low order and on the other the share of the State in the total has remained stagnant at this low level.

23. The outlay on the State Plan is another important factor in the development of the economy of any State. However, even this factor has been neither consciously nor effectively used in reducing regional imbalances. Thus, a study of the outlays on the Plans of different States will show that there is no correlation between the level of development of different States and the magnitude of the outlay on their Plans. It will be seen from Table 8 that States with the largest per capita Plan outlay are also the States with the largest per capita income; and similarly the States with the lowest per capita Plan outlays are States with the lowest per capita income; the significant exceptions being Nagaland, Jammu and Kashmir which rank 1st and 2nd in terms of per capita plan outlay although they have per capita income below the All-India average; and West Bengal which has the lowest per capita Plan outlay, although in terms of per capita income it ranks fifth among the States. The overall trend is brought out by the fact that the rank correlation co-efficient between per capita Plan outlay and per capita income is positive and is 0.3039, whereas if there had been any trend towards reduction of regional disparities this should have been negative.

24. This trend has been due to two factors: Firstly the method of distribution of central assistance to different States has not sufficiently taken into account the level of development of these States despite the fact that during the Fourth plan period a more rational and equitable formula which gave some weightage to backwardness was sought to be evolved. In the case of Andhra Pradesh, central assistance as a percentage of the total Plan outlay has come down in the Fourth plan as compared to that in the Third Plan and in the three Annual plans, 1966-69. In the Fourth Plan against an outlay of Rs. 420.5 crores in the State sector, the central assistance is of the order of Rs. 240 crores, forming 57.0 per cent of the total State plan. In the Third Plan, the percentage was 62.5 and in the three Annual plans 1966-69 this was 69.6 per cent. In fact, while in the Third Plan, the State received a central assistance of Rs. 220.5 crores out of the total central assistance of 2,515 crores in the Fourth Plan, this increased only to Rs. 240 crores against a total central assistance of Rs. 3,500 crores. While there has been a 39 per-cent increase in the total central assistance given by the Centre to State plans between the Third and Fourth Plans, the increase in central assistance to Andhra Pradesh was only 9 per-cent. This is one of the reasons for

the State plan outlay showing an increase of a mere 19 percent from Third to Fourth Plans as against an increase of 58 percent in all the State plans (vide Table 9).

25. The other factor that has resulted in Plan outlays in the backward States not being commensurate with their requirements or with the need for reducing regional imbalances is that the States own resources for the Plan have been relatively inadequate. In this matter again the more advanced States are more fortunately placed because given the same level of effort the actual resources they can raise will always be larger than in the more backward States because of their greater buoyancy due to the economy being more diversified. But in terms of the actual effort put in by the States in the shape of additional resource mobilisation it cannot be said that the more advanced States are the one which raised the largest quantum of additional resources. It will be seen from Table 10 that some of the States which are raising substantial additional resources are having some of the lowest per capita outlays in the Fourth Plan. Thus, for instance, the States raising the highest additional taxation in the Fourth Plan will be Uttar Pradesh (Rs. 175 crores) and Andhra Pradesh (Rs. 135 crores) and Bihar (Rs. 100 crores). Yet, according to per capita plan outlays, they rank 12th, 14th and 15th respectively. If we judge this on the basis of per capita additional taxation and per capita outlay, the general position is somewhat different (Table 11). Even so it will be seen that a State like Andhra Pradesh which is 2nd in taxation is 14th in Plan outlays. Similarly, Madhya Pradesh, which is 8th in taxation, is 16th in outlays while Maharashtra is 5th in outlays, although only 13th in taxation. It will therefore be seen that certain States are having a low per capita outlay in the Fourth Plan despite their making a serious effort to raise additional resources and we cannot in all cases dismiss the inequalities in the Plan outlays as being due to the unwillingness of the States to put in the requisite effort.

26. The crucial factor in relation to the development of the backward States and, therefore, for reducing regional imbalances is the total outlays under the Plan. To the extent any formula regarding the distribution of central assistance is able to ensure that the total outlays on the States Plans bear some relationship to their level of development, it would have served its purpose. But if this aspect is not taken into account, any such formula would be futile no matter how well-conceived it may be. Undoubtedly, there would have to be some mechanism whereby it is ensured that the States put in the requisite effort for raising their own resources, no matter how backward they may be. But once this is ensured, central assistance should serve the purpose of filling the gap in the total outlay required for bringing up the level of the backward States at least in some crucial respects. The new approach to the Minimum Needs Programme serves this purpose in the case of certain items of social consumption, but this alone would not be enough to reduce regional imbalances since the other, and in some respects the more important, economic and productive aspects would also have to be taken care of and this can be done only by ensuring that the total development of outlays in the more backward States are relatively larger.

27. Andhra Pradesh was particularly adversely affected during the Fourth Plan period and for no want of effort on its own part. The decline in developmental outlays during this period coincided with a run of continuous bad weather in the State resulting in a decline or stagnation in agricultural production, so that it has been caught in a vicious circle of economic stagnation and lack of investments which can be broken only if a concerted effort is made during the Fifth Plan period. Generally, in the backward States in addition to a financial constraint there is also a constraint of resources or of manpower and a critical lack of infrastructure. Andhra Pradesh, on the other hand, is a State which is well endowed with physical resources and has a surplus of trained manpower. The State, therefore, has the capacity to absorb investments and ensure adequate returns on them. Thus, for instance while the State had a Plan outlay of Rs. 105.23 crores in 1965-66 this has declined to Rs. 87.69 crores in 1973-74. Even if the same order of investment were to be made now in real terms the total Plan outlay would come to Rs. 167 crores. Thus the State has a proven capacity to immediately undertake developmental programmes or to absorb investments of this order. The outlays in the Fifth Plan should therefore be judged against a base of this order and not on the basis of the actual outlay on the Plan in 1973-74 or in the Fourth Plan both of which happen to be in the case of Andhra Pradesh the result of an unfortunate combination of circumstances.

TABLE- -1

Population of States 1951 —1971

STATES	Population in					
	1951 Census		1961 Census		1971 Census	
	Lakh persons	% to All India	Lakh persons	% to All India	Lakh persons	% to All India
1. Andhra Pradesh	311.15	8.6	359.83	8.2	435.03	7.9
2. Assam	88.31	2.4	118.73	2.7	149.58	2.7
3. Bihar	387.84	10.7	464.56	10.6	563.53	10.3
4. Gujarat	162.63	4.5	206.33	4.7	266.97	4.9
5. Harayana	} 172.44	} 4.8	75.91	1.7	100.37	1.8
6. Himachal Pradesh			28.12	0.6	34.60	0.6
7. Punjab			111.35	2.5	185.51	2.5
8. Jammu & Kashmir	32.54	0.9	35.61	0.8	46.17	0.9
9. Kerala	135.49	3.8	169.04	3.8	213.47	3.9
10. Madhya Pradesh	260.72	7.2	323.72	7.4	416.54	7.6
11. Maharashtra	320.03	8.9	395.54	9.0	504.12	9.2
12. Mysore	194.02	5.4	135.87	5.4	292.99	5.4
13. Nagaland	2.13	0.1	3.69	0.1	5.16	0.1
14. Orissa	146.46	4.1	175.49	4.0	219.45	4.0
15. Rajasthan	159.71	4.4	201.56	4.6	257.66	4.7
16. Tamilnadu	301.19	8.3	336.87	7.7	411.99	7.5
17. Uttar Pradesh	632.16	17.5	737.46	16.8	883.41	16.1
18. West Bengal	263.02	7.3	349.26	8.0	443.12	8.1
Union Territories including the present States of Meghalaya, Manipur and Tripura	41.46	1.1	63.41	1.4	99.84	1.8
All India	3,611.30	100.0	4,392.35	100.0	5,479.50	100.0

Source :—1. Paper No. 1 of 1962, Census of India 1961.

2. Paper No. 1 of 1972, Census of India, 1971.

3. Statistical Abstract of India, 1969.

91589

TABLE
Ranking of States according

Sl. No.	State	POPULATION DENSITY		POPULATION GROWTH		URBAN POPULATION	
		Persons per Sq. km.	Rank	increase during 1961-71	Rank	Percentage in total population 1971	Rank
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Andhra Pradesh	157	9	20.90	17	19.35	7
2.	Assam	149	11	34.37	2	8.39	16
3.	Bihar	324	3	21.26	15	10.04	14
4.	Gujarat	136	13	29.34	5	28.13	3
5.	Haryana	225	7	31.36	3	17.78	9
6.	Himachal Pradesh	62	16	21.76	14	7.06	18
7.	Jammu and Kashmir	N. A.	..	29.60	4	18.26	8
8.	Kerala	548	1	25.89	9	16.28	11
9.	Madhya Pradesh	93	14	28.66	6	16.26	12
10.	Maharashtra	163	8	27.25	7	31.20	1
11.	Mysore	152	10	24.07	12	24.31	5
12.	Nagaland	31	17	39.64	1	9.91	15
13.	Orissa	141	12	24.99	11	8.27	17
14.	Punjab	268	6	21.00	16	23.80	6
15.	Rajasthan	75	15	25.63	10	17.61	10
16.	Tamilnadu	316	4	22.01	13	30.28	2
17.	Uttar Pradesh	300	5	19.82	18	14.00	13
18.	West Bengal	50	2	27.24	8	24.59	4
ALL-INDIA		182		24.66		19.87	

Source:—Census of India, 1971, Paper No. 1 of 1971, provisional population tables

to selected Demographic indicators

GROWTH OF URBAN POPULATION		WORKERS ENGAGED IN NON-AGRICULTURAL OCCUPATION		LITERACY		GROWTH OF LITERACY	
<i>Percentage increase during 1961-71</i>	<i>Rank</i>	<i>Percentage in total workers 1971</i>	<i>Rank</i>	<i>Percentage of literates in total population 1971</i>	<i>Rank</i>	<i>Percentage increase of literacy rate during 1961-71</i>	<i>Rank</i>
(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
33.81	15	30.37	11	24.56	13	15.90	15
51.47	3	34.24	9	28.81	9	4.83	18
44.45	5	19.60	18	19.79	16	7.55	17
41.20	7	34.93	6	35.72	3	17.21	14
35.61	12	34.49	8	26.69	11	33.92	4
35.54	13	24.15	14	31.32	7	47.32	3
42.02	6	32.87	10	18.30	18	65.91	1
35.68	11	51.37	1	60.16	1	28.41	7
46.31	4	21.56	16	22.12	14	29.13	6
40.68	8	35.93	5	30.08	8	31.05	5
35.08	14	34.54	7	31.54	6	24.17	10
65.59	1	20.37	17	27.33	10	52.60	2
63.52	2	23.70	15	26.12	12	20.59	13
24.92	18	37.22	4	33.39	4	24.87	9
38.03	10	27.31	12	18.79	17	23.54	11
38.44	9	39.90	3	39.39	2	25.41	8
30.47	16	24.66	13	21.64	15	22.61	12
27.95	17	42.50	2	33.05	5	12.88	16
37.83	..	31.37	..	29.34	..	22.10	..

TABLE—
Ranking of States according to

Sl. No.	State	Area under food grains as % to total cropped area 1968-69	Rank	Area under selected commercial crops as % to gross cropped area, 1968-69	Rank
(1)	(2)	(3)	(4)	(5)	(6)
1.	Andhra Pradesh	70.5	10	20.1	6
2.	Assam	84.1	5	11.5	9
3.	Bihar	83.8	6	5.3	15
4.	Gujarat	47.6	14	36.7	1
5.	Haryana	72.7	9	10.0	10
6.	Jammu & Kashmir	94.3	1	5.5	13
7.	Kerala	37.4	15	1.6	16
8.	Madhya Pradesh	92.5	2	13.2	8
9.	Maharashtra	69.9	11	23.3	2
10.	Mysore	70.5	10	21.3	4
11.	Orissa	73.7	8	5.4	14
12.	Punjab	68.9	12	17.7	7
13.	Rajasthan	74.3	7	9.0	11
14.	Tamil Nadu	68.1	13	20.6	5
15.	Uttar Pradesh	87.9	4	23.1	3
16.	West Bengal	88.2	3	7.8	12
ALL-INDIA		76.9		17.0	

Source.—(1) Basic data on cropped area from statistical Abstract of the Indian Union 1969.

(2) Yields for Hectare from National Sample Survey Organisation.

(3) Income from Agriculture from comparable estimates compiled by Central Statistical Organization.

Selected Agricultural Indicators

<i>Yield per Hectare of principal crops, 1961-69 (in quintals)</i>								<i>Per capita income from Agriculture (including Animal Hus- bandry) 1969-70 (Rs).</i>	<i>Rank</i>
<i>Rice</i>	<i>Rank</i>	<i>Ground- nut</i>	<i>Rank</i>	<i>Cotton</i>	<i>Rank</i>	<i>Sugar- cane</i>	<i>Rank</i>		
(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
12.3	6	7.2	3	0.6	8	81.8	3	288	9
10.3	9	..	..	..	..	35.3	11	348	3
7.9	12	..	..	..	..	39.0	10	187	15
4.7	15	4.5	8	1.6	3	47.7	6	313	5
11.9	7	6.0	6	2.3	2	41.8	9	561	2
18.8	1	..	..	..	..	..	..	348	3
14.0	4	..	..	..	..	..	..	297	6
7.1	13	4.7	7	0.9	6	25.8	13	257	12
9.9	10	6.9	5	0.9	6	84.4	2	233	13
14.2	3	7.2	3	0.7	7	97.0	1	295	8
9.3	11	..	..	..	..	57.1	5	340	5
13.6	5	9.3	1	2.5	1	33.0	12	565	1
4.4	16	2.1	9	1.2	5	2.8	14	263	11
15.1	2	8.6	2	1.2	5	81.6	4	231	14
6.3	14	7.1	4	1.5	4	42.0	8	296	7
11.3	8	..	..	..	..	47.6	7	281	10
9.8		6.4		1.2		48.8		283	

TABLE—

Ranking of States according to Selected

Sl. No.	States.	Average daily employment of factory workers per '000' population 1970		Gross output in Industry (per capita) 1967		Value added (per capita) 1967		Consumption of electricity (per capita) 1970-71	
		No.	Rank	Rs.	Rank	Rs.	Rank	K.W.H.	Rank
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1.	Andhra Pradesh	6.0	8	111	9	17	10	50.5	11
2.	Assam	5.0	10	110	10	21	8	19.1	17
3.	Bihar	4.9	11	102	12	25	7	44.5	13
4.	Gujarat	16.6	3	367	3	82	3	124.0	4
5.	Haryana	8.9	6	215	5	40	5	88.3	7
6.	Himachal Pradesh	2.7	15	N.A.	..	N.A.	..	31.1	10
7.	Jammu & Kashmir	2.2	16	30	16	10	14	40.7	14
8.	Kerala	9.7	5	149	7	40	5	72.3	9
9.	Madhya Pradesh	5.6	9	105	11	20	9	46.3	12
10.	Maharashtra	20.2	1	466	1	120	1	153.3	1
11.	Mysore	8.9	6	128	8	40	5	101.2	6
12.	Nagaland	N.A.	..	N.A.	..	N.A.	..	9.8	18
13.	Orissa	3.4	13	61	14	12	13	73.9	8
14.	Punjab	8.0	7	214	6	36	6	140.0	2
15.	Rajasthan	3.2	14	56	15	15	11	33.1	15
16.	Tamil Nadu	10.7	4	244	4	54	4	129.8	3
17.	Uttar Pradesh	4.6	12	72	13	13	12	57.4	10
18.	West Bengal	18.8	2	389	2	91	2	106.0	5
	ALL INDIA	9.0	..	184	..	42	..	80.9	..

Note:—1. The above table does not include information about new States of Meghalaya, Manipur and Tripura.

N. A.—Not Available Neg.—Negligible

Source: 1. Economic Review issued by Maharashtra Government, and published in Economic Times, dated 25th February 1973.

2. For Railway Route Mileage, Report of the working Group of the Planning Commission on Industrial Backwardness.

Industrial and Commercial Activity Indicators

Industrial consumption of electricity (Per capita) 1970-71		No. of Banking Offices per lakh population 1970		Bank credit of Commercial Banks (per capita) 1970		Motor vehicles per lakh population 31-1-1970		Total Road length per 100 Sq. Kms. of area 31-3-1970		Total Railway route mileage per 100 sq. kms. of area 1967-68	
K.F.V.H Rank	Rank	No.	Rank	Rs.	Rank	No.	Rank	Kms.	Rank	Kms.	Rank
(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
22.3	13	2.3	10	49.7	8	240	12	37	10	17	8
8.5	16	1.1	15	15.6	14	278	8	38	9	11	12
32.9	12	0.9	16	14.2	15	124	16	49	6	30	4
90.2	3	5.7	1	113.1	4	476	3	28	12	29	5
47.4	9	3.1	8	46.7	9	192	14	22	15	32	3
4.4	17	3.5	7	10.3	17	110	18	39	8	N. A.	..
14.3	15	3.1	8	20.2	13	260	10	8	17	Neg.	14
60.3	8	4.1	5	64.3	7	367	5	153	1	23	7
36.1	11	2.7	9	22.9	12	193	13	23	14	12	11
105.9	1	5.4	2	262.4	1	553	2	25	13	17	8
77.0	4	5.1	3	80.6	5	374	4	39	8	14	10
1.2	18	1.9	11	9.1	18	1,810	1	30	11	1	13
65.7	7	1.2	14	11.5	16	147	15	43	7	11	12
93.5	2	4.5	4	71.2	6	243	11	152	2	42	1
21.1	14	2.3	10	23.7	11	272	9	21	16	16	9
74.9	5	4.0	6	113.5	3	298	7	53	5	28	6
38.1	10	1.4	13	30.0	10	119	17	55	4	29	5
74.1	6	1.8	12	176.6	2	358	6	67	3	39	2
54.9	..	2.9	..	83.9	..	298	..	36	..	18	..

TABLE--5

Ranking of States According to Selected Social Services Indicators.

Sl. No.	States	Enrolment of children of the age group 6-11 in primary Classes		Enrolment of children of the age group 11-14 in Upper Primary Classes		Hospital beds per lakh population as on 1-4-1968		Doctor population ratio as on 31-12-68	
		Percentage to total 1973-74	Rank	Percentage to total 1973-74	Rank	No.	Rank	Ratio	Rank.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1.	Andhra Pradesh	75.7	12	29.1	18	61.2	9	1: 4,922	8
2.	Assam ..	70.3	16	34.7	14	38.1	14	1: 3,139	5
3.	Bihar ..	52.2	19	24.8	20	30.5	17	1: 6,083	11
4.	Gujarat ..	88.0	8	43.0	11	42.8	12	1: 4,900	7
5.	Haryana	71.0	15	53.0	4	43.1	11	1: 8,600	14
6.	Himachalpradesh	94.1	6	66.1	2	N.A.	—	1:11,765	18
7.	Jammu & Kashmir	75.4	13	43.3	10	101.6	22	1: 9,804	16
8.	Kerala	123.0	2	74.3	1	98.8	3	1: 4,742	6
9.	Madhyapradesh	65.2	17	29.4	16	38.0	15	1:21,663	20
10.	Maharashtra	93.0	7	51.0	7	78.7	6	1: 2,592	4
11.	Manipur	111.6	3	44.2	9	N.A.	—	1: 9,838	17
12.	Mysore	86.0	9	34.0	15	81.4	5	1: 5,300	9
13.	Nagaland	128.0	1	57.5	3	175.0	1	1: 8,850	15
14.	Orissa	73.0	14	29.3	17	36.2	16	1: 7,008	12
15.	Punjab	58.1	18	52.0	6	65.5	8	1: 5,863	10
16.	Rajasthan	58.1	18	27.4	19	51.5	10	1:12,662	19
17.	Tamilnadu	109.0	4	52.2	5	69.2	7	1: 1,988	2
18.	Tripura	80.9	11	46.6	8	N.A.	—	1: 2,208	3
19.	Uttar Pradesh	102.0	5	37.0	13	41.1	13	1: 7,672	13
20.	West Bengal	84.7	10	40.7	12	87.2	4	1: 1,747	1
	All India	84.7	—	39.2	—	56.8	—	—	—

Source: (1) For enrolment, anticipated enrolment worked out by Ministry of Education.

(2) For Hospital Beds, Report of the Fifth Finance Commission., 1969.

(3) For Doctor-population ratio, Note prepared by the Sub-group on norms for Health, Planning Commission.

TABLE—6

*Estimates of State per Capita net Domestic product at Current Prices,
1967-68 To 1969-70*

States	1967-68		1968-69		1969-70	
	Per capita income	Rank	Per capita income	Rank	Per capita income	Rank
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Andhra Pradesh	522	11	522	14	544	13
2. Assam	509	12	562	10	586	10
3. Bihar	386	19	375	20	402	19
4. Gujarat	718	4	627	7	740	3
5. Harayana	776	2	695	2	902	2
6. Himachal Pradesh	576	6	678	4	723	5
7. Jammu & Kashmir	416	18	427	17	503	15
8. Kerala	567	7	592	9	643	8
9. Madhya Pradesh	479	16	447	16	495	17
10. Maharashtra	663	5	684	3	736	4
11. Manipur	420	17	628	6	542	14
12. Mysore	538	9	553	11	571	11
13. Nagaland	282	20	392	19	328	20
14. Orissa	500	13	543	12	545	12
15. Punjab	867	1	927	1	1002	1
16. Rajasthan	500	14	402	18	478	18
17. Tamilnadu	529	10	537	13	591	9
18. Tripura	560	8	622	8	682	7
19. Uttar Pradesh	485	15	452	15	497	16
20. West Bengal	728	3	657	5	706	6
All India (including Union Territories) ..	555	..	542	..	590	..

Note.— The per capita income at the All-India level presented in this table differ from the ones presented in ‘‘Estimates of National Product’’ because the income of defence personnel and Government of India Officers abroad and business outside India of L.I.C. and other Indian Insurers are excluded.
Source: Central Statistical Organization.

TABLE—7.

Statewise investment on Central Industrial Projects.

(Rs. crores).

State.	Invest- ment in Ist Plan.	Invest- ment in 2nd Plan.	Invest- ment in- 3rd Plan.	Total in- vestment during the 3 Plan periods.	Invest ment during 1966-69	Total in- vestment during 1951-69.	Outlay during the Fourth Plan.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Andhra Pradesh ..	8.3	1.7	52.5	62.5	44.1	106.6	47.7
Assam. ..	..	..	32.8	32.8	18.2	51.0	54.9
Bihar. ..	8.2	21.2	184.7	214.1	300.7	514.8	797.9
Gujarat. ..	..	..	45.0	45.0	14.0	59.0	26.0
Haryana ..	..	..	7.0	7.0	1.5	8.5	5.0
Jammu & Kashmir ..	..	..	..	..	..	..	3.0
Kerala. ..	1.0	0.9	49.2	51.1	40.7	91.8	54.1
Maharashtra. ..	2.1	1.7	43.6	47.3	7.7	55.0	100.6
Madhya Pradesh ..	..	221.8	192.6	414.4	84.4	498.8	150.5
Mysore. ..	7.1	3.3	17.2	27.6	37.2	64.8	17.7
Orissa. ..	6.5	199.3	154.7	360.5	62.9	423.4	15.0
Punjab. ..	..	28.0	4.2	32.2	..	32.2	..
Rajasthan. ..	..	..	12.2	12.2	28.6	40.8	93.1
Tamil Nadu ..	5.8	33.4	141.4	180.6	104.8	285.4	56.2
Uttar Pradesh ..	..	..	72.1	72.1	106.2	178.3	47.4
West Bengal ..	5.9	182.9	135.0	323.8	142.2	466.0	110.2
Nagaland. ..	..	..	..	..	..	..	*
Delhi. ..	0.5	..	..	0.5	2.1	2.6	0.1
Total ..	45.3	694.2	1144.2	1883.7	995.3	2879.0	1581.4

* Provision has been made for a Paper Project.

Note :—(i) The investments during 1951-69 are approximate estimates of fixed investment in Central Industrial projects in different States.

(ii) For the Fourth Plan, details of only those projects have been shown whose locations have been decided. In addition, the outlay does not include the lumpsum provision made for various Corporations as it is not feasible to break up the outlays project-wise and distribute them State-wise.

Source Yojana : Vol. XVI No. 1 January 26, 1972, Supplement on Indian Industry.

TABLE—8.
Per Capita Outlay in Fourth Plan.

State.	Outlay in Fourth Plan. (Rs. crores) **	Per capita outlay. * (Rs.)	Rank.	Per capita income (1969—70) at current prices (Rs.)	Rank.	Per capita outlay as % of per capita income.	Rank.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Andhra Pradesh.	420.50	97	14	544	11	17.8	16
2. Assam ..	261.75	175	6	586	8	29.9	3
3. Bihar ..	531.28	94	15	402	16	23.4	7
4. Gujarat ..	455.00	170	7	740	3	23.0	8
5. Haryana ..	225.00	224	3	902	2	24.8	4
6. Jammu & Kashmir	158.40	343	2	503	12	68.2	2
7. Kerala ..	258.40	121	9	643	6	18.8	13
8. Madhya Pradesh .	383.00	92	16	495	14	18.6	14
9. Maharashtra ..	896.12	178	5	736	4	24.2	6
10. Mysore ..	350.00	119	10	571	9	20.8	12
11. Nagaland ..	40.00	775	1	328	17	236.3	1
12. Orissa ..	222.40	101	13	545	10	18.5	15
13. Punjab ..	293.56	217	4	1002	1	21.7	10
14. Rajasthan ..	302.00	117	11	478	15	24.5	5
15. Tamilnadu ..	519.36	126	8	591	7	21.3	11
16. Uttar Pradesh ..	965.00	109	12	497	13	21.9	9
17. West Bengal ..	322.50	73	17	706	5	10.3	17
All States ..	6606.47	121	..	589	..	20.5	..

* Calculated using population estimates, census, 1971.

** As adopted in the Fourth Five Year Plan, 1969-74.

Note :—1. Rank correlation coefficient between Columns 4 & 6 is + 0.3039.

TABLE

Statewise Outlays in the Plans

States.	SECOND PLAN.			THIRD PLAN.		
	Actual Expenditure.	C. A. Actually paid.	Percentage to total.	Actual Expenditure.	C. A. Actually paid.	Percentage to total.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Andhra Pradesh ..	180.6	96.0	53.2	352.0	220.5	62.5
2. Assam ..	63.1	31.0	49.1	132.2	99.9	75.5
3. Bihar ..	176.9	84.0	47.5	331.7	15.9	65.0
4. Bombay ..	360.8	124.0	34.4	..	..	..
5. Maharashtra ..	..	..	..	433.6	166.8	38.4
6. Gujarat ..	..	..	..	337.6	111.6	46.9
7. Jammu & Kashmir ..	26.8	20.0	74.6	61.2	61.5	100.4
8. Kerala ..	79.0	38.0	48.1	181.6	121.7	67.0
9. Madhya Pradesh ..	145.5	96.0	66.0	288.3	219.5	76.1
10. Tamil Nadu ..	186.9	95.0	50.8	342.3	186.8	54.5
11. Mysore ..	138.7	67.0	48.3	250.7	156.5	62.4
12. Orissa ..	89.4	66.0	73.8	224.0	136.7	66.0
13. Punjab ..	151.4	88.0	58.1	254.2	134.4	52.8
14. Haryana ..	..	..	..	..	..	..
15. Rajasthan ..	99.9	59.0	59.1	210.7	161.4	76.6
16. Uttar Pradesh ..	228.3	121.0	53.0	560.2	356.2	63.5
17. West Bengal ..	155.8	73.0	46.9	300.4	155.1	51.6
18. Nagaland ..	..	..	..	10.8	10.8	100.0
Total	2083.1	1058.0	50.8	4171.9	2515.3	60.2

Source —1. National Fourth Plan 1969-74 Draft.

2. National Fourth Plan 1969-74.

—9.

and Central Assistance.

(Rs. in crores).

ANNUAL PLANS (1966-69).			FOURTH PLAN.		
Outlay approved.	C. A. approved.	% to total.	Outlay approved.	C. A. approved.	% to total.
(8)	(9)	(10)	(11)	(12)	(13)
232.02	161.60	69.6	420.50	240.00	57.0
87.11	85.80	98.4	261.75	220.00	84.0
223.23	155.20	69.5	531.28	388.00	63.6
—	—	—	—	—	—
408.67	111.00	27.1	398.12	245.50	27.3
207.14	76.40	36.8	455.00	158.00	34.7
62.09	60.00	96.6	158.40	145.00	91.5
139.75	89.70	64.1	258.40	175.00	67.7
172.64	141.90	82.1	383.00	262.00	68.4
249.95	121.00	48.4	519.86	202.00	38.8
179.77	109.20	60.7	350.00	173.00	49.4
131.58	80.70	61.3	222.60	160.00	71.8
112.77	51.80	45.9	298.56	101.00	34.4
72.82	46.40	63.7	225.00	78.50	34.8
135.65	119.40	88.0	302.00	220.00	72.8
456.03	259.40	56.8	965.00	526.00	54.5
163.83	112.70	68.7	322.50	221.00	68.5
16.7	16.70	100.0	40.00	35.00	87.5
3 51.75	1798.90	58.9	6606.47	3500.00	52.9

C. A.—Central Assistance

T A B L E — 10

Fourth Five Year Plan 1969-74—States' Outlay and Resources

(Rs. in crores).

State	State's Resources				Outlay agreed	Percentage of central assistance of each State to central assistance.	Rank	Percentage of State's outlay to total outlay
	Central assistance	Base level	Additional Mobilisation	Total				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Andhra Pradesh	240.0	45.5	135.0	180.5	420.5	6.86	5	6.36
2. Assam	220.0	16.8	25.0	41.8	261.8	6.29	8	3.96
3. Bihar	338.0	93.3	100.0	193.3	531.3	9.66	2	8.04
4. Gujarat	158.0	254.7	42.3	297.0	455.0	4.51	13	6.89
5. Haryana	78.5	116.2	30.3	146.5	225.0	2.24	16	3.41
6. Jammu and Kashmir	145.0	4.4	9.0	13.4	158.4	4.14	14	2.40
7. Kerala	175.0	33.4	50.0	83.4	258.4	5.00	10	3.91
8. Madhya Pradesh	262.0	38.0	83.0	121.0	383.0	7.49	3	5.80
9. Maharashtra	245.5	572.6	80.0	652.6	898.1	7.01	4	13.59
10. Mysore	173.0	104.0	73.0	177.0	350.0	4.94	11	5.30

11. Nagaland	..	..	35.0	4.8	0.2	5.0	40.0	1.00	17	0.61
12. Orissa	..	..	160.0	28.0	34.6	62.6	222.6	4.57	12	3.37
13. Punjab	..	..	101.0	136.2	56.4	192.6	293.6	2.89	15	4.44
14. Rajasthan	..	..	220.0	32.0	50.0	82.0	302.0	6.29	7	4.57
15. Tamilnadu	..	..	202.0	232.4	85.0	317.4	519.4	5.77	9	7.86
16. Uttar Pradesh	..	..	526.0	264.0	175.0	439.0	965.0	15.03	1	14.61
17. West Bengal	..	..	221.0	31.5	70.0	101.5	322.5	6.31	6	4.88
Total			3,500.0	2,007.7	1,098.8	3,106.5	6,606.5	100.00	..	100.00

Source.—Fourth Five Year Plan, 1969-74.

T A B L E — 11

Per Capita Outlay and Per Capita Additional Taxes in Fourth Plan.

State	Per Capita outlay		Per capita additional taxes.	
	Rs.	Rank	Rs.	Rank
(1)	(2)	(3)	(4)	(5)
1. Andhra Pradesh	97	14	80.37	2
2. Assam	175	6	15.34	15
3. Bihar	94	15	16.77	11
4. Gujarat	170	7	15.36	14
5. Haryana	224	3	28.91	3
6. Jammu and Kashmir ..	343	2	21.84	6
7. Kerala	121	9	22.71	5
8. Madhya Pradesh	92	16	19.72	8
9. Maharashtra	178	5	15.46	13
10. Mysore	119	10	24.13	4
11. Nagaland	775	1	0.41	17
12. Orrissa	101	13	15.52	12
13. Punjab	217	4	36.69	1
14. Rajasthan	117	11	18.34	10
15. Tamil Nadu	126	8	21.02	7
16. Uttar Pradesh	109	12	18.69	9
17. West Bengal	73	17	15.04	16

Note.—The Per Capita figures are Calculated using population estimates for 1st October, 1971.

5. ECONOMY OF ANDHRA PRADESH PERSPECTIVE OF INCOME AND INVESTMENTS

A perspective of income levels and investments in Andhra Pradesh was drawn up in the context of the preparation of the Fourth Plan. It was assumed that a total investment of the order of Rs. 1,216 crores (at 1968-69 prices) in the State could be forthcoming during the Fourth Plan, out of which Rs. 450 crores would be from the State Plan. Including the current outlay, the State Plan Outlay was taken at Rs. 530 crores. On this basis, the per capita income at the end of the Fourth Plan was estimated to go upto Rs. 530 at 1968-69 prices or Rs. 638 at 1971-72 prices.

However, it is now estimated that the actual expenditure in the Fourth Plan would be of the order of Rs. 427 crores only with an investment of the order of Rs. 361 crores. The investments in the private and central sectors also were of a much lower order than expected earlier. In the context of these reduced outlays and the continuous adverse seasonal conditions in the Fourth Plan period in the State and also the substantial increase in prices, particularly, during the later half of the Fourth Plan, it is now estimated that the per capita income at the end of the Fourth Plan will be only about Rs. 603 at 1971-72 prices against Rs. 638 assumed earlier. In the light of these developments, it has now become necessary to revise the perspective of income levels and investments.

An exercise has, therefore, been taken up to work out a perspective of income levels and investments covering the Fifth and Sixth Plan periods. In this exercise, the income and investment projections were based on 1971-72 price level as was done in the case of National Fifth Plan. Further, an attempt has also been made to disaggregate the projections of both the incomes and investments into four broad sectors, viz., Agriculture and allied activities, Industry and Mining, Electricity and Gas and residual activities. Since upto-date and reliable information on incremental capital out-put ratios in the above four sectors in the State was not available, the corresponding ratios in the National Fifth Plan were adopted in this exercise.

The projections of income generation in the above four sectors and the State economy as a whole and the corresponding investment required to achieve these income levels were made on the following three assumptions :

Alternative I.

The growth rates in the four sectors and in the State economy during the Fifth Plan period were assumed to be identical with those in the National Fifth Plan. No projections were made for the Sixth Plan.

Alternative II.

The growth rate for agriculture in the Fifth Plan was assumed to be slightly less than that in All-India, while the growth rates for Industry and Mining and Electricity and Gas were assumed at a higher rate. In the Sixth Plan, the growth rates for Industry and Mining and Electricity and Gas were kept at the same level, as in the Fifth Plan while the growth rates in Agriculture and residual sectors were kept at a higher level.

Alternative III.

The Fifth Plan growth rates for Agriculture and Residual sectors were kept at the same level as that in All-India. But the growth rates for Industry and Mining and Electricity and Gas were assumed at a higher level than those of All-India. In the Sixth Plan, the growth rates for Agriculture and residual activities were further increased than in the Fifth Plan, but those of Industry and Mining and Electricity and Gas were kept at the same level as in the Fifth Plan.

The projections of State incomes and investments made on the above three assumptions are shown in Table 2. The composition of the investment requirements according to public and private sectors, estimated taking into account the All-India ratios is shown in Table 3. The salient features of these three sets of projections are discussed below :

Alternative I.

In order to achieve a 5.5 percent rate of growth in the State economy during the Fifth Plan period with identical growth rates for the four major sectors as was envisaged in the National Fifth Plan, the State would require an investment of the order of Rs. 2,936 crores. Out of this, Rs. 841 crores would have to be in the private sector and the balance Rs. 2,095 crores in the public sector. In the past Plans, the State sector broadly formed about one-third of the total Plan and therefore, in this alternative, the State sector investment would have to be of the order of Rs. 980 crores and the balance Rs. 1,115 crores should be forthcoming in the central sector. Including the current outlays, which form about 20 percent of the total Plan in the case of State sector Plans, the total State Plan would have to be of the order of Rs. 1,250 crores.

Alternative II.

Since the State has been lagging behind in electricity generation and Industry and Mining, it is not realistic to assume the same rate of growth in the State's Fifth Plan as that in the country as a whole. Hence, a rate of growth of 12 per cent in Industry and Mining against 8.14 per cent in the National Fifth Plan and 15 per cent in Electricity against 10.13 in All-India was assumed. The growth rate for agriculture was kept at 3.5 percent against about 4 per cent in the National Fifth Plan. The lower growth rate for agriculture in the State is justified on two considerations. Firstly, the State has large backward

tracts with predominant dry farming and unless there is a breakthrough in dry farming techniques, it would be extremely difficult to achieve a substantial growth rate in agriculture in these areas. Secondly, even in the irrigated tracts such as those in the delta districts of Coastal Andhra, agriculture has already developed fairly well with high levels of yield per acre and any further developments will be much more arduous than getting high percentage growth rate in the case of newly developed areas. In this alternative, the over-all growth rate in the State economy is kept at 5.5 percent as in the National Fifth Plan. A total investment of the order of Rs. 3,155 crores in the State would be required in the Fifth Plan period to achieve the above pattern of economic growth. Out of this, Rs. 904 crores would have to be invested by the private sector and the remaining Rs. 2,251 crores would have to be forthcoming from the public sector. The State sector component of this investment would have to be of the order of Rs. 1,052 crores and the remaining Rs. 1,199 crores would have to be in the Central sector. Including the current outlays, the State Plan should, therefore, be of the order of Rs. 1,315 crores.

Alternative III.

According to the comparable estimates compiled by the Central Statistical Organisation, the per capita in the State during 1969-70 was Rs. 544 against Rs. 590 in All-India. The reduction of this income disparity can be achieved only if the State plans for a slightly higher growth rate than that in the National Plan. In this alternative, therefore, it was assumed that the State will be enabled to take up a Plan to achieve an over-all rate of growth of about 6 percent per annum in the State economy during the Fifth Plan period and a rate of growth of 4 percent in agriculture, 12 percent in Industry and Mining 1.5 percent in Electricity and Gas and 6 percent in the residual sectors. The over-all investment required for this purpose will be of the order of Rs. 3,483 crores in the Fifth Plan comprising Rs. 998 crores in the private sector and Rs. 2,485 crores in the public sector. Within the public sector, the State sector investment would have to be of the order of Rs. 1,160 crores and that in the Central sector Rs. 1,325 crores. Including the current outlays, the State Plan should then be of the order of Rs. 1,450 crores.

To sum up, the three sets of projections, made on the above basis, indicate that the State plan should be of the order of Rs. 1,250 to 1,450 crores. With the lower limit of this range, the State will be able to repeat the same rate of growth as that envisaged in the National Fifth plan; but this is not a desirable alternative as the State's per capita income is lower than that in All-India and, therefore, the same percentage of growth will not only not reduce this income disparity between the State and All-India but also will widen it further as the base on which this percentage growth will be worked out in the State will be less than that in All-India. Moreover, in this alternative, in the Industry and Mining and Electricity and Gas sectors in which the State has been lagging far behind the All-India average, the State will not be able to make up the leeway even marginally. It is, therefore,

necessary to plan for a higher order of rate of growth in both these sectors than in the National Fifth Plan. Even the over-all rate of growth for the State would have to be of a higher order than that in All-India, if income disparity between the State and the All-India average has to be eliminated in the foreseeable future. In view of these considerations, it is most desirable that Alternative III, which envisages an investment of the order of Rs. 3,483 crores in both the public and private sectors put together and a State Plan outlay of Rs. 1,450 crores, is adopted for the Fifth Plan of the State. However due to the constraint of resources the total outlay envisaged in the Draft outline approximates to the first and lowest of the alternatives mentioned above, which would mean that the leeway between the per capita income of the State and that of the All-India average would not be made up even in this Plan period.

TABLE-1.

Estimates of State income (at constant 1960-61 prices)

				(Rs. in crores)					
Year				Agriculture and allied	Industry and Mining	Construction	Electricity Gas and water supply	Others	Total
(1)				(2)	(3)	(4)	(5)	(6)	(7)
1960-61	..	..	..	572.00	82.91	43.84	5.11	279.33	983.19
1961-62	..	..	..	630.05	91.00	47.99	4.42	284.83	1,058.29
1962-63	..	..	..	616.79	93.51	46.43	4.49	294.25	1,055.47
1963-64	..	..	..	650.87	107.65	44.95	4.70	304.15	1,112.32
1964-65	..	..	..	700.28	116.59	54.88	5.53	313.56	1,190.84
1965-66	..	..	..	578.17	121.47	59.31	4.81	318.87	1,082.71
1966-67	..	..	..	620.36	121.56	51.71	4.53	326.77	1,124.93
1967-68	..	..	..	643.84	120.19	54.67	7.23	337.48	1,163.41
1968-69	..	..	..	579.89	128.59	58.71	6.03	346.79	1,120.01
1969-70	..	..	..	645.65	140.34	68.17	6.31	361.07	1,221.54
1970-71	..	..	..	691.36	142.38	72.02	8.55	374.69	1,289.00
Compound Growth Rate*	..	..	..	0.66	5.34	4.73	6.77	2.91	1.97

*Estimated by fitting a linear equation to the State income estimates for the years 1960-61 to 1970-71.

TABLE-2

Projections of State Income and Investment requirements in Fifth and Sixth Plans (at 1971-72 prices).

(Rs. crores)

Sector	Income 1973-74 (Pro- jected)	FIFTH PLAN					SIXTH PLAN				
		Annual growth rate	Income 1978-79 (Pro- jected)	Addi- tional income in Fifth Plan	Capital output ratio	Invest- ment require- ed	Annual growth rate	Income 1983-84 (Pro- jected)	Addi- tional income in Sixth Plan	Capital output ratio	Invest- ment require- ed
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)

Alternative—I.

1. Agriculture	1,438	3.97	1,747	309	2.00	618	}
2. Industry and Mining	340	8.14	503	163	4.11	670					
3. Electricity and Gas	21	10.31	34	13	18.61	242					
4. Others	989	6.00	1,360	371	3.79	1,406					
5. Total State Income	2,788	5.50	3,044	856	3.43	2,936					

TABLE 2—*contd.*

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
<i>Alternative—II</i>											
1. Agriculture	1,438	3.50	1,708	270	2.00	540	4.00	2,078	370	2.00	740
2. Industry and Mining	340	12.00	599	259	4.11	1,064	12.00	1,056	457	4.11	1,878
3. Electricity and Gas	21	15.00	42	21	18.61	391	15.00	84	42	18.61	782
4. Others	989	5.50	1,295	306	3.79	1,160	6.50	1,774	479	3.79	1,815
5. <i>Total State Income</i>	2,788	5.50	3,644	856	3.69	3,155	6.50	4,992	1,348	3.87	5,215
<i>Alternative—III</i>											
1. Agriculture	1,438	4.00	1,749	311	2.00	622	4.75	2,205	456	2.00	912
2. Industry and Mining	340	12.00	599	259	4.11	1,064	12.00	1,056	457	4.11	1,878
3. Electricity and Gas	21	15.00	42	21	18.61	391	15.00	84	42	18.61	782
4. Others	989	6.00	1,360	371	3.79	1,406	7.00	1,907	547	3.79	2,078
5. <i>Total State Income</i>	2,788	6.10	3,750	962	3.62	3,483	7.00	5,252	1,502	3.76	5,645

TABLE-3

Estimate of investment requirement in Fifth Plan according to Public and Private Sectors. (at 1971-72 prices)

(Rs. in crores)			
Alternative Sector	Public	Private	Total
<i>Alternative I.</i>			
1. Agriculture	408	210	618
2. Industry and Mining	371	299	670
3. Electricity and Gas	238	4	242
4. Others	1,078	328	1,406
5. Total	2,095	841	2,936
<i>Alternative II.</i>			
1. Agriculture	356	184	540
2. Industry and Mining	590	474	1,064
3. Electricity and Gas	384	7	391
4. Others	921	239	1,160
5. Total	2,251	904	3,155
<i>Alternative III.</i>			
1. Agriculture	410	212	622
2. Industry and Mining	590	474	1,064
3. Electricity and Gas	384	7	391
4. Others	1,101	305	1,406
Total	2,485	998	3,483

Note:— Estimated on the basis of the composition at the National level as given in the Fifth Plan Approach Document.

6. OUTLAYS FOR FIFTH PLAN

Economic planning at State level involves a detailed identification of the natural resources potential and of the special problems of economic development of the State based on which a suitable strategy could be evolved. The total efforts towards the development of an area is conditioned by a number of circumstances one of the most important being the total investment in the public sector as well as the private sector. Investment in the public sector is covered in the Central and State sector plans. The State plans thus constitute one of the important factors that contribute to the development of the economy of the State.

The State plans have special significance in-as-much as they cover a wide area of economic activities significant for the people at large. The more important of the activities relevant for State Planning are agriculture, animal husbandry, forestry, fisheries, irrigation, power, roads, education, medical and public health and social welfare. A review of the performance of the State Plans is, therefore, essential not only for assessing the present level of development but also for ensuring a suitable strategy for future plans.

The Plan effort of Andhra Pradesh has been based on a strategy which has laid emphasis on the development of agriculture and improving the socio-economic environment for the overall development of the economy by investing heavily in the development of irrigation and power. Such a strategy was the logical outcome of the predominantly agricultural base of the economy of the State, the resource potential in terms of surface irrigation and the requirements of power as a basic infrastructure for agricultural and industrial development as well as a social amenity.

A study of the expenditure under the various plan periods shows that the expenditure has been increasing from year to year upto the Third Plan period. It was stepped up steadily from a total of Rs. 97 crores in the First Plan period to an estimated amount of Rs. 427 crores in the Fourth Plan period. Compared to the expenditure in the first Plan of Rs. 97 crores, the expenditure in the Second Plan registered an increase of about 95 per cent reaching a level of Rs. 188.58 crores. The Third Plan also involved a stepping up over the Second Plan to the tune of 87 per cent involving an expenditure of 352.41 crores. After completion of the Third Five Year Plan, there were the three Annual Plans before launching of the Fourth Plan. The total expenditure in the three Annual Plans was Rs. 234.06 crores. The average annual expenditure during the three annual Plans was marginally more than the average annual expenditure during the Third Plan. However, the estimated average Annual expenditure in the Fourth Plan is expected to be about 9 per cent more than that of the average of the Three Annual Plans preceding the Fourth Five-Year Plan. Thus, the annual expenditure on palm schemes increased from a mere 15.27 crores in 1951-52 to more than 105 crores in 1965-66.

However, subsequently, the outlay decreased. The actual expenditure incurred was Rs. 93.39 crores in 1966-67, Rs. 66.30 crores in 1967-68, and Rs. 74.36 crores in 1968-69. Since 1965, there have been droughts and floods in large parts of the State almost every year, and consequently there was decline in agricultural production itself which affected the resources of the State. Secondly, the nature of investments in the past as a result of the high priority given to Irrigation and Power and the patterns of Central Assistance resulted in the State accumulating a large debt burden. As a consequence of these two trends, a strain was imposed on the financial resources of the State. Simultaneously, the Central Assistance available to the State also declined from 63 per cent during the Third Plan period to 51 per cent in the Fourth Plan. All these factors resulted in a decline in the outlays on the Plan from Rs. 105 crores in 1965-66 to a low level of Rs. 67 crores in 1967-68. In the last year of Fourth Plan the outlay is only Rs. 87.59 crores. Thus the outlay on the Plan today is lower than the outlay in 1965-66 both in money terms and much more so in real terms. It is against this background wherein institutional and organisational capabilities for a far higher outlay were built up but substantial unfulfilled demands in various sectors persist that the exercise on Fifth Plan outlays has had to be taken up.

The total outlay on the Draft Fifth Plan according to the proposals formulated by the various Working Groups comes to Rs. 1277 crores of which about Rs. 177 crores is under the Minimum Needs Programme and the balance Rs. 1100 crores under the normal Plan Schemes. As against this, the Planning Commission have recently intimated the Draft Fifth Plan proposals of the State should be worked out on the basis of a total outlay of Rs. 1075 crores including Rs. 177 crores for the Minimum Needs Programme. This would mean that according to the Planning Commission the outlay on the State Plan itself, excluding the Minimum Needs Programme, would be about Rs. 900 crores. From a scrutiny of the proposals of the Working Groups it will be seen that very few new schemes have been suggested and that the proposals really taken into account the meeting of the spill-over commitments, the maintenance of at least the existing tempo of developmental activity in the State and the reorientation necessary in the light of the Approach to the Fifth Plan. If these proposals are to be cut down by about Rs. 200 crores to bring the outlay within Rs. 900 crores indicated by the Planning Commission, it would become difficult for any of these objectives to be achieved and there would be continued stagnation in the State.

As mentioned earlier, the two important aspects on which the Approach to the Plan is to be reoriented are in regard to providing more employment opportunities and certain basic social services which would enable the consumption level of the weaker sections to be improved. While the latter is taken care of to some extent under the Minimum Needs Programme, the former has to be reflected entirely in the allocations of the plan itself. Both these aspects could not be paid as much attention as they might have deserved in the previous plans because of the heavy commitments under irrigation and power. The large spill over commitments in these two sectors make any significant reduction in the percentage allocation for them very difficult even now although this has been attempted to some extent. If, therefore, these

spill-over commitments are to be met which are essential not only for deriving full benefits from previous investments, but also for providing infrastructure for agricultural and industrial production and if, at the same time, at least some measure of effort is to be put in the direction of reorienting the approach as desired, it would be difficult to reduce the outlay below the levels indicated by the Working Groups.

The outlay on the plan of Andhra Pradesh has to be reviewed in this perspective. In this context, it might also be mentioned that although the outlay on the Fourth Plan for the State was about Rs. 427 crores special development schemes were taken up in Telangana amounting to over Rs. 43 crores. While these funds are not part of the Fourth Plan, the programmes taken up under them were all development programmes and were dovetailed in the Fourth Plan. The developmental outlay in the State during the Fourth Plan period was therefore in fact of the order of Rs. 470 crores.

The Fourth Plan period was one of economic stagnation for Andhra Pradesh. The investments during the Fourth Plan were not adequate for the minimum requirements of the State nor was the step up in the outlay on the Fourth Plan compared to the Third Plan commensurate with the step up in the country as a whole. Thus, the Fourth Plan outlay of Andhra Pradesh is only Rs. 427 crores compared to Rs. 352 crores in the Third Plan, the step up being as low as 19 per cent whereas the step up in the All-India Plan from the Third to the Fourth Plan was 87 per cent and the step up for all States together was 62 per cent. In the case of certain States the step up in the Fourth Plan is much higher being 117 per cent for Maharashtra and 92 per cent in the case of both Gujarat and Harayana States.

Therefore to determine the outlay in the Fifth Plan by taking a uniform multiple of the Fourth Plan outlay would be to ignore these imbalances in the past and would therefore be unrealistic. A statement showing the per capita plan outlay of the different States in the Draft Fifth Plan assuming that the size of the Fifth Plan will be double that of the outlay in the Fourth Plan is given in table(I). It will be seen from this that barring the border States like Assam and Jammu and Kashmir, which were given special consideration in the matter of fixing Central assistance during the Fourth Plan and which gets reflected in this doubling, the other States with the larger per capita plan outlays will be the States with the larger per capita income. Thus the States with the highest per capita plan outlays other than the special cases mentioned will be Haryana, Punjab, Maharashtra, Gujarat and Tamilnadu while the States with the lowest per capita outlay will be West Bengal, Madhya Pradesh, Bihar, Andhra Pradesh and Orissa.

It would not be correct to imagine that merely because certain items of social consumption have been taken under the Minimum Needs Programme which would be allocated in larger measure to more backward States, this imbalance would be corrected. Firstly, the total outlay on the Minimum Needs Programme is now likely to be less than Rs. 3,000 crores which might represent only about 20-25 per cent of the total outlay on the State Plans. In the case of our own State it can be seen that the percentage of the Minimum Needs Programme to the

total plan outlay even according to the figures indicated by the Planning Commission is less than this and comes to about 16-17 per cent.. An adjustment of only this order in the total plan outlay would not be sufficient to correct regional imbalances, taking into account the magnitude of the existing differences. Secondly, the removal of regional imbalances requires a significant effort in regard to programmes related to economic infrastructure and production and particularly in regard to employment-oriented programmes which are part of the normal plan. Therefore, even if the *interse* allocations under the Minimum Needs Programme take care of one aspect of the programme, the other aspect, and in some respects the more basic aspect of regional imbalances, would not have been taken into account if the *interse* differences between the normal plan outlays follow the same pattern as in the Fourth Plan. The scope of the other instruments available for removal of regional imbalances such as locational decisions in regard to Central sector investments and the policies of financing institutions has been shown to be limited and there is no reason to believe that it would be any larger during the Fifth Plan period.

Andhra Pradesh has been one of those State which have suffered considerably in this regard and where the imbalances have been accentuated due to the general trends mentioned above. The Fourth Plan outlay for Andhra Pradesh was very low on account of various reasons and the consequent stagnation has already had its effect on the State which is quite evident. If this stagnant level is taken we would not only be not halting this trend but would in fact be accelerating it further in an undesirable direction. The final proposals for the Fourth Plan of the State as worked out envisaged an outlay of Rs. 530 crores. If this is taken as the desirable level for the Fourth Plan then the size of the Fifth Plan would have to be the order of Rs. 1060 crores and the present proposals are in keeping with roughly this magnitude *i.e.*, Rs. 1100 crores.

The total outlay should be appropriately disaggregated into sectoral outlays, so that the approach to Fifth Plan mentioned earlier is translated into concrete action programmes. Accordingly in deciding the allocations for different sectors within an overall outlay of Rs.1277 crores, the following factors have had to be taken into account :

- (a) The need, on the one hand, to give greater priority for employment orientated programmes and on the other accommodate a Minimum Needs Programme of Rs. 177 crores approved by the Planning Commission ;
- (b) The spillover commitments in all sectors and more particularly in Irrigation and Power in which large projects are under execution ;
- (c) The minimum outlays required for utilising potential already created or for deriving full benefit from investments already made such as in the case of Ayacut Development and Power ;
- (d) The need to lay greater stress on industrialisation in our State ;

- (e) The balancing amounts required in different sectors for programmes that may be taken up under other sectors such as, for instance, under Co-operation for Agriculture or under Animal Husbandry for supporting the programme under Dairying and Milk supply, etc.

In the light of these broad considerations and the proposals made by the various Working Groups the sectoral allocations have been tentatively decided as indicated Table 1.

An analysis of the percentage allocations for different sectors now proposed for the Draft Fifth Plan and the changes in this pattern from the Fourth Plan will show how these various considerations have been taken into account.

Plan in outline:

Table II shows the pattern of allocations in the Fourth Plan by detailed heads of development. The following summary table shows the allocations in the Fifth Plan by major heads of development.

Outlays in the Fourth and Fifth Plans by major heads of development.

Sl. No.	Major Head of Development	Fourth Plan		Fifth Plan		Outlay (excluding MNP) (Rs. crores.)	Percentage to total
		Anticipated expenditure (Rs. crores.)	Percentage to total	Outlay (including MNP) (Rs. crores.)	Percentage to total		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
I.	Agriculture and allied activities (including Community Development and Co-operation).	65.48	15.8	159.91	12.5	159.91	14.5
II.	Major and Medium Irrigation.	98.18	23.0	200.00	15.7	200.00	18.2
III.	Power ..	176.28	41.2	455.00	35.6	450.00	40.9
IV.	Industries & Mining	14.77	3.5	62.12	4.9	62.12	5.6
V.	Transport & Communications.	15.50	3.6	73.88	5.8	43.88	4.0
VI	Social Services.	56.92	13.3	310.60	24.3	168.87	15.4
VII	Miscellaneous	0.36	0.1	15.49	1.2	15.49	1.4
	Total ..	427.49	100.00	1,277.00	100.0	1100.27	100.0

It will be seen from the above table that the major pre-orientation in the Fifth Plan is in terms of a reduction in the percentage allocation for irrigation and power and a corresponding increase in the allocation for Industry & Mining, Transport & Communications and Social services sectors for which adequate allocations could not be made in the earlier Plans. The allocation for irrigation and power sectors has come down from 64.2 per cent in the Fourth Plan to 51.3 per cent in the Fifth Plan. Even if Minimum Needs Programme is not taken into consideration, the allocations for these two sectors will be only 59.1 per cent. Any further reduction in the allocations for these two sectors is found to be extremely difficult. The spill-over commitment on both major irrigation and power projects is as much as Rs. 159 crores in case of irrigation and Rs. 148 crores in case of power projects. Thus, the allocation for Irrigation in the Fifth Plan is mostly intended for the spill-over Commitment so that the major projects such as Nagarjunasagar and Pochampad can be completed and the State will be able to derive the full benefits from the huge investments already made on them in the earlier Plans, as soon as possible. In the case of power, the State has already been suffering from a power shortage because of inadequate investments on installing generating capacity in the earlier Plans. At the end of the Fourth Plan, the shortfall in installed capacity is of the order of 350 M.W. and the demands in the Fifth Plan would necessitate the raising of generating capacity to 2296 M.W. With the outlay now provided in the plan, it will be possible to create generating capacity to meet this demand.

For Industries & Mining, the allocation has been increased from 3.5 per cent in the Fourth Plan to 4.9 per cent in the Fifth Plan and similarly for Transport and Communications, the percentage allocation has gone up from 3.6 in the Fourth Plan to 5.8 in the Fifth Plan. In the Social services sector, the step-up in the percentage allocation is rather high, the allocation for it going up from 13.3 per cent in the Fourth Plan to as much as 24.3 per cent in the Fifth Plan. This can be attributed, in a large measure, to the allocations in the Minimum Needs Programme where substantial amounts have been made for elementary education, rural medical facilities, rural water supply, nutrition programmes, home-sites for landless labour, rural roads and slum improvement. Even if Minimum Needs programme is not taken into account, the percentage allocation for this sector shows a modest rise. The increase in percentage allocations for Miscellaneous programmes is due to the substantial provisions made in the Fifth Plan for Land Reforms and Area Planning programmes.

It might be relevant to mention here that these comparisons are in terms of percentage allocations and that even in those sectors where the percentage allocations might be somewhat less than in the Fourth Plan, in absolute terms the Draft Fifth Plan allocations proposed still involve a very large step up in the outlays.

These allocations pertain only to the outlays under the State Plan itself. These would naturally be supplemented in some sectors by institutional finances. Following the pattern in the Fourth Plan, institutional finance has been included in the plan itself in some cases as in Housing and Urban water supply, while in some other cases such as

Ayacut development, Industries etc., only the State's share is indicated in the plan proposals and these outlays are expected to attract much larger proportion of institutional finance which is not included in the plan outlay.

While the allocations themselves indicate to some extent the re-orientation in the approach to the plan, this would have to be further reflected in the choice of techniques of production, choice of projects, locational decisions etc. In all these matters, the three basic considerations mentioned in the approach, namely, the reduction of regional imbalances, reduction of income disparities and increase of employment opportunities would have to be taken into consideration. In working out the detailed proposals for each sector these would have to be kept in view.

The various programmes under different sectors are briefly described below, the details of which are given in Part II.

Agriculture and Allied Sectors:

In Andhra Pradesh about 70 per cent of the people living in rural areas are almost entirely dependent on agriculture and allied activities. The income generated out of agriculture and allied sectors constitutes about 57 per cent of the total State income. It is, therefore, necessary that substantial importance is given to the agricultural sector in the Plan. Further, even, according to the National approach, the main attack during the Fifth Plan has to be on rural poverty. Hence, increasing agricultural production and productivity would be the major objective in the Fifth Plan while ensuring distributive justice at the same time.

The agricultural economy of the State is characterised by the fact that while the agriculture in irrigated areas, especially in Krishna and Godavari basins is fairly well-developed, the same is not the case in the rest of the State where dry cultivation, purely dependent on nonsoons, predominates. Many of these areas are in fact vulnerable to serious drought year after year. Further, the increase in agricultural productivity has not been particularly impressive during the recent past. These factors have been kept in view while preparing the plan for agricultural development.

It is necessary to remember that in this sector the supply of important inputs like fertilizers, credit etc., are not directly included in the Plan programmes and only certain supporting programmes are included in the Plan. The performance of the sector will therefore depend to a crucial degree on the availability of these inputs. However an integrated approach keeping the conditions of the different areas in view and ensuring coordination between the various operating agencies is essential. The programmes in agriculture and allied sectors should also be viewed in the light of the fact that the provision for certain essential infrastructure such as irrigation, power, transport and communications is made under those heads.

In the Fifth Plan, an amount of Rs. 121.67 crores is allocated for agricultural and allied programmes against an anticipated expenditure

of Rs. 47.46 crores in the Fourth Plan. Of this, Rs. 17.15 crores is for agricultural production programmes, Rs. 43.50 crores for Minor Irrigation Rs. 30.13 crores for Ayacut Development, Rs. 5.50 crores for Animal Husbandry, Rs. 8.00 crores for Dairying and Milk Supply, Rs. 6.00 crores for Forests, Rs. 5.25 crores for Soil conservation, Rs. 4.21 for Fisheries and Rs. 1.50 for Warehousing and Marketing.

In regard to agricultural production programmes, the major emphasis is on plant protection, improved seed programmes, intensive cultivation programmes with special attention to extension training and farmers' education. The need for coordination between the various institutional agencies has been highlighted. The programmes of the Agricultural University involve change in emphasis from crop-wise approach to development of cropping system as a whole for various regions. Substantial attention has been paid to develop the Agro-Industries Corporation as an instrument for providing agro-services in select centres and development of agro-processing units. The training centres in the field of Community Development and Panchayati raj are also given adequate attention. The magnitude of the problem of Soil Conservation is enormous but its importance is crucial in the context of drought prone areas. The programme is expected to cover the particularly crucial areas and also provide substantial employment.

Marketing facilities are essential and in this context the subsidy to market committees and grading at farm level has to be given importance. There is also need for share capital to the State Warehousing Corporation which would attract substantial storage capacity through institutional finance.

Utilisation of irrigation potential created and likely to be created is of great importance. Ayacut development programmes have therefore been a priority item though provision in the State Plan will have to be supplemented by Central sector schemes as well as institutional finance. Major allocation is proposed for construction of field channels, formation of ayacut roads and contribution towards debentures of the Land Mortgage Bank. In addition, specific programmes supplementary to the normal programmes are proposed in the fields of Agricultural production, Agricultural University and Animal Husbandry. A package of these programmes in concentrated areas is expected to result in fuller utilisation of irrigation facilities created. In the field of Minor Irrigation, the development of surface irrigation facilities is envisaged on a large scale in the State Plan. There are a number of schemes, for which detailed estimates have been prepared and sanctioned but which could not be put on ground so far due to lack of financial resources and as such the programme can be stepped up quickly. Provision has also been made for a scientific survey of Ground Water resources by strengthening the Directorate of Ground-Water. Corresponding provision has also been made for loans through Co-operatives for taking up a well sinking programme based on such a survey. Emphasis is also proposed to be laid on modern methods of water management and for this purpose pilot schemes will be taken up. Some of these measures include sprinkler and drip irrigation, seepage tanks, measures to raise water table, lining up of distributaries etc.

It is envisaged that with the outlay contemplated in the Fifth plan the production of food grains in the State would increase from

75 lakh tonnes at the beginning of the Fifth Plan to 98.5 lakh tonnes by the end of the Plan or an increase by about 25 per cent. Similarly, the production of oil seeds would increase from 13.80 lakh tonnes, to 17.50 lakh tonnes or an increase by 27 per cent, cotton from 2.70 lakh bales to 3.48 lakh bales or an increase by 29 percent and Sugarcane from 116 lakh tonnes (cane) to 140 lakh tonnes or about 21 per cent. The additional irrigation facilities that would be created by the Minor Irrigation programmes will be of the order of 5.70 lakh acres.

The allied activities in the field of Forestry, Animal Husbandry and Dairying and Milk Supply and Fisheries are also important in the context of rural economy. A substantial programme of Dairying and Milk supply is proposed to be taken up in the Fifth Plan along with the connected Animal Husbandry programmes. Further, importance is also accorded to Poultry, piggery and sheep development depending on the areas. The Dairying and Milk supply programmes have been given substantial emphasis in view of its value as source of nutrition and as a source of income for weaker sections. While the programme in Animal Husbandry emphasises the upgrading of cattle and provision of animal health facilities, the programmes in Dairying and Milk Supply concentrate on establishment of Cooling and Chilling centres, Feed Mixing Factories and Milk Powder Factory. In the Fifth Plan, it is proposed to establish 7 dairies, 2 milk powder factories, 30 chilling centres, 3 cooling centres and 2 cold storage units. The total installed capacity for handling milk by all these units will increase from 7.37 lakh litres at the end of Fourth Plan to 19.80 lakh litres by the end of Fifth Plan.

It is proposed to closely coordinate the programmes under these two heads so as to ensure that the Animal Husbandry programme provides the infrastructure necessary for a successful dairying programme. In both programmes emphasis is sought to be given for weaker sections and backward areas.

In the Forestry sector, high importance is accorded to plantations particularly quick-growing species and for research and training and intensification of management.

In the field of Fisheries highest priority is given to marine fisheries in view of the long coastal belt while adequate attention is also paid to supply of inputs, development of reservoir fisheries and strengthening of co-operatives.

A number of Central sector programmes particularly D.P.A.P. programme would be supplementing the efforts of the State Plans in the field of agriculture and allied activities. When the details of the programmes are worked out it would be possible to take into account these aspects more fully though depending on the information available even as of now the possibilities of the Central sector schemes have been kept in view. The provision required for staff for implementing land reforms has been indicated in a separate section.

Community Development and Co-operation:

The Panchayati Raj institutions and the co-operatives provide the basic administrative and economic infrastructure for agriculture

and all other developmental programmes in the rural areas. However, the allocations made in the Plan are only part of the source of resources for both these institutions, the major source being outside the Plan. Thus, for instance, in the case of the Panchayati Raj institutions there are their own sources of revenue and the per capita grants given by the Government for discharging several of their responsibilities. Similarly, in the case of the co-operatives the resources available for their loaning are not reflected in the Plan which makes provision only for certain specified programmes. The allocations under this sector have, therefore, to be viewed in this context.

An amount of Rs. 13.24 crores is provided in the Fifth Plan for Community Development programmes and Panchayati Raj against an anticipated expenditure of Rs. 6.08 crores in the Fourth Plan. For Co-operation, the provision is Rs. 25.00 crores against Rs. 11.92 crores in the Fourth Plan. In the field of Co-operation, a very substantial reorientation in terms of development of co-operatives for weaker sections and educated unemployed is envisaged. In addition, in the light of land reforms and the new agricultural policy, farmers service societies and co-operative farming, coupled with marketing and processing are accorded importance.

Irrigation :

An amount of Rs. 200 crores is provided for the Irrigation sector in the Fifth Plan against an anticipated expenditure of Rs. 98.18 crores in the Fourth Plan. Much of the provision in the Fifth Plan will be spent on the spill-over Projects. It is estimated that the spill-over commitments of the Fourth Plan major and medium irrigation projects will be of the order of Rs. 158 crores. There are also a few new schemes which have necessarily to be taken up even keeping in mind the limitation of resources. Thus it is important that some improvements of existing schemes are taken up in order to enable better water management. Some new schemes have also to be considered in order to create additional irrigation potential in backward areas. It is expected that with the order of outlay proposed, the Nagarjunasagar project, the Pochampad Project (Phase-I) and all the other spill-over works of the earlier plans would be completed before the end of the Fifth Plan adding an additional 19.48 lakh acres of potential. The new Medium Irrigation Projects proposed to be taken in the Plan would bring an additional 1.57 lakh acres under Irrigation. Thus, the total irrigation potential that would be created as a result of the Fifth Plan programmes would be of the order of 21 lakh acres.

Power :

Andhra Pradesh is extremely backward in power consumption. In 1970-71, the per capita consumption of power in the State was 50.0 K.W.H. against 153.3 K.W.H. in Maharashtra, 140.0 K.W.H. in Punjab, 129.8 K.W.H. in Tamil Nadu 124.0 K.W.H. in Gujarat, 106.0 K.W.H. in West Bengal and 80.9 K.W.H. in All-India. At the end of the Fourth Plan it is estimated that the short fall in installed capacity in the State would be of the order of 850 M.W. Besides, in the Fifth Plan, it is anticipated that the peak demand will increase to 1640 M.W., which

would require an installed generating capacity of 2,296 M.W., by the end of the Plan. As against this, the present installed capacity is only of the order of 668 M.W. In order to overcome the existing deficit and meet the growing demand for power in the State, an amount of Rs. 450 crores is provided for power sector in the Fifth Plan for creating an installed capacity of 1,550 M.W. It is also proposed to electrify 6,000 villages during the Fifth Plan and energise an additional 2 lakh pump-sets.

Industries and Mining:

The economy of Andhra Pradesh is largely agricultural. In spite of the passage of four plans and in spite of the fact that the State possesses abundant natural resources and a wide range of mineral deposits, it has not yet achieved anything resembling diversification seen in some of the advanced neighbouring States. Industrially, the State continues to remain backward. The levels of development in the non-agricultural sector particularly the industrial sector, are neither commensurate with the developmental needs of the State nor in keeping with the infrastructure potential already created. A meaningful plan, therefore, should not only provide for making up the existing leeway as far as possible, but should also ensure that the industries and mining sectors make a significant contribution to the economy of the State as a whole.

The Fifth Five-Year Plan, for Andhra Pradesh in the industries sector envisages a State outlay of Rs. 62.12 crores broken up into Rs. 42.12 crores for the large and medium scale sector and Rs. 20 crores for the small scale sector. These State outlays along with autonomous investments are expected to generate a total investment of Rs. 440 crores of which Rs. 310 crores is expected in the large and medium scale sector and Rs. 130 crores in the small scale sector. Based on these anticipated levels of investment an average growth rate of about 8.5 per cent could be projected in the industries sector during the Fifth Plan which compares with the projected All-India average of 8.3 per cent. While the rate of growth in percentage terms is comparable, the industrial activity anticipated would, in absolute terms, be, far less than desirable in view of the slender industrial base of the State. Efforts towards a higher level of growth rate are essential to reduce the present disparities in the matter of industrial development.

Of the Rs. 310 crores of investment anticipated in the large and medium scale sectors, about Rs. 45 crores representing nearly 15 per cent is anticipated by way of autonomous investments, Rs. 230 crores on account of the efforts induced through APIDC's participation and the rest by way of outlays planned in the mining sector and direct Government participation.

In the Mining sector a total investment of about Rs. 20 crores is anticipated involving a State outlay of Rs. 5.46 crores. Bulk of the amount of the State outlay is in the Andhra Pradesh Mining Corporation which is expected to create the necessary conditions for substantial mining activity both in the public and private sectors.

In the small scale industries sector, out of the total of Rs. 130 crores investment anticipated, autonomous investment to the extent of Rs. 75 crores representing nearly 60 per cent is estimated on the basis of past performance. In addition induced investments through the efforts of APSSIDC are envisaged at Rs. 30 crores and the rest is being contributed by Khadi and Village Industries, leather industry, handlooms and sericulture besides the direct participation from the Government.

In sum, therefore, the projections of investment in industries and mining sector would be, on a very rough basis, around Rs. 484 crores for which Rs. 62.12 crores would be from the State Plan outlays.

In addition to the outlay proposed above, some investments should be forthcoming from the Central sector. In the past, the State has not been fortunate enough to get reasonable order of investment in the Central public sector. The investment on the proposed Steel Plant at Visakhapatnam cannot be expected to rectify during the Fifth Plan period and so the benefits expected to accrue from it will only arise in the Sixth Plan period. It is, therefore, necessary that some more Central public sector units should also be located in the State so that some further impetus is provided to industrial development in the State.

Transport and Communications :

Roads constitute an important facility in the field of transport and communications. The other means of communications particularly, railways are in the Central sector, the national high-ways are also in the Central sector. The major thrust of the road plan would therefore, be strengthening of the State high-ways and laying a number of rural roads. An amount of Rs. 73.88 crores is provided for Transport and Communications against an anticipated expenditure of Rs. 15.50 crores in the Fourth Plan. Out of this, Rs. 57.00 crores is for Roads programme, Rs. 13.80 crores for Road Transport, Rs. 2.70 for Minor Ports and Rs. 0.38 crores for Tourism. Of the Roads programme Rs. 20 crores is provided under Minimum Need Programme for giving road connections for 997 villages with a population of 1,500 and above and which are not connected by any road and another Rs. 10 crores for Tribal roads. In regard to arterial roads, the emphasis is on completing the spill-over commitments and effect improvements to crucial roads.

The provision of Road Transport facility for passenger traffic is extremely important. The Andhra Pradesh State Road Transport Corporation is expected to muster its own internal resources and obtain funds from Central Government. However, this has to be supplemented by allocations from the State Government which are estimated to be about Rs. 13.80 crores out of a total programme of Rs. 63.63 crores, for the Fifth Plan period.

With the long coast line that Andhra Pradesh has, there are immense opportunities for development of minor ports

There are a number of Central sector schemes in this field which have to be allotted to Andhra Pradesh to help develop the Minor Ports. The State Plan programme, is restricted to the spill-over works of the Machilipatnam port and developmental works for Krishnapatnam port only.

Social Services:

Andhra Pradesh is one of the more backward States in the country in terms of social facilities. Further, in view of re-orientation in the Fifth Plan and the Minimum Needs Programme, there is a substantial stepping up of the outlays in this sector. The outlay on Social Services during the Fifth Plan will be Rs. 310.61 crores including Rs. 141.73 crores in the Minimum Needs Programme, constituting 24.3% of the total Plan outlay. Of this, Rs. 72.21 crores will be utilised on programmes relating to General and Technical education, Rs. 43.74 crores on Medical and Public Health, Rs. 68.01 crores on Urban and Rural water supply schemes, Rs. 51.50 crores on Urban development and housing, Rs. 18.79 crores on the welfare of Scheduled Castes, Rs. 13.91 crores on the welfare of Scheduled Tribes and Rs. 2.95 crores on Social Welfare and Labour Welfare programmes.

In General Education, Elementary Education is covered under the Minimum Needs Programme. However, certain supporting programmes in this have to be included in the normal Plan outlay and these have been provided for. The total allocation for Elementary Education will be Rs. 49.13 crores out of which Rs. 37.63 crores is covered by the Minimum Needs Programme. With these allocations, it is hoped to achieve an enrolment of 100 per cent among boys and 75 per cent among girls in the age-group 6-11 and 50 per cent among boys and 30 per cent among girls in the age-group 11-13.

In the case of Secondary and Higher Education the emphasis is on strengthening of the existing institutions and quality improvement rather on mere expansion. A total of Rs. 18.50 crores has been provided for these two items. In the case of Technical Education, also for which a provision of Rs. 3.08 crores has been made, emphasis is laid on the consolidation and improvement of the existing facilities and diversification and reorganisation of the various courses in the Polytechnics etc. There are a number of Central sector schemes in Technical Education which will help augment the allocation in the State Plan itself. The changing pattern of employment opportunities is also taken into account in formulating the schemes in this sector.

In the field of Medical and Public health, the Minimum Needs Programme amounting to Rs. 21.60 crores is expected to take into account to a substantial extent the provision of primary health facilities in the rural areas. In addition, an amount of Rs. 22.14 crores is provided in the State plan for modern medicine, public health and Indian medicine. The most important of the programmes included under modern medicine are the opening of 65 new dispensaries in the rural areas and increase of bed strength of the taluk hospitals by 2,379 and the district hospitals by 1,026. Besides this, 87 new dispensaries of Indian medicine are proposed to be opened during the

Fifth Plan. Under Minimum Needs Programme, it is proposed to establish 496 new sub-centres besides strengthening the existing primary health centres and sub-centres with additional allowance for medicines, construction of buildings and staff quarters. It is also proposed to upgrade 81 primary health centres into 30 bedded rural hospitals.

Under modern medicine, the maximum emphasis is placed on spill-over commitments and opening of new dispensaries in rural areas in the light of the identified service centres. It is proposed to develop a 5 tier system of medical facilities which involves substantial improvements to Taluk hospitals and filling up gaps in District hospitals. It, would therefore, be evident that the emphasis is on rural areas while under medical education emphasis is placed on quality improvement and the facilities required for this and not on expansion. This approach is in consonance with the preliminary man-power projections. In regard to public health, the expansion of laboratories and auxiliary health programmes include maternity and child health and health education. Further it is proposed to explore the possibility of attracting institutional finances by setting up a separate institution for production of vaccines. The food and drug administration is also proposed to be strengthened. These measures coupled with environmental improvements through housing and water supply should make a substantial impact on the sanitary and health conditions of the people. It is also recognised that Indian medicine provides relief to a number of people particularly in the rural areas and accordingly the establishment of dispensaries for Indian medicine in the rural areas is given importance.

Provision of water supply to the rural areas is considered a priority item. The total number of distinct habitations comprising villages, hamlets and harijanwadals, located at a distance of one kilometre or more from a village or a hamlet, is 64,081 of which only 43,059 will have drinking water facilities by the end of the Fourth Plan. Water supply may be provided to the rural areas either through the rural water supply or through the protected water supply schemes. The total requirement for rural water supply is expected to be of the order of Rs. 56.18 crores but the Planning Commission have approved a programme of sinking 4080 (6") bore wells and 8160 (4") bores for supplying drinking water to 4080 problem and difficult villages and their hamlets and harijanwadals. This programme is estimated to cost Rs. 29.00 crores. However an amount of Rs. 25 crores only is provided by the Planning Commission under the Minimum Needs Programme for this purpose.

The allocation in the State Plan of Rs. 6.00 crores is intended for protected water supply schemes ensuring the completion of 26 such spill over schemes, completion of 181 schemes taken up in 1973-74 with L.I.C. assistance and 110 new schemes in the Fifth Plan. The protected water supply schemes would be restricted to the problem areas with higher population concentration.

The Urban water supply programmes are crucially important both as an amenity and for the purpose of industrialisation of the urban centres. The programmes under this sector which are carried out by a number of agencies are likely to attract substantial institutional

finances. The main objectives of the urban water supply and drainage programmes are to cover the entire population with adequate drinking water supply, to provide all the towns with a population of 1 lakh and above with sewerage schemes and to improve the environmental sanitation and prevention of water and air pollution for which an amount of Rs. 37.00 crores has been provided in the Plan. During the plan period, 25 water supply schemes of the Fourth Plan which have spilled over to the Fifth Plan will be completed. Besides, schemes will be taken up to augment the existing water supply in 15 municipalities and new water supply schemes will be taken up in 13 municipal areas. Extension and augmentation of treatment facility to Hyderabad sewerage system are also proposed to be taken up at a cost of Rs. 1.75 crores.

In addition to the water supply, urban areas require to be developed in a planned way, particularly, ensuring the city development and scientific land use. The scientific land use would require (a) preparation of Master Plan, (b) follow-up through implementation of Master Plans (c) Urban renewal schemes; and (d) some of the remunerative enterprises indicated by the Master Plan. Programmes for urban development will, accordingly, be drawn up and it is also proposed to explore the possibility of setting up appropriate development authority for the implementation of the Master Plans.

Housing is an important activity both as a social amenity and as an activity that provides employment.

A number of agencies such as the Housing Board and the Federation of House Builders Societies are expected to contribute towards the creation of housing facilities. A provision is made in the State plan towards subsidy for Industrial Housing and for taking up village housing on a modest scale. It may be mentioned here that there are substantial allocations for housing for Scheduled Castes and Scheduled Tribes through a Corporation meant for this purpose for which a separate allocation has been made.

There is a programme for environmental improvement of Slum areas under the Minimum Needs Programme which will be restricted to only Hyderabad, Visakhapatnam and Vijayawada for which Rs. 5 crores have been allocated. An additional amount of Rs. 5 crores for slum clearance is proposed under the State plan to cover some of the more important municipalities.

The Scheduled Caste population in the State is about 58 lakhs constituting 13.8 per cent of the total population and that of Scheduled Tribes 16.8 lakhs forming 3.8 per cent. The social and economic development of these backward sections of the population is essential from the view point of social justice. The Programmes under various sectors, will, no doubt cover these sections also. However a separate provision of Rs. 18.79 crores for the welfare of Scheduled Castes and other backward classes and Rs. 13.91 crores for Scheduled Tribes has been made to supplement the general programmes in other sectors for the social and economic advancement of these sections of the population

For Scheduled Castes and backward classes, the important programmes relate to education and economic uplift. In the Fifth Plan, apart from the traditional method of giving scholarships, emphasis on training for avocations is made. Similarly in economic uplift programmes apart from the provisions under the Co-operative sector for weaker sections special provisions are made which will constitute the seed money for attracting institutional finances. Share capital contribution to the existing Scheduled Castes and Scheduled Tribes Co-operative Housing Federation has been provided in the plan. It is also proposed to setup Corporations for financing the development and economic uplift of the Scheduled Castes and Backward classes. For Scheduled Tribes, strengthening of the existing Girijan Co-operative Corporation and education and economic uplift programmes have been suggested. The tribal programmes take into account the area approach and the tribal group background. The allocations for tribals is in addition to the separate allocation of Rs. 5 crores for rural electrification and Rs. 10 crores for rural roads under the Minimum Needs Programme and the normal support programmes in the State Plan. Besides these it is anticipated that special Central schemes and assistance would be available for Tribal Welfare scheme. In undertaking the programmes, a distinction is made between the plains and the agency areas as also between the landless and those having lands and appropriate programmes are designed for the various groups.

The major thrust relating to the development of Scheduled Castes and Scheduled Tribes would be in developing a net-work of institutions which would channelise resources for programmes of economic uplift particularly, through the co-operative form of organisation.

An integrated area approach will also be adopted in designing and implementing schemes intended for tribals.

There are other social welfare programmes covering women's welfare and social defence programmes. Substantial portion of the provision of Rs. 0.60 crores made in the plan for women and child welfare will be spent on children homes, while under the social defence programmes, for which a provision of Rs. 0.80 crore is made opening of reception homes, certified schools and borstal schools are proposed.

It may be noted here that under the Minimum Needs Programme, an amount of Rs. 39.50 crores is provided for Nutritional Programmes covering pre-school and school going children and expectant and nursing mothers.

In the field of labour welfare for which an amount of Rs. 2.05 crores is provided in the plan there are three groups of schemes viz., training of craftsmen, employment market information and labour welfare. In regard to employment and training, the I.T.Is are proposed to be strengthened and new courses particularly the popular trades are proposed to be introduced.

Miscellaneous :

In order to strengthen the planning process at the State level, there is need for building up technical expertise in the preparation of

long-term perspective plans based on economic analysis and technical studies involving econometric models and statistical techniques and in project formulation, project evaluation, monitoring plan progress and building up information systems.

In the context of a spatial approach to planning, regional and district plans become important and this will require strengthening of the organisation below the State level also. There is also need for improving the data base in the State. Therefore, a provision of Rs. 1.5 crores for planning organisation and Rs. 0.5 crores for statistics is provided in the Plan. Besides, a provision of Rs. 5.00 crores for Land Reforms and Rs. 8.2 crores for Area Planning programmes are also made in the plan.

It is proposed to establish a separate institute for specialising in area planning techniques. Certain locational and area gaps which may be identified in due course and which may not be covered by other programmes have to be provided. Allocations have, accordingly, been indicated tentatively.

Institutional measures for ensuring the success of the programme are proposed under various sectoral programmes. However, an important element in the institutional change is the proposed land reforms for which the administrative requirements have been provided for in the State Plan.

TABLE I

Fourth Plan outlay, by sheets

(Rs. in crores)

Name of the State. :	Fourth Plan outlay.	Double the Fourth plan outlay.	Population 1971 (lakh per- sons.)	per capita outlay. Rs.	Rank.	Per capita income (1969-70) Rs.
1. Andhra Pradesh ..	420.50	841.00	435.03	193	14	544
2. Assam ..	261.75	523.50	149.58	319	6	586
3. Bihar ..	531.28	1062.56	563.53	188	15	402
4. Gujarat ..	455.00	910.00	266.97	340	7	740
5. Haryana ..	225.00	450.00	100.37	448	3	908
6. Jammu & Kashmir	158.40	316.80	46.17	686	2	503
7. Kerala ..	258.40	516.80	213.47	242	9	643
8. Madhya Pradesh ..	383.00	766.00	416.54	183	16	495
9. Maharashtra ..	898.12	1796.24	504.12	356	5	736
10. Mysore ..	350.00	700.00	292.99	238	10	571
11. Nagaland ..	40.00	80.00	5.16	1550	1	328
12. Orissa ..	222.60	445.20	219.45	202	13	545
13. Punjab ..	293.56	587.12	135.51	433	4	1002
14. Rajasthan ..	302.00	604.00	257.66	234	11	478
15. Tamil Nadu ..	519.36	1038.72	411.99	252	8	591
16. Uttar Pradesh ..	965.00	1930.00	883.41	218	12	497
17. West Bengal ..	322.50	645.00	443.12	145	17	706
18. Himachal Pradesh ..	..	..	34.60	..	..	723
India ..	6600.47	13212.94	5479.50	241		

Sources : 1. Fourth Five-Year Plan—1969-74.

2. Pocket book of Population Statistics-Census Centenary 1972.

3. Per Capita income estimates prepared by C.S.O.

TABLE II.
Section wise Outlays in the Fifth Plan of Andhra Pradesh

Head of Development			Amount double that of the anti- cipated exp. in the IVth Plan.	% of total.	Allocation in the Plan of Rs. 1100 Crores for the Fifth Plan.	% to total	Alloca- tion under MNP.	Total Plan for Rs. 1277 Crores including MNP.	% to total.
(1)			(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Agricultural Production .. including Land Development	..	..	1373.62	1.61	1715.00	1.56	..	1715.00	1.34
2. Training Centres ..	..	..	37.00	0.04	42.63	0.04	..	42.63	0.04
3. Minor Irrigation ..	..	..	3940.18	4.61	4350.00	3.94	..	4350.00	3.41
4. Soil Conservation ..	..	..	518.30	0.61	525.00	0.48	..	525.00	0.41
5. Ayacut Development ..	..	..	1572.76	1.86	3013.00	2.74	..	3013.00	2.36
6. Animal Husbandry ..	..	..	379.54	0.44	550.00	0.50	..	550.00	0.43
7. Dairying and Milk Supply ..	..	..	714.32	0.84	800.00	0.73	..	800.00	0.63
8. Forests ..	..	..	573.08	0.67	600.00	0.55	..	600.00	0.47
9. Fisheries ..	..	..	346.14	0.40	421.00	0.38	..	421.00	0.33
10. Warehousing and Marketing ..	..	..	37.80	0.04	150.00	0.14	..	150.00	0.12
Sub-Total ..			9492.74	11.10	12,166.63	11.06	..	12,166.63	9.53

TABLE II—(Contd.)

Head of Development	Amount double that of the anti- cipated exp. in the IVth Plan.	% Total	Allocation in the Plan of R. 1100 Crores for the Fifth Plan.	% to Total	Allocation under MNP.	Total Plan for Ps. 1277 Crores including MNP.	% to Total.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Co-operation	2,384.78	2.79	2,500.00	2.27	..	2,500.00	1.96
Community Development and Panchayati Raj ..	1,215.48	1.42	1,324.00	1.20	..	1,324.00	1.04
Sub-Total ..	3,600.26	4.21	3,824.00	3.47	..	3,824.00	3.00
Irrigation	19,636.54	22.96	20,000.00	18.18	..	20,000.00	15.66
Power	35,255.74	41.24	45,000.00	40.90	500.00	45,500.00	35.63
Sub-Total ..	54,892.28	64.20	65,000.00	59.08	500.00	65,500.00	51.29

TABLE II—(Contd.).

Head of Development.				Amount double that of the anticipated expenditure in the IVth Plan.	% to total.	Allocation in the Plan of Rs. 1100 Crores for the Fifth Pla n.	% to total	Allocation Under MNP.	Total Plan for Rs. 1277 Crores including MNP.	% to total.
(1)				(2)	(3)	(4)	(5)	(6)	(7)	(8)
Large and Medium Industries..	..	..	..	1,655.82	1.94	3,638.00	3.31	..	3,638.00	2.85
Mineral Development	..	..	..	44.60	0.05	546.00	0.50	..	546.00	0.42
Metric System	..	..	..	165.24	0.19	28.00	0.03	..	28.00	0.02
Village & Small Scale Industries	..	..	..	1,089.10	1.27	2,000.00	1.81	..	2,000.00	1.57
Sub. Total				2,934.76	3.45	6,212.00	5.65	..	6,212.00	4.87
Roads ..	..	..	..	2,360.68	2.77	2,700.00	2.45	3,000.00	5,700.00	4.46
Roads Transport	..	..	..	462.16	0.54	1,380.00	1.25	..	1,380.00	1.08
Minor Ports	..	..	..	240.00	0.28	270.00	0.25	..	270.00	0.21
Tourism	..	..	..	37.22	0.04	37.78	0.04	..	37.78	0.03
Sub. Total				3,100.06	3.63	4,387.78	3.99	3,000.00	7,387.78	5.78

TABLE II—(Contd.)

Head of Development.				Amount double that of the outlay in the IVth Plan.	% to total.	Allocation in the Plan of Rs. 1100 Crores for the Fifth Plan.	% to total.	Allocation Under MNP.	Total Plan for Rs. 1277 Crores including MNP.	% to Total.
(1)				(2)	(3)	(4)	(5)	(6)	(7)	(8)
General Education	..	..	..	2,596.08	3.04	3,150.00	2.86	3,763.00	6,913.00	5.41
Technical Education	..	..	..	261.06	0.31	308.00	0.28	..	308.00	0.24
Medical and Public Health	..	..	..	895.88	1.05	2,214.00	2.01	2,160.00	4,374.00	3.43
Urban Water Supply	..	..	..	2,110.30	2.47	3,700.57	3.36	..	3,700.57	2.90
Rural Water Supply	..	..	..	1,767.34	2.07	600.00	0.55	2,500.00	3,100.00	2.43
Housing	..	..	..	1,606.04	1.95	2,550.00	2.32	1,800.00	4,350.00	3.41
Urban Development	..	..	..	337.14	0.39	800.00	0.73	..	800.00	0.63
Welfare of Scheduled Castes and Other Back-ward Classes.	..	..	..	595.88	0.70	1,879.42	1.71	..	1,879.42	1.47
Welfare of Scheduled Tribes	..	..	..	1,010.78	1.18	1,390.76	1.26	..	1,390.76	1.09
Social Welfare	..	..	..	54.18	0.06	89.86	0.08	..	89.86	0.07
Labour & Labour Welfare	..	..	..	86.40	0.10	205.00	0.19	..	205.00	0.16
Public Co-operation	..	..	..	3.36	..	..	..	..	..	..
Nutrition	..	..	..	..	..	..	..	3950.00	3950.00	3.08
Sub-total				11,384.44	13.32	16,887.61	15.35	14,173.00	31,060.61	24.32

TABLE—II—(Contd.).

Head of Development.	Amount double that of the anticipated exp. in the IV Plan.	% to Total.	Allocation in the Plan of Rs. 1100 Crores for the Fifth Plan.	% to total.	Allocation under MNP.	Total Plan for Rs. 1277 Crores including MNP.	% to total.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Statistics	29.16	0.03	50.00	0.05	..	50.00	0.04
Planning Organisation	17.82	0.02	150.00	0.14	..	150.00	0.12
Boardcasting }	25.66	0.08	26.68	0.02	..	26.68	0.02
Publicity }							
Land Reforms .. .. .	..	..	500.00	0.45	..	500.00	0.39
Area Planning Programmes .. .. .	..	..	822.30	0.75	..	822.80	0.64
Sub-total	72.64	0.08	1,548.98	1.41	..	1,548.98	1.21
Grand Total	85,497.18	100.00	1,10,027.00	100.0	17,678.00	1,27,700.00	100.0

7. MINIMUM NEEDS PROGRAMME

According to the Approach document, one of the major objectives of the Fifth Plan is removal of poverty. Since the main causes of poverty are unemployment and under-employment, it is proposed to tackle this problem by providing additional employment opportunities on a massive scale, so that the purchasing power of the poorer sections of the society is considerably increased. It is, however, realised that a mere increase in the earnings of the poorer sections of people may not enable them to buy for themselves all essential goods and services which constitute the quality of life. It is, therefore, proposed in the Fifth Plan, to supplement the programme for providing larger employment and incomes to the poorer sections of people by undertaking a Minimum Needs Programme for the provision of social consumption to satisfy the essential minimum needs of the poorer and weaker sections of population. The outlay proposed for the Minimum Needs Programme for Andhra Pradesh has been tentatively placed at about Rs. 177 crores as detailed below and the same will form part of the State's Fifth Plan:

<i>Head</i>	Outlay (Rs. in crores)
1. Elementary Education	97.63
2. Rural Water Supply	25.00
3. Medical	21.60
4. Nutrition	39.50
5. Home-sites for landless labour	18.00
6. Rural Roads	30.00
7. Rural Electrification	5.00
8. Environmental Improvement	5.00
	176.73

The details of the programme under each sector are briefly described below:

Elementary Education

The percentage enrolment of children in the age group 6-11 years in the State at the end of the Fourth Plan is likely to be 76 per cent only as against 88 per cent in the country as a whole. Similarly, in the enrolment of children in the age group 11-14 years also, the achievement by the end of Fourth Plan is expected to be only 30 per cent as

against 39 per cent in the country. Among the States of the Indian Union, Andhra Pradesh occupies the 12th place in regard to enrolment of children in the age group 6-11 years and 17th place in regard to enrolment of children in the age group 11-13. Within the State also there are inter-regional disparities, the anticipated coverage in Telangana region by the end of Fourth Plan being as low as 49.9 per cent as against 94.6 per cent in Coastal Andhra and 80.3 per cent in Rayalaseema. Similarly, in the case of 11-13 age group, the percentage enrolment will be 28.4 per cent in Telangana region as against 30.4 per cent in Rayalaseema and 34.3 per cent in Coastal Andhra.

Moreover, the percentage enrolment of girls is uniformly lower than that of boys throughout the State. The percentage enrolment of girls in the age group 6-11 by the end of 1973-74 is estimated at 62 as against 89 in the case of boys. Similarly, the percentage enrolment of girls in the age-group 11-13 is only 19 as against 42 in the case of boys as indicated in the table given below:

	Enrolment in lakhs			
	1968-69 (Actual)		1973-74 (Anticipated)	
	Classes I-V	Classes VI-VII	Classes I-V	Classes VI-VII
Boys	22.86 (86%)	3.68 (39%)	25.83 (89%)	4.65 (42%)
Girls	15.57 (60%)	1.51 (16%)	17.17 (62%)	2.05 (19%)
Total	38.43 (73%)	5.19 (27%)	43.00 (76%)	6.70 (30%)

(The figures in brackets represent the percentages of enrolment to the population in the corresponding age-groups).

In order to achieve cent per cent enrolment of children of age group 6-11 and 60 per cent enrolment of children of age group 11-13 by the end of the Fifth Plan, the State Government formulated proposals involving an outlay of Rs. 233.82 crores for inclusion under the Minimum Needs Programme, the break-up of which is as follows :

	(Rs. in crores)
1. Lower Primary	.. 125.21
2. Upper Primary	.. 68.98
3. Administration and Inspection	.. 1.64
4. Improvement Programmes	.. 37.99
Total :	.. 233.82

The break-up of the cost of schooling facilities for the age groups 6-11 and 11-13 has been proposed as under

(Rs. in crores)

(Lower Primary) Age-group 6 - 11		(Upper Primary) Age-group 11 - 13	
(i) Salaries for appointment of 51,885 teachers at the rate of Rs. 3,300 per annum and contingent expenditure at the rate of Rs. 300 per annum ..	45.46	Appointment of 40,000 additional teachers and contingent expenditure ..	45.65
(ii) Cost of buildings at the rate of Rs. 6,000 per class room and equipment and furniture at the rate of 500 per teacher ..	33.73	Cost of buildings at the rate of Rs. 10,000 per school and furniture and equipment at the rate of Rs. 3,000 per school ..	13.00
(iii) Free mid-day meals to 25% of the existing enrolment in backward districts and 50% of the additional enrolment ..	30.68	..	..
(iv) Free uniforms, text-books and writing material to 50% of total enrolment in all backward areas	15.34	Free uniforms, text-books and writing materials at 50% of total enrolment in all backward areas at the rate of Rs. 50 per annum ..	10.33
Total	125.21		68.98

with the above order of outlay, it was expected that an additional 18.16 lakh children of the age group 6-11 and 7 lakh children of the age group 11-13 could be enrolled by the end of the Fifth Plan, the details of which are as follows :

Item	Unit	1973-74 (Anticipated)	1974-79 (Additional)	1978-79 (Target)
<i>Enrolment in Class I-V</i>				
Boys	Lakhs	25.83	6.05	31.88
Girls	„	17.17	12.11	29.28
Total	„	43.00	18.16	61.16
<i>Schooling facilities 6 - 11</i>				
Boys	%	89	..	105
Girls	%	62	..	101
Total	%	76	..	103
<i>Enrolment in Class VI-VII</i>				
Boys	Lakhs	4.65	2.40	7.05
Girls	„	2.05	4.60	6.65
Total	„	6.70	7.00	13.70
<i>Schooling facilities 11 - 13</i>				
Boys	%	42	..	60
Girls	%	19	..	60
Total	%	30	..	60

The above proposals were examined by a Working Group in the Planning Commission which recommended the scaling down of the target of enrolment of girls from 100 per cent to 80 per cent in the case of 6-11 age group and from 60 per cent to 40 per cent in the case of age group 11-13. They also recommended that in the age group 6-11, 100 per cent coverage of boys and girls might only be considered to be provided out of the Minimum Needs Programme, whereas, in the case of enrolment of age group 11-13, the cost required to bring the percentage enrolment upto 50 per cent of boys and girls respectively should be considered.

The Working Group also recommended that the programmes of strengthening the administration and inspecting machinery, establishment of training schools, improvement of selected primary and upper primary schools, model primary schools etc., proposed under the improvement programmes should be considered outside the purview

of the Minimum Needs Programme. The Working group finally recommended an outlay of Rs. 83.80 crores for elementary education under the Minimum Needs Programme, the break-up of which is as follows :

Item	Physical target	Norm of cost	Outlay under M.N.P. (Rs. in crores)
A. Expansion of Facilities :			
1. Classes I-V :			
(a) Teacher Cost	.. 27,000 teachers (as per teacher pupil ratio of 1:39)	Rs. 2,500 per teacher per annum for 3 years @ 15% of teacher cost	20.25
(b) Non-teacher Cost			3.04
			<u>23.29</u>
2. Classes VI-VII			
(a) Teacher Cost	.. 14,142 teachers (as per teacher pupil ratio of 1:29)	Rs. 4,000 per teacher per annum for 3 years.	16.97
(b) Non-teacher Cost		@ 20% of teacher cost	3.39
			<u>20.36</u>
B. Part Time Education :			
<i>Classes VI-VII :</i>			
3. Continuation classes (including non-teacher cost).	3,000 teachers	.. @ 4,000 per teacher per annum for 3 years.	10.08
4. Part-time courses	.. 16,000 centres.	Rs. 1,000 per centre.	1.60
			<u>11.68</u>
C. Incentives :			
5. Book grants :	50% of additional enrolment.	@ Rs. 5 per pupil in classes I-IV and	0.90
(a) Classes I-V.		@ Rs. 15 per pupil in classes VI-VII for 3 years.	0.80
(b) Classes VI-VII	Do.		
6. Girls' Education	.. 25% of additional enrolment in Classes I-VII.	@ Rs. 10 per girl per annum for uniform and Rs. 30 for attendance scholarship per annum for 3 years.	2.58
7. Tribal Education	.. ..	.. ..	1.17
8. Women Teachers' Quarters.	7,000 quarters	.. @ Rs. 10,000 per quarter.	7.00
9. Mid-day meals	.. ..	.. ..	8.67
			<u>21.12</u>
D. School Buildings			
..	24,500 class rooms, both primary and Upper primary.	@ Rs. 3,000 per class room.	7.
Grand Total ..			<u>83.80</u>

However, in the revised allocations indicated by the Planning Commission for the Minimum Needs Programme of Andhra Pradesh, the provision indicated for elementary education was Rs. 37.63 crores only, excluding the provision for mid-day meals programme. The Planning Commission have not so far indicated the revised break-up of the above outlay and the revised physical targets which are expected to be achieved with the above outlay. In the absence of this information, the State Government have re-examined the proposals with a view to achieve the maximum expansion of educational facilities with the outlay now approved by the Planning Commission. With this outlay under the Minimum Needs Programme, it is now proposed to enrol an additional 9.13 lakh children of the age group 6-11 in primary schools and 2.95 lakh children of the age group 11-13 in Upper primary schools during the Fifth Plan period which would take the percentage enrolment of children of the age group 6-11 from 76 per cent at the end of the Fourth plan to 88 per cent at the end of the Fifth Plan and the percentage enrolment of children of the age group 11-13 from 30 per cent at the end of the Fourth Plan to 40 per cent at the end of the Fifth Plan, the details of which are shown below :—

(in lakhs).

Item	Enrolment in 1973-74	Percentage coverage at the end of IV plan	Additional enrolment during the V Plan	Percentage coverage by the end of V Plan.
<i>(A) Classes I-V</i>				
Boys	25.83	89	4.56	100
Girls	17.17	62	4.57	75
Total	43.00	76	9.13	88
<i>(B) Classes VI-VII :</i>				
Boys	4.65	42	1.50	50
Girls	2.05	19	1.45	30
Total	6.70	30	2.95	40

Under the normal State plan, it is proposed to make provision for enrolling an additional 75,000 children of the age group 6-11 and 43,000 children of the age group 11-13 which would take the over-all percentage enrolment of children of age group 6-11 to 89 per cent and that of children 11-13 to 42 per cent by the end of the Fifth Plan.

The details of the Minimum Needs Programme for elementary education in the State including tribal areas conforming to the outlay of Rs. 37.63 crores are as shown below :

Outlay on Elementary Education Under the Minimum Needs Programme.

Item	Physical targets	Norm of cost	Outlay under M.N.P. (Rs. crores)
A. Expansion of Facilities			
1. Classes I-V			
(a) Teacher cost	.. 22,200 additional teachers (as per teacher pupil ratio of 1:39).	Rs. 2,500 per teacher per annum for 3 years.	16.65
(b) Non-teacher cost	..	15% of teacher cost	2.50
			<u>19.15</u>
2. Classes VI-VII			
(a) Teacher cost	.. 9,650 additional teachers (as per teacher pupil ratio of 1-20).	Rs. 4,000 per teacher per annum for 3 years.	11.58
(b) Non-teacher cost	..	20 percent of teacher cost.	2.31
			<u>13.89</u>
B. Incentives			
3. Book grants			
(a) Classes I-V	.. Grants to 50% of additional enrolment.	@ Rs. 5 per pupil for 3 years.	0.68
(b) Classes VI-VII	.. Do.	@ Rs. 10 per pupil for 3 years.	0.40
			<u>1.08</u>
4. Girls' Education (Primary and Upper Primary).	Incentives for 25% of additional enrolment of girls.	@ Rs. 10 for uniform and Rs. 30 for attendance per year for 3 years.	1.90
5. Ashram Schools in tribal areas.	.. ..	.. ..	0.50
D. Buildings			
6. Class Rooms	.. 3,700 class rooms	@ Rs. 3,000 per class room.	1.11
			<u>37.63</u>

* 5 per cent of the additional enrolment is proposed to be accommodated in the existing schools.

Tribal Education

At the end of the Fourth Plan, it is estimated that the percentage enrolment of tribal children of the age group 6-11 will be only 63 per cent in the case of boys and 34 per cent in the case of girls against 89 per cent and 62 per cent for the State as a whole. Similarly, the enrolment of children of age group 11-13 is expected to be 10.4 per cent for tribal boys and 2.4 per cent for tribal girls against 42 per cent for boys and 19 per cent girls in the State as a whole. In order to enrol 100 per cent boys and 75 per cent girls of the age group 6-11 and 50 per cent boys and 30 per cent girls of age group 11-13 in 24 Tribal development Blocks, it would be necessary to create schooling facilities for an additional 52,000 children of the age group 6-11 and 18,000 children of the age group 11-13 in the above 24 Blocks. This would require the appointment of 1,265 primary teachers and 589 Upper primary teachers. The total cost of the Minimum Needs Programme in the above 24 Blocks is, therefore, estimated to be of the order of Rs. 2.67 crores, the break-up of which is given below :—

Item	Physical target	Outlay (Rs. in crores)
<i>(A) Classes I-V :</i>		
(a) Teacher cost	.. 1,265 teachers ..	.. 0.95
(b) Non-teacher cost	@ 15% teacher cost	.. 0.14
<i>(B) Classes VI-VII :</i>		
(a) Teacher cost	.. 589 teachers ..	.. 0.71
(b) Non-teacher cost	@ 20% of teacher cost	.. 0.14
<i>(C) Incentives :</i>		
<i>Book grants :</i>		
(a) Classes I-V	.. Grants to 50% of addl. enrolment @ Rs. 5 per pupil for 3 years.	0.04
(b) Classes VI-VII	.. Grants to 50% of addl. enrolment @ Rs. 10 per pupil for 3 years ..	0.08
(c) Girls Education	.. Incentives for 25% of addl. enrolment @ Rs. 5 per uniform and Rs. 30 for attendance scholarship for 3 years.	0.10
<i>(D) Ashram Schools in tribal areas.</i>	..	.. 0.50
<i>(E) Buildings</i>	.. 200 class rooms	.. 0.06
	Total ..	2.67

The population of the tribal development blocks in 1971 was only 9.31 lakhs against a tribal population of 16.58 lakhs in the State as a whole. Thus, a considerable proportion of tribals are living in non-tribal development blocks and the children belonging to these families will be covered under the general programmes for expansion of Elementary Education. Therefore the share of tribals in the outlay for elementary education will be more than Rs. 2.67 crores worked out.

Rural Water Supply

In the Approach Document to the Fifth Plan, the need to provide drinking water facilities on a priority basis to rural areas suffering from scarcity, health hazards or special problems such as iron and flourides etc. has been stressed along with the need to cover villages with inadequate supply of drinking water, especially for Harijans and backward classes. In Andhra Pradesh, it was estimated that the total number of distinct habitations comprising villages, hamlets and Harijanwadadas, located at a distance of 1 Km. or more from a village or hamlet, was 64,081 out of which 43,059 will be having drinking water facilities by the end of the Fourth Plan. Thus, at the beginning of the Fifth Plan, 21,742 habitations comprising 5,280 difficult and problem villages, 6,156 Harijanwadadas, 1,500 Harijan Housing Colonies and 8,806 other villages and hamlets in soft areas will be left without adequate drinking water facilities. It was also estimated that in order to provide drinking water for all these remaining habitations, it would be necessary to drill 24,550 bores of 4" dia., 5,280 bores of 6" dia. and 4,000 simple wells in soft areas. The total cost of the programme was estimated at Rs. 56.18 crores and the State Government proposed that this outlay should be provided under the Minimum Needs Programme so that all the habitations without adequate drinking water supply in the rural areas could be provided with this facility by the end of the Fifth Plan.

A working group in the Planning Commission examined the above proposals of the State Government. According to its assessment, the outstanding number of difficult and problem villages in this State at the end of the Fourth Plan would be 4,080 and it recommended an outlay of Rs. 29 crores for providing drinking water facilities in these villages. It was decided by the Working group that each of these villages is an agglomeration of a number of hamlets, Harijanwadadas etc., and that on an average each revenue village would require 3 bore wells, one of which would be of 6" bore and the others 4" bores. The 4" bores are expected to be operated by small hand-pumps while the 6" bores would entail power pumps and to some extent piped water supply for transmission of water through a longer distance. The cost of providing drinking water supply to these 4,080 villages was estimated as follows :

	(Rs. in crores)
(i) 8160 numbers 4" dia. bores @ Rs. 5,500 each . .	4.49
(ii) 4080 numbers 6" dia. bores @ Rs. 60,000 each	24.48
	28.97
	say
	Rs. 29 crores

Out of the outlay of Rs. 29 crores required for providing drinking water facilities on the above basis for the 4,080 problem and difficult villages, an amount of Rs. 25 crores has been provided by the Planning Commission in the Minimum Needs Programme.

The Planning Commission have not taken a decision on the provision of drinking water to the Harijanwadadas. Out of 6,156 Harijanwadadas without drinking water facilities at the end of the Fourth Plan, it was estimated that 1,983 would be covered under the programme for providing drinking water for 4,080 problem and difficult villages. This leaves a balance of 4,173 Harijanwadadas. The State Government requested the Planning Commission to provide an additional amount of Rs. 9.88 crores for the provision of drinking water for these remaining Harijanwadadas, but no decision seems to have been taken by the Planning Commission.

Medical and Health:

By the end of the Fourth Plan, the State is expected to have one hospital bed for every 2,300 persons and one Government Doctor for 12,450 persons. But there are glaring disparities in the matter of coverage of medical facility as between rural and urban areas. The position by the end of the Fourth Plan will be one bed for 10,750 persons in rural areas (including emergency beds in Primary Health Centres) against one bed for about 550 persons in urban areas. If the six emergency beds in each Primary Health Centre are excluded, the bed population ratio in the rural areas will be as high as 1 : 37,300. Similarly, there is one Government Doctor for 34,100 persons in rural areas against one Doctor for 3,450 persons in urban areas. The stress under the Minimum Needs Programme has, therefore, to be on extension of the medical and health facilities to rural areas. The Planning Commission accepted the present standard of one Primary Health Centre for a block population of 80,000 to 1,00,000 supported by 8 to 10 sub-centres each serving 10,000 persons as the minimum norm for the Fifth Plan. But the Commission observed that "the main thrust may be directed at making up deficiencies in buildings, staff, equipment, drugs and medicines in a co-ordinated way". Therefore, in order to strengthen the medical and health facilities in the rural areas the State formulated comprehensive proposals involving an outlay of Rs. 85.40 crores for inclusion in the Minimum Needs programme, the break-up of which is as follows:

(Rs. in crores)

1. Upgrading one-third of Primary Health Centres into 30 bedded hospitals	11.49
2. Strengthening existing Primary Health Centres (Main centres)	8.24
3. Upgrading the existing 1245 sub-centres(C.D.) ..	28.82
4. Upgrading the existing 1769 F. P. sub-centre ..	27.69
5. Establishment of one additional sub-centre under each Primary Health Centre	9.16
Total ..	85.40

At present the nearest hospital for treating in-patients is a Taluk headquarters hospital since the Primary Health Centre is not equipped to deal with in-patients except emergency cases. It was, therefore, proposed to upgrade about one-third of the existing Primary Health Centres (i.e. 138) into 30 bedded hospitals in the Fifth Plan period.

There are at present 415 Primary Health Centres and 3,014 sub-centres including 1245 sub-centres under the regular C. D. pattern and 1769 Family Planning sub-centres, excluding the Family Planning sub-centres attached to the Main centre. The coverage in respect of Primary Health Centres by the end of the Fourth Plan will be one Primary Health Centre for about 90,000 rural population and one sub-centre for 12,000 rural population. No additional Primary Health Centres were, therefore, proposed during the Fifth Plan period, but it was proposed to strengthen these Primary Health Centres suitably by making additional provision for medicines. There are also a number of Primary Health Centres which do not have office building and quarters for medical officers and staff. It was, therefore, proposed to provide for the construction of these buildings in such of the existing Primary Health Centres which do not have them at present.

In the case of the sub-centres, it will be seen that the coverage of 12,000 falls below the minimum norm of 10,000 population per sub-centre. It was, therefore, proposed to establish 415 sub-centres at the rate of one more sub-centre in each Primary Health Centre during the Fifth Plan period.

At present the doctors are stationed at Primary Health Centres having a wide jurisdiction covering 8 sub-centres and about 65 villages and there are no medical or para medical personnel at any of the sub-centres. There is only one Auxiliary Nursing Midwife at each sub-centre. It is found by experience that it is very difficult for the doctor to visit even the sub-centres even once a week since there are 8 sub-centres functioning in each Primary Health Centre and he has to attend to work at the main centre also. When such is the position regarding the sub-centres, it is needless to say that the doctors are unable to visit the other villages in their jurisdiction except once in a way. Thus, the effective coverage of a Primary Health Centre is now reduced to a group of villages situated in the vicinity of the main centre, while the coverage of the sub-centre is largely nominal as there are practically no medical facilities available at the level of sub-centre. It was, therefore, proposed to strengthen these sub-centres by posting qualified medical personnel so as to ensure at least a minimum coverage of one doctor per 12,000 rural population at least by the end of the Fifth Plan as against the existing coverage of 34,100 persons per doctor in rural areas and 3,450 persons per doctor in urban areas.

The above proposals of the State Government were considered by a Working Group of the Planning Commission which recommended that only one Primary Health Centre for every four C. D. blocks should be upgraded into 30 bedded hospital. Since there are 324 C. D. blocks in the State, this would mean the upgrading of 81 Primary Health Centres only. Moreover, the Working Group did not approve the proposals to post a qualified doctor at each one of the sub-centres.

The Working Group made certain changes in the norms adopted for supply of medicines, construction of buildings etc. and finally recommended an outlay of Rs. 21.60 crores for medical and public health in the Minimum Needs Programme. Subsequently, the State furnished further proposals for strengthening the medical and health facilities in the tribal areas by establishing 12 new Primary Health Centres and 264 sub-centres and for construction of buildings for 289 Family Planning sub-centres which do not have them at present. The Working Group considered these proposals also and recommended a provision of Rs. 59 lakhs for establishing 4 Primary Health Centres and 10 additional sub-centres in the tribal blocks and for construction of buildings for the 289 Family Planning sub-centres.

In the revised allocations communicated by the Planning Commission, a provision of Rs. 21.60 crores only was indicated for medical and health in the Minimum Needs Programme. This obviously does not include the amount of Rs. 0.59 crores required for establishing 4 Primary Health Centres and 10 additional sub-centres in the tribal areas and the construction of buildings for 289 Family Planning sub-centres.

The programmes approved by the Working Group with the outlay of Rs. 21.60 crores are as follows :

Sl.No.	Programme	No. of units	Norm	Requirement of Funds (Rs. in lakhs)
1.	New Primary Health Centres		Rs. 2 lakhs non-recurring and Rs. 0.60 lakhs recurring per Primary Health Centre per year for 2 years	.. ..
2.	Backlog of construction of Primary Health Centres	199	Rs. 1 lakh per Primary Health Centre	.. 199.00
3.	Backlog of construction of staff quarters of Primary Health Centres	1,384	620 MO's @ Rs. 27,000 for each ; Class III 346 quarters. @ Rs. 18,000 per quarter ; Class III 1038 @ Rs. 16,000 per quarter, 692 Class IV @ Rs. 11,000 each	16.74 62.28 166.08 .. 76.12
			Total :	.. 321.22
4.	New Sub-centres	496	Rs. 15,000 non-recurring and Rs. 1,000 recurring for sub-centre per year for 2 years	.. 173.60
5.	Backlog of construction of sub-centres	1,245	Rs. 15,000 per sub-centre	.. 186.75
6.	Drugs for existing primary health centres	415	Difference between Rs. 12,000 and the present average expenditure x 5 years (Rs. 12,000-7,000) x 5 x 415	.. 103.75
7.	Drugs for existing sub-centres	3,014	Difference between Rs. 2,000 and the present average expenditure x 5 years (Rs. 2,000 x 3,014 x 5)	.. 301.40
8.	Upgradation of Primary Health Centres into 30 bedded rural hospitals	81	Upto a ceiling of Rs. 8.40 lakhs non-recurring and Rs. 1.20 lakhs recurring per year for 2 years	.. 874.80
			Total (1 to 8)	.. 2,160.52

Medical facilities in Tribal areas :

Out of the 24 Tribal Development Blocks in the State, 20 were having 1 Primary Health Centre each while the remaining 4 did not have either a Primary Health Centre or a sub-centre. In addition, there are 60 sub-centres in the above 20 blocks at the rate of 3 sub-centres in each block. Under the Minimum Needs Programme, as now approved by the Planning Commission, 6 Primary Health Centres will be upgraded into 30 bedded hospitals and 33 new additional sub-centres will be established in addition to the provision of construction of buildings for all the Primary Health Centres and sub-centres. The total outlay that would be spent in the 24 tribal development blocks on medical facilities will be of the order of Rs. 1.45 crores, the break up of which is as follows :

<i>Sl. No.</i>	<i>Item</i>	<i>No.</i>	<i>Norm (Rs. in lakhs)</i>	<i>Cost (Rs. in lakhs)</i>
1.	Backlog of construction of Primary Health Centres ..	20	1.00	20.00
2.	Backlog of construction of staff quarters			
	(1) M. O. quarters ..	40	0.27	10.80
	(2) Class HI ..	20	0.18	3.60
	(3) Class III ..	60	0.16	9.60
	(4) Class IV ..	40	0.11	4.40
3.	New sub-centres ..	33	0.15 (non-recurring)	4.95
			0.10 (recurring for 2 years).	6.60
4.	Backlog of construction of sub-centres ..	60	0.15	9.00
5.	Drugs for existing Primary Health Centres.	20	0.05 for 5 years	5.00
6.	Drugs for existing sub-centres	60	0.02 for 5 years.	6.00
7.	Upgradation of Primary Health Centre into 30 bedded hospital ..	6	8.40 (non-recurring)	50.40
			1.20 (recurring for 2 years).	14.40
	Total ..			144.75

If the Planning Commission finally approve the establishment of 4 Primary Health Centres in the 4 Tribal Development Blocks which are not having them at present and also agree to the establishment of 10 more sub-centres as approved by the Working Group, then the total outlay in the tribal development blocks on medical facilities in the Minimum Needs Programme would go upto Rs. 1.58 crores.

Nutrition :

For attacking the problem of mal-nutrition at its root, it is essential to take care of pregnant women, lactating mothers and children of weaker sections of population. This is a problem of vast dimensions. As against 34.67 lakhs of pregnant and lactating mothers and pre-school children belonging to weaker sections of society in the State, the present coverage is only 3.20 lakh children in primary classes at the end of Fourth Plan, only 9 lakh children will be covered by the Mid-day meals programme. In order to cover all expectant and nursing mothers and pre-school children belonging to the Scheduled Castes, Scheduled tribes and other weaker sections of the population living in drought prone and backward areas and also to cover all school going children of the weaker sections by Mid-day Meals Programme, the State formulated proposals with an outlay of about Rs. 119 crores, the break-up of which is indicated below :

Sl. No.	Programme	Coverage at the end of Fourth Plan (Lakhs)	Coverage at the end of Fifth Plan (Lakhs)	Outlay proposed under MNP (Rs.in crores)
1.	Supplemental feeding of pre-school children and expectant and Nursing mothers ..	3.23	34.67	38.38
2.	School children Mid-day Meals..	9.00	16.44	80.69
Total :			..	119.07

Considering the physical and financial constraints, the Planning Commission, however, approved a target of 6.50 lakh additional beneficiaries for supplemental feeding programme for expectant and nursing mothers and pre-school children and a target of 6.00 lakh additional children for Mid-day Meals Programme. An amount of Rs. 39.50 crores has been provided by the Planning Commission in the Minimum Needs Programme for the cost of additional coverage of

nutritional programmes in the State, the break-up of which is given below :

Programme	Level of beneficiaries expected at the end of Fourth Plan (Lakhs)	Level to be reached at the end of Fifth Plan (Lakhs)	Target of additional beneficiaries in Fifth Plan (Lakhs)	Outlay (Rs.in crores)
1. Supplemental feeding of pregnant and lactating mothers, and pre-school children.	3.20	9.70	6.50	19.50
2. School feeding ..	9.00	15.00	6.00	20.00
Total ..	12.20	24.70	12.50	39.50

The above outlays do not include the cost of administration and transportation which will have to be borne by the State Government in the Fifth Plan.

Home-sites for Landless Labour :

The total number of agricultural labour families in the State is 18.82 lakhs, out of which 14.12 lakhs families are in need of house-sites. Assuming that each family should be provided a developed plot of 200 sq. yards and that, taking into account the community services like roads, 15 families, can be accommodated on one acre of land, the total land required for providing house-sites to all the families in need of them was estimated at 94,112 acres. The average cost of land per acre varies from Rs. 2,500 in Adilabad district to Rs. 7,000 per acre in East and West Godavari districts. The total cost of acquisition of the land at the market prices prevailing in each district was estimated at Rs. 43.47 crores. The cost of development of 14.12 lakh house-sites at Rs. 150 per house-site was estimated at Rs. 21.18 crores. Thus the total cost of providing developed house-sites to all the landless agricultural labour in the State who are in need of them was estimated by the State to be of the order of Rs. 64.65 crores.

The Planning Commission, however, felt that the approach should be to thin out the existing Abadis and the surplus population alone rehoused on alternative sites. They have assumed that one-third of the houseless population could be rehoused at their existing sites and only the balance two-thirds i.e. 9 lakhs would need new sites.

According to the norms set by the Planning Commission, a house site of 100 sq. yards would be required for family and together with the area required for roads and common facilities, it would be possible to provide 28 sites on one acre. On this basis, the land requirement for 9.00 lakh sites was estimated at 32,000 acres. On the assumption that three-fourth of the land need be acquired and the balance one-fourth could be made available from land reforms, the Planning Commission estimated the cost of land at Rs. 12.80 crores as indicated below:

(Rs. in crores)		
(i)	24,000 acres of land at Rs. 5,000 an acre-average at normal market price	.. 12.00
(ii)	8,000 acres of land available through land reforms at Rs. 1,000 per acre average	.. 0.80
Total :		.. 12.80

For developing 9 lakh sites @ Rs. 150 per site, the requirement was estimated at another Rs. 13.5 crores. Thus, the total cost was estimated to be Rs. 26.3 crores.

However, taking into account the constraints of finance and the difficulties in implementation etc., the Planning Commission approved a programme to provide house-sites to 4.5 lakh families at a cost of Rs. 13 crores under the Minimum Needs Programme in the Fifth Plan period, thus fulfilling about 50 per cent of the total requirements.

Rural Roads :

In the earlier Plans, considerable attention was paid for the development of major roads and substantial progress achieved. Yet there are many deficiencies in the highway system itself not to speak of the net work of village roads. Earlier, road programmes were mainly intended to develop inter-district and major district roads, the emphasis being less on village roads. As a result, most of the villages are left without proper communication facilities. At the end of Fourth Plan, only 39 per cent of the total villages in the State will have all-weather roads and another 28 per cent will have fair-weather roads while the remaining 33 per cent villages will not have any roads at all and are connected only by footpaths and cart tracks.

¹ In Andhra Pradesh, the total road length was 54,231 Km. as on 1st April, 1969 which worked to 125 Km. per lakh of population as compared to the corresponding figure of 164 Km. for All-India. The road length per 1,000 sq. Km. of area was 197 Km. in the State as compared to about 270 Km for All-India. The roads in Andhra Pradesh are maintained by three agencies viz., Chief Engineer (R & B), Zilla Parishads and Panchayat Samithis. The road lengths maintained

by different agencies under different categories as on 1st April, 1969 was as follows :

(Figures in Kms.)

Category	Agency			
	C.E. (R & B)	Z.Ps.	P.Ss.	Total
1. National Highways ..	2,340	..	..	2,340
2. State Highways ..	5,966	..	..	5,966
3. Major Dist. roads ..	12,847	3,216	..	16,063
4. Other Dist. roads ..	1,042	9,597	..	10,639
5. Village roads ..	..	4,990	14,233	19,223
Total: ..	22,195	17,803	14,233	54,231

In 1970, the Planning Department conducted a village survey in which the information regarding the road facilities available for different villages in the State and their respective distances from the arterial roads connecting the important marketing, trading and administrative centres was collected. This data has been supplemented with the length of new rural roads laid and existing roads metalled under the Rural Road Works Programme during the subsequent years and the position likely to be as at the end of the Fourth Plan arrived at.

The total number of inhabited villages in the State are 26,714 of which 10,507 were connected by all-weather roads and 7,517 by fair-weather roads while 8,690 villages did not have any roads.

In the paper on Approach to the Fifth Plan, it was envisaged that the objective under the Minimum Needs Programme should be to provide all-weather roads by the end of the Fifth Plan period to all villages above a minimum population size of 1,500.

There were in all 8,136 villages of this category in the State, of which, 4,880 villages have already been connected by all-weather roads. Of the remaining, 2,259 villages have got fair-weather roads and 997 villages did not have any roads.

In order to connect all the villages with a population of 1,500 and above with fair - weather roads, the State Government proposed that an outlay of Rs. 52.73 crores should be provided in the minimum needs programme, the break up of which is as follows :

REGION	Roads to be metalled				Roads to be newly laid				Total outlay (Rs. crores)
	No. of villages	Road length (Km.)	Cost per 1 Km (Rs.)	Total cost (Rs. crores)	No. of villages	Road length (Km.)	Cost per 1 Km. (Rs.)	Total Cost (Rs. crores)	
Coastal Andhra	.. 690	3,157	30,000	9.48	294	1,778	55,000	9.78	19.26
Rayalaseema	.. 551	2,508	25,000	6.28	104	622	45,000	2.81	9.09
Telangana	.. 1,018	4,286	25,000	10.72	599	3,039	45,000	13.66	24.38
Total:	.. 2,259	9,951	..	26.48	997	5,439	..	26.25	52.73

The unit costs proposed above include the cost of earth work but not the cost of land and the metalling costs were worked out for a carriage way of 8 ft.

According to the Approach of the Planning Commission, however, the matalling of existing katcha roads to villages with a population of 1500 and above will not form a part of Minimum Needs Programme and that the earth work in case of new roads should not be included in the costs and that it should be contributed by the local people. They also desired that the carriage way of the roads should be 10 ft. and not 8 ft. as proposed by the State. They also expressed the view that with proper re-alignment of roads, the total road kilometreage that should be newly laid could be brought down by 15 per cent.

On the basis of the above considerations, the Planning Commission approved an outlay of Rs. 20.00 crores for laying new roads to villages with population of 1500 and above in the State, the details of which are given below :

Area	Road length (Km)	Average cost per km.	Outlay requirement (Rs. in crores)
		Rs.	
1. Black cotton soil areas ..	2000	45,000	9.00
2. Areas of high density rainfall..	650	45,000	2.93
3. Other areas ..	1974	38,000	7.50
Total ..	4624		19.43

Say Rs 20 crores.

Roads in Tribal Areas :

In the case of scarcely populated hilly and tribal areas, the objective under the Minimum Needs Programme is to provide all weather roads to a cluster of villages having population above a minimum size. The State Government, therefore, has drawn up detailed proposals for laying 2,407 Km. of new roads to clusters of villages in the 24 tribal development blocks, where the road net work is extremely inadequate and to metal 1754 Km. of existing katcha roads. The total cost of the programme was Rs. 24.74 crores, comprising Rs. 16.85 crores for new roads and Rs. 7.89 crores for metalling existing katcha roads. These proposals were considered by the Planning Commission who approved an outlay of Rs. 10 crores for tribal roads in the Minimum Needs Programme.

Rural Electrification:

One of the items included under the Minimum Needs Programme is the provision of electricity for rural areas such that the rural population covered by electrification by the end of Fifth Plan would be at least 30 to 40 percent in any State. In the case of Andhra Pradesh this percentage was already achieved. However, in the already electrified villages, there are several cases in which the main village has been electrified while the hamlets were not electrified because of the distance involved which makes their electrification unremunerative. The percentage of villages electrified therefore does not give a true picture of the population covered by electrification. This is especially so in the case of Harijanwadās which are generally located away from the main village and which are treated as hamlets to the main village. In order to ensure that the benefits of rural electrification reach the weaker sections of the population and especially the Harijans, the electrification of Harijan Hamlets will have to be taken up on a special footing. It was, therefore, proposed to include the electrification of Harijan Hamlets in the already electrified villages and in those villages which are proposed to be electrified in the Fifth Plan from State Plan Funds, as a part of Minimum Needs Programme.

By the end of Fourth Plan 10,600 villages are expected to be electrified in Andhra Pradesh. It is estimated that there will be 11,800 Harijanwadās in the above electrified villages. (in some villages there may be more than one Harijan wada). Along with these, 2,000 new Harijan colonies are coming up during Fourth Plan, through the agency of Harijan and Girijan Housing Corporation. These colonies also require electrification. Thus by the end of Fourth Plan, there may be about 13,800 Harijanwadās in already electrified villages. It is expected that by the end of Fourth Plan 7,500 Harijanwadās would have been electrified by the Electricity Board leaving a balance of 6,300 Harijanwadās and Harijan Housing Colonies to be electrified during the Fifth Plan. The Balance Harijanwadās to be electrified requiring assistance would, therefore, be 6,300.

During the Fourth Plan period, it is programmed to electrify 6,000 new villages and it is expected that there will be 8,000 Harijanwadās in these villages. Thus, the total number of Harijanwadās and Harijan Colonies which have to be electrified in the Fifth Plan, including the spill over from Fourth Plan, will be 14,300. Assuming that, on an average, it would cost Rs. 10,000 to electrify one Harijanwada, the total cost of the programme would work to Rs. 14.3 crores.

Another important segment which did not receive adequate benefits from the Rural Electrification programmes in the past is the tribal population. There are 24 Tribal development blocks in Andhra Pradesh covering an area of 21,136 sq. Kms. and 9.31 lakhs rural population. Out of 3,952 villages in the 24 tribal development blocks, only 77 or 1.9 percent have been electrified so far. It is essential to extend the benefits of rural electrification to these tribal development blocks which contain large concentration of the tribal population of the State, with a view to accelerating the pace of development of these areas. Out of 3,952 inhabited villages in these 24 blocks, 558 villages contain a tribal population of 200 or more each. Out of these, 481 villages

have yet to be electrified. It was, therefore, proposed by the State Government to take up the electrification of these villages under the Minimum Needs Programme at a cost of Rs. 9.6 crores.

The above proposals were considered by the Planning Commission. They pointed out that the Government of India were separately advancing funds through the Rural Electrification Corporation to the State Electricity Boards for electrification of Harijanwadads in the already electrified villages and that in the case of new villages, it had already been agreed in the Fifth Conference of the Chairmen of State Electricity Boards that while framing schemes for electrification of new villages, the electricity Boards would include invariably the programme for the electrification of Harijan Bastis adjacent to such villages. In the light of this position, the Planning Commission did not agree for the inclusion of Electrification of Harijanwadads in the Minimum Needs Programme.

In the case of tribal villages, however, the Planning Commission agreed for the electrification of the 481 tribal villages with a population of 200 or more at a unit cost of about Rs. 1 lakh per village, which did not include the cost of 33 KV lines. A provision of Rs. 5 crores is made in the Minimum Needs Programme for this purpose.

Environmental Improvement:

According to the 1971 population census, there are 224 towns and cities in the State accounting for a total population of 83.96 lakhs. The growth rate of urban population in the State has more than doubled from 15.76 percent in the period 1951-61 to 33.81 percent in 1961-71. The Class I Towns (towns with more than one lakh population) in the State have grown at a faster rate of nearly 52 per cent during the last two decades. One of the undesirable effects of rapid urbanisation is the growth and proliferation of slums, the ill effects of which are well known. Since the problem of slums assumed severe proportions in bigger towns, it was, therefore, proposed by the State Government to take up the slum clearance programmes in the 13 class I towns of the State.

The estimates of slum population in the various Class I towns are as follows :

Sl. No.	Towns	Total population 1971 (in lakhs)	Population in slums in lakhs (estimated)	House-holds in slums in thousands (estimated)
1.	Hyderebad	17.99	1.60	32
2.	Visakhapatnam	3.62	0.65	13
3.	Vijayawada	3.43	0.70	14
4.	Other towns with more than one lakh population (10 towns)	15.59	2.51	50
Total :		40.63	5.46	109

Thus, there are 1.09 lakhs estimated households in the slums of class I towns in the State. The cost of rehabilitating them was estimated at Rs. 73.50 crores on the basis of permissible ceiling cost fixed by Government of India for slum clearance schemes in the State. However, taking into account the physical and financial constraints in the implementation of the programme, it was proposed to rehabilitate all the slum dwellers in the biggest three towns only *viz.*, Hyderabad, Visakhapatnam and Vijayawada where the problem assumed severe proportions. In the rest of the class I towns, the rehabilitation of the households in slums was proposed to be staggered over a longer period. The State Government, therefore, proposed an outlay of Rs. 45 crores for rehabilitation of slum dwellers, the break-up of which is as follows:

Town	No. of households to be rehabilitated('000)	Cost of rehabilitation at Rs. 6,750 per household (Rs. in crores)
Visakhapatnam ..	13.0	8.78
Vijayawada ..	14.0	9.45
Hyderabad ..	3.2	21.60
Other Class I Towns (10)	7.4	5.00
Total :	66.4	44.83
		or
		(Rs. 45.00 crores.)

The Planning Commission, however, clarified that in the Minimum Needs Programme, the clearance of slums and construction of tenements were not covered. What was envisaged was environmental improvement in slum areas through the provision of drinking water drainage, roads and street lights etc. It was also envisaged that the programme should be confined to towns with a population of 3 lakhs or more. A provision of Rs. 5 crores has, therefore, been made by the Planning Commission for the State for slum improvement under the Minimum Needs Programme on the following basis:

In the three towns in the State with a population of more than 3 lakh each *viz.*, Hyderabad, Visakhapatnam and Vijayawada, out of the slum population of 3.16 lakhs, it was assumed that 2.4 lakhs or 75 per cent were living in areas where immediate improvement would be possible through environmental improvement. According to the schematic pattern approved by the Planning Commission, an amount of Rs. 3.6 crores at the rate of Rs. 150 per capita would be required towards environmental improvement covering provision of drinking water, drainage, roads, street lights etc. Adding another Rs. 1.8 crores for land acquisition of slums *i.e.*, one-third of the total amount, the total requirement was placed at Rs. 5.4 crores. Considering the outlays that would be incurred in the remaining period of the Fourth Plan and the conservative nature of the estimate of the slum population in Hyderabad, an amount of Rs. 5 crores has been provided under the Minimum Needs Programme.

8. FINANCIAL RESOURCES FOR FIFTH PLAN.

It has not been possible to make a firm or realistic estimate of the financial resources for the Fifth Five Year Plan in view of the uncertainty concerning the various factors involved. Nor has it been possible even to make any agreed assumptions in regard to the manner in which these resources could be estimated. The most important factor in this regard is that the report of the Sixth Finance Commission is as yet awaited. Even normally the report of the Finance Commission would be essential for making any projections in regard to the balances from current revenues. But this time the report would be even more important in view of the fact that one of the terms of reference of the Sixth Finance Commission bears upon the debt burden of the States. For Andhra Pradesh this is a particularly crucial issue since the pattern of investments in the past and the impact of the formula of Central assistance up to the Fourth Plan have been such as to make the debt liability of the State extremely large, so that the view that the Finance Commission would be taking in this regard would have a more than normal bearing upon the resources that would be available for the Plan.

These difficulties were all urged in the meeting of the Planning Secretaries of States held immediately after the meeting of the National Development Commission which approved the Approach to the Fifth Five Year Plan and it was decided at that meeting that the formulation of the Fifth Plan proposals should proceed on the assumption that the outlay on the Plan would be double that of the Fourth Plan. It was only later in June 1973 that the Planning Commission indicated that the draft proposals may be formulated for a total outlay of Rs. 1075 crores assuming additional resource mobilisation of Rs. 250 crores. The inappropriateness or even inequity of this assumption in the case of Andhra Pradesh because of the peculiar circumstances in which the outlay on the Fourth Plan happened to be fixed at a very low figure has been discussed elsewhere in this Draft.

The position in regard to the other two important factors relevant to the estimation of the financial resources, namely market borrowings and central assistance, is equally uncertain. Obviously, the market borrowings could not be projected by us merely on any past trend, nor has any basis for making projections in this regard been indicated. The position is similar in regard to Central assistance. It has been shown elsewhere in this draft that the formula for Central assistance evolved for the Fourth Plan period has not helped serve the purpose either of being a measure of equalisation between the backward and the more advanced States or of matching the outlays to the basic requirements of different States thus helping to reduce regional imbalances. While the outlays that can be anticipated under the Minimum Needs Programme have been finalised by the Planning Commission after discussion with various States, the principles on which the inter se allocations of these outlays between different States have been worked out or are proposed to be worked out have not been

indicated. Nor has it yet been clarified as to how the formula for Central assistance would be modified to take account of the requirements of this programme. Even if it is assumed that the allocations indicated for the Minimum Needs programme are based on an estimation of the requirements of various States given their existing level of achievement in the fields covered by this programme, the fact will still remain that the overall development of the State will depend upon the total developmental outlays during the Fifth Five-Year plan period and not merely on the outlays under the Minimum Needs Programme.

If, therefore, an equitable formula for the distribution of the Central assistance for the rest of the Plan is not worked out, the mere fact that the Minimum Needs programme itself has been worked out rationally or equitably will not ensure that the total impact of the outlays in the Fifth Five-Year Plan will have the desired effect. What is relevant ultimately for the development of a State is the total outlay on its Plan and unless it is ensured that this outlay bears some relation to the needs of the State, even the fact that the formula for Central assistance gives some weightage for backwardness will not help serve the purpose of reducing regional imbalances. These factors would have to be taken into account in taking a decision in regard to market borrowings, loans from the L. I. C. etc., as well as in regard to the pattern of Central assistance for different States. In the case of Andhra Pradesh, it has been shown in another chapter that even with the order of outlay envisaged in these Draft proposals, i.e., Rs. 1277 crores, the per capita income of Andhra Pradesh would continue to remain below the All-India average at the end of the Plan period, which would only go to show that if at least this order of outlay is not made feasible the gap between the all-India average and the per capita income of Andhra Pradesh would further widen thus increasing the regional imbalances.

While indicating that the outlay in the Draft Fifth Plan Proposals for Andhra Pradesh should be Rs. 1,075 crores the Planning Commission have also stated that the additional resource mobilisation by Andhra Pradesh should be Rs. 250 crores. It would appear that this target of additional resources mobilisation is the highest set for any State. The additional resource mobilisation for the country as a whole has been estimated at Rs. 6,615 crores during the Fifth Plan period comprising of Rs. 4,150 crores to be undertaken by the Centre and Rs. 2,465 crores to be done by the States. The Planning Commission have fixed the target of additional resources mobilisation by Andhra Pradesh at Rs. 250 crores which works out to about 10 per cent of the total resource mobilisation by States. The State income in 1969-70 was Rs. 2,294 crores while the national income in that year was Rs. 31,174 crores. The share of the State income to the national income would thus work out to 7.3 per cent, while the percentage of the state to All India in terms of its population comes to 7.9 per cent. Thus it will be seen that as against the state's share of 7.3 per cent in the national income and the state's population constituting only 7.9 per cent of the nation's population, the target set for achieving additional resource mobilisation in the Fifth Plan has been fixed as high as at 10 per cent. It is not clear on what basis such a high target has been fixed.

It is not as if the effort of Andhra Pradesh in regard to additional resource mobilisation was poor during the Fourth Plan period. Actually in terms of per capita additional taxation Andhra Pradesh was second highest in the whole country, the additional taxation, per capital being Rs. 30.37 against Rs. 19.81 for all States, the highest in the country being Punjab with Rs. 36.69. The per capita State taxes as a percentage of per capita State income comes to 4.7 percent in the case of Andhra Pradesh as against 4.3 per centage for All India. A statement showing the per capita State taxes among the States, the per capita State income and per capita tax as percentage of per capita income is given in Annexure. Thus it will be seen that Andhra Pradesh has been putting in the requisite effort for additional resource mobilisation, and it is against this background that the high target now suggested has to be considered.

Additional resource mobilisation of Rs. 250 crores would mean on an average a tax effort of Rs. 50 crores in a year. This would mean that the additional taxation would represent about 33% of the total existing revenue from State taxes. It has to be considered whether an effort of this order would be feasible on any count. The magnitude of the additional resource mobilisation effort required could be judged with reference to per capita taxes also. The target envisaged for additional mobilisation by all the States is Rs. 2,465 crores which works out to a per capita additional taxation of Rs. 45. As against this the per capita additional taxation for Andhra Pradesh works out to Rs. 57. The target even for an advanced state like Maharashtra is also Rs. 250 crores which represents a per capita additional tax effort of Rs. 49. As a percentage of State income the target for Andhra Pradesh represents 10.4, whereas for Maharashtra it is only 6.6. The economy of advanced States being more diversified their resources are more buoyant. The target for additional resource mobilisation has therefore to be fixed taking into account the level of development of different States and the existing level of taxation as a percentage of State income.

As a result of the increase in step up of the per capita Plan outlays from the Fourth Plan to the Draft Fifth Plan being low for Andhra Pradesh and the step up in the additional resources mobilisation effort being so high, the percentage of additional resource to the total State Plan outlay comes to 25 for Andhra Pradesh which is perhaps the highest for all the States, the corresponding percentage for all the States put together being about 17 per cent. It is, therefore, difficult to see how the target for a backward and purely agriculture-based State like Andhra Pradesh could have been fixed so high as Rs. 250 crores.

Statement

ANNEXURE

Statement showing State Taxes and Per Capita Income.

State	STATE TAXES (1969-70)		Per Capita State Income.	Per Capita State Taxes as % of Capita State Income.	
	Total (Rs. in crores)	Per Capita.			
(1)	(2)	(3)	(4)	(5)	(6)
1. Andhra Pradesh	108.50	25.4	544	4.7
2. Assam	28.48	18.6	586	3.2
3. Bihar	78.59	13.8	402	3.4
4. Gujarat	92.94	35.7	740	4.8
5. Haryana	37.85	38.3	902	4.2
6. Jammu & Kashmir	6.70	16.7	503	3.3
7. Kerala	60.79	29.0	643	4.5
8. Madhya Pradesh	79.92	20.0	495	4.0
9. Maharashtra	216.54	44.0	736	6.0
10. Mysore	88.29	30.6	571	5.3
11. Orissa	28.41	13.3	545	2.4
12. Punjab	75.83	52.4	1,002	5.2
13. Rajasthan	53.79	20.9	478	4.4
14. Tamil Nadu	132.32	33.9	591	5.7
15. Uttar Pradesh	141.41	15.8	497	3.1
16. West Bengal	124.94	28.3	706	4.0
17. Nagaland
All States ..		1,355.51	25.5	589	4.3

Source: 1. Draft Fifth Plan, A. P. Review of Development.

2. Per Capita income estimates of the C. S. O.

3. 1969-70 has been used because comparable figures for per capita incomes of different States are available for that year.

Part II—Sectoral Programmes

1. AGRICULTURE

In Andhra Pradesh, about 70% of the people are dependent on agriculture and this percentage will continue to be high in spite of industrialisation in the immediate future. As pointed out in the National Approach, the main attack on poverty will have to be on rural poverty. If, therefore, the standard of living of vast majority of our people is to be raised, the basic priority in our developmental programmes will still have to be accorded to agriculture. Programmes intended to increase agricultural production and productivity will help achieve the basic objectives of the Fifth Plan both directly by raising the level of incomes of the weaker sections who are dependent on agriculture and who are at present mostly thinly employed and indirectly by providing larger employment opportunities through irrigated agriculture, technological improvements and such programmes as Soil Conservation, Area Development and Small Farmers Development Agency, Marginal Farmers and Agricultural Labourers Development Agency, etc.

Andhra Pradesh is placed in a peculiar position in as much as on the one hand, it has a high percentage of irrigation compared to the All India average, while, on the other, it has large areas that are drought prone. The percentage of irrigation for the State as a whole is 30 against 21 for All India, while in the Coastal region it goes upto 49. On the other hand, 47.5% of the area of the State has been identified as being drought prone and the population in those areas represents 34.7 of the total population of the State. In both these cases however, the problem is one of applying technology so as to be able to make the best use of the available resource potential. An Agricultural Programme based on strategies most suitable to the diverse circumstances in the different regions would, therefore, have to be evolved.

The major role for development in the field of Agriculture is assigned to Director of Agriculture. The Agricultural University and Agro-Industries Corporation, in the State sector, play important supporting roles. These are discussed in this chapter though a proper appreciation of the total developmental effort in this regard requires taking into account related sectors particularly Irrigation, Ayacut Development, Rural Roads, Marketing and Storage, Power, Community Development and Co-operative Institutions,

[Statement.]

DIRECTOR OF AGRICULTURE

REVIEW

Agricultural Production :

The additional production potential created during the first 4 years of Fourth Plan and the levels of achievement likely to be reached at the end of the Fourth Plan period are as follows :

Sl. No.	Name of Commodity	Unit	1969-70		1970-71		1971-72		1972-73		1973-74
			Target	Achievement.	Target	Achievement.	Target	Achievement.	Target	Achievement.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1.	Food grains ..	.. '000 tonnes	1019.37	885.78	888.11	713.98	1820.06	947.26	1773.32	N.A.	7500.00
2.	Oilseeds ..	.. ,,	66.75	68.92	131.00	139.00	65.05	52.50	68.05	N.A.	1380.00
3.	Sugarcane (cane) ..	.. ,,	401.00	418.00	401.83	539.00	416.11	494.00	416.11	N.A.	11600.00
4.	Cotton (lint) ..	.. '000 bales	14.00	14.38	14.00	14.00	20.00	88.58	20.00	N.A.	270.00

As will be seen from the statement, the production potential targets in respect of oil-seeds (except during 1971-72), sugarcane and cotton have been achieved whereas there is a short-fall in case of food grains production which has been mainly due to shortfalls in achievements (for various reasons) under the High Yielding Variety Programme.

607-1*

The financial outlays and anticipated expenditure for Fourth Plan under Agriculture Production Programmes (Director of Agriculture) is as follows :

(Rs. in Lakhs)

<i>Programme.</i>	<i>Fourth Plan Approved outlay.</i>	<i>Likely expenditure during Fourth Plan.</i>
(1)	(2)	(3)
Improved Seed Programme	40.64	38.57
Manures and Fertilizers	33.13	28.56
Plant Protection	71.92	56.00
Agricultural implements and machinery (including Agro-Industries Corporation)	2.12	2.00
Agricultural Statistics	1.86	1.70
High-yielding Varieties Programme Intension Agriculture District Programme, Multiple cropping and other intensive cultivation programmes	36.68	32.87
Commercial Crops	35.74	34.31
Others	55.85	48.06
Total :	277.89	242.07

OBJECTIVES :

The basic objective is to increase agricultural production and productivity while at the same time ensuring that income disparities in the rural economy do not increase by paying special attention to the problems of the weaker sections and those thinly employed such as Small and Marginal Farmers, etc., and by encouraging employment intensive techniques and introducing special employment programmes.

The detailed objectives of this sector in the Fifth Plan could be broadly summed up as follows:—

(1) to increase agricultural production and productivity special attention being paid to the problems of the small and marginal farmers, and tribal areas; and

(2) to concentrate on crop production programmes in a selective way :

- (a) to maximise production of crops like Rice and Jowar under which there are large areas in the State and where suitable High Yielding Varieties are now available;
- (b) to increase pulses production by bringing it into the crop rotation in irrigated areas and as an inter-crop;
- (c) to develop commercial crops like Cotton, Tobacco and Sugarcane in selected areas with assured marketing and processing facilities;
- (d) to lay stress on better water management and marketing and for this purpose co-ordinate closely with the developmental work of the other departments concerned, particularly, of the Irrigation Department and the Department of Marketing;
- (e) it is absolutely essential to emphasise the dry farming technology particularly, in drought areas since areas likely to be irrigated in the near future will serve only a part of area;
- (f) it is necessary to utilise departmental funds as nucleus money to utilise funds from institutional financing agencies like Nationalised Banks and Land Mortgage Banks to the maximum extent possible by drawing up viable schemes by better co-ordination, etc.

STRATEGY :

In the light of a critical review of the schemes under implementation and objectives set forth for Fifth Plan, it is necessary to re-orient the strategies and pattern of schemes. The broad features of new strategy involving substantial changes in nature and pattern of schemes are as follows :

- (a) in close co-ordination with other departments, schemes are designed to develop ayacut in areas where irrigation potential is created or likely to be created. For this purpose, areas are being identified in advance of the Fifth Plan, and financial and operational commitments included in plans of the concerned departments;
- (b) it is proposed to adopt an area approach in Planning for agriculture ensuring integrated services through select centres and linking up with inputs, extension services, marketing, storage, etc. though the details will be worked out at operational stage;

- (c) special schemes are to be implemented to provide productive employment to unemployed agricultural graduates ;
- (d) to pay special attention to these problems by persons assigned land by Government and provide special assistance for this purpose where necessary ;
- (e) the strategy also consists of preparing contingency plans to meet situations like late rainfall, pest-attack, etc., and gearing up procedures and organisation to meet such situations ;
- (f) in implementing agricultural developmental schemes it is proposed to do away with subsidy to individual ryots as far as possible, except to the extent necessary for Small Farmers, Marginal Farmers and Scheduled Castes and Scheduled Tribes, assignees of Government lands. Subsidies will be considered more for area approach demonstrations or trials, innovative items and in bulk, wherever needed, for specific operations like over all marketing subsidy in selected pilot development areas etc.
- (g) the role of Agriculture Department in distributing inputs particularly, fertilizers and pesticides would be reduced but institutions like Andhra Pradesh State Agro-Industries Corporation and Co-operatives would be assisted to open up new areas and arrange distribution ;
- (h) as regards seeds, the Agriculture Department will implement schemes to associate seed producing agencies with seed distribution in the State including in interior areas and give up progressively the departmental involvement in the subject. For this purpose, an annual estimate of seed requirements would be arrived at in consultation with all the concerned and a procedure worked out whereby in return for such agencies opening up new areas or marketing large quantities of seeds, the Department would either share the loss due to unsold stock, bear a portion of the carry over interest charges or take over a part of unsold stocks at the end of the year ;
- (i) in regard to Plant Protection, it is proposed to implement specific schemes designed to induct agricultural graduates, progressive farmers or the pesticides-cum-equipment dealers into Custom Plant Protection Service on hire to such groups by preferential treatment to farmers covered by such schemes in getting credit from departmental funds. The subsidy inherent in the present system of giving machinery on hire on nominal hire charges to individual ryots will be discontinued as it is distorting commercial costs and preventing non-Government agencies from entering the field of custom plant protection ;
- (j) the requirements of short term and long term credit for the Fifth Plan would be of a larger order than now. However the Co-operative Credit structure is weak in many areas and has to be strengthened. Viability programmes will

be implemented wherever necessary. The existing legal hurdles have to be removed. The overdues are very high and a committee has been appointed to suggest measures in this regard. Administrative arrangements to co-ordinate credit programmes with commercial banks will be strengthened ;

- (k) it is proposed to design schemes on the pattern of SFDA for other areas particularly to help develop backward areas. These schemes may be different wherever necessary in frame work from the schemes in operation at present ;
- (l) a central training institute is to be established to impart training to its staff in the improved extension and technical skills required in the present circumstances. The Plan of the department will include schemes to streamline and strengthen the quality and, where essential, the number of staff at various levels ;
- (m) it is proposed to identify seed farms in all important tracts of the State, review the physical and staff facilities available and selectively develop in all respects the ones selected to serve as seed farms, demonstration farms for farmers and as training farms for staff. Farmers training centres should be located on such farms wherever feasible.

PROGRAMME DETAILS

The Programme details are derived from the objectives and strategy mentioned above. Details of schemes have to be worked out in the light of detailed plan exercises proposed. However, the more important new schemes proposed are in terms of :—

- (1) special schemes to help small and marginal farmers, including assistance to landless poor assigned land by Government ;
- (2) satellite schemes around existing Plan and Centrally Sponsored Schemes to spread the benefits to surrounding areas e.g., Dryland Projects, Multiple Cropping Projects ;
- (3) custom Service Plant Protection Schemes ;
- (4) scheme to improve seed production and distribution by all seed producing agencies, including provision to spread over possible losses, and to subsidise losses wherever essential ;
- (5) special schemes for Integrated Ayacut Development in command areas of major irrigation and selected minor irrigation schemes ;
- (6) integrated water management schemes, etc.,
- (7) schemes of demonstrations and trials to change cropping patterns in selected areas, including black soil areas.

The programme-wise financial allocations are as follows:—

(Rs. in lakhs)

<i>Programme.</i>	<i>Likely ex- penditure during Fourth Plan.</i>	<i>Fifth Plan Out- lay.</i>
(1)	(2)	(3)
Extension Training and Farmers' Education .. .. .	.. .. .	60.00
Improved Seed Programme	38.57	75.00
Manures and Fertilizers	28.56	49.00
Plant Protection	56.00	100.00
Agricultural implements and machinery including Agro-Industries Corporation .. .. .	.. .. .	2.00 ..
Agricultural Statistics .. .. .	.. .. .	1.70 5.00
H.V.P.; I.A.D.P., Multiple cropping and other intensive cultivation programmes .. .. .	.. .. .	32.87 72.00
Commercial Corps .. .. .	.. .. .	34.31 54.00
Others .. .. .	.. .. .	48.06 80.00
Total :	242.07	495.00

Extension Training and Farmers, Education :

At present this is only a Centrally Sponsored Scheme for training Farmers in 7 centres in Andhra Pradesh. It is expected that the scheme will continue to be a centrally sponsored scheme and will be further extended to new centres in the Fifth Plan by Government of India.

The proposal of the Department is to impart training to the departmental extension staff and also to farmers, in districts not served by existing schemes.

The non-recurring expenditure will be on creation of training facilities like semi-permanent structures and hostels, acquisition of and for cultivation, audio-visual equipment. The recurring expenditure will be on the training staff, allowances to visiting lecturers, cultivation expenses of the farms etc.

The intention is to have common facilities for training of farmers and Extension Officers, though the training will be imparted separately. The training will be field oriented with reference to crops grown in land attached to the Training Centres. The main centre for the State will be the State Institute for Plant Protection and Pest Surveillance where already nucleus staff exists for training departmental staff in plant protection. It is proposed to extend this at head-quarters to give more intensive training to Extension Officers in other disciplines also.

In the case of farmers, it is proposed to have training centres in the first instance in irrigation project areas like Pochampad, Nagarjunasagar etc. so that the training programme keeps step with ayacut development.

Improved Seed Programme :

The outlay on this item will be in continuation of the existing schemes under this head of development, as also intensification of effort in certified seed production under proper supervision.

It is also proposed to provide funds for meeting possible losses in handling of seed, including losses in handling of reserve stock of seed which will be built up for meeting emergencies like drought and flood. The actual framework will be decided upon after the various recommendations made by the meetings sponsored by Government of India on the subject of production and distribution of seed crystallise. It is proposed tentatively to consider whether seed production and distribution may not be made a function of a separate seed Corporation at the State level or by the Andhra Pradesh State Agro-Industries Corporation. In such a case the contribution to the Corporation will have to be decided and also some risk cover given to the Corporation for undertaking activities on behalf of the Department.

In addition to this, it is proposed to take up "Anticipatory seed multiplication" of promising pre-release varieties from Research Institutions and in case some of the varieties do not ultimately prove popular, they will have to be sold as grain. Possible loss on this account is also proposed to be met out of this provision if necessary.

Any other subsidies given on seeds during the Fifth Plan period may also be met out of this provision if necessary.

Manures and Fertilisers :

The schemes contemplate intensification of the activities of the Department in this direction. Apart from strengthening of Soil Testing Laboratories in various respects, including on the aspect of crop nutrient analysis and recommendations, it is proposed to go in

for various demonstrations and trials at the field level of an adaptive research nature, so that practical recommendations can be made suited to each tract for fertiliser application. This is particularly required in dry land areas and in the case of irrigated crops in newly reclaimed land under irrigation projects.

It is proposed to tap this provision also to the extent necessary for foliar spraying of crops with fertilisers, as also application of gypsum etc. to groundnut.

It is also proposed to go in for area development trials and demonstrations in specific saline and alkali areas under this provision to correct such soil conditions, with other ancillary works like better drainage, flushing of fields with water, growing of tolerant crops etc.

Plant Protection :

The scheme contemplates intensification of the efforts of the Department already undertaken in Fourth Plan. In particular it is proposed to strengthen the machinery for implementation of the Insecticides Act. It is also proposed to make substantial provision for community plant protection service by encouraging entrepreneurs, progressive farmers or unemployed graduates to take up such services, along with any other supplies and service activities in their area.

It is proposed tentatively to make available on proper security minimum number of economic units of plant protection machinery to such groups, earmark areas of operation for them (which would include withdrawal of departmental service from such areas) and canvassing of applications on their behalf from farmers including short term loan support to farmers from departmental provision for pesticides purchase.

It is also proposed to strengthen the State Institute for Plant Protection and Pest Surveillance and the training facilities available therein. In particular training will have to be imparted to the Panchayat Samithi and Zilla Parishad staff, as they are having large number of plant protection equipment.

Agricultural Implements :

It is not proposed to continue the scheme in the Fifth Plan as this is mainly the responsibility of the Andhra Pradesh State Agro-Industries Corporation.

Agricultural Statistics :

The existing Planning and Statistical Wing in the Department is very weak and requires to be strengthened. Unless this is done it is found difficult to have basic data which is badly required for drafting schemes of area development or for improvement of various crops. In particular the need is felt for such proper statistical support when

schemes have to be submitted to outside organisations, Foundations World Bank etc. The provision is proposed to be tapped for additional staff, upgrading existing staff and training. It is therefore proposed to develop the existing unit into a full pledged Planning & Statistical wing to cope up with the increased volume of work.

High Yielding Varieties Programme, Intensive Agricultural District Programme etc.

It is proposed to strengthen the on-going programmes under this head. These are mainly crop production programmes. It is proposed to be selective in approach during Fifth Plan and to identify areas for concentrated effort, taking into account agro-climatic conditions, the infra-structural institutional facilities available and the receptivity of the farmers in various areas. There will be minimum additional staff appointed under this head with specific responsibilities under the direct control of the Department, instead of working through the Panchayat Samithis as at present, resulting in divided responsibility.

Minimum necessary provision will be made under these programmes for subsidy support, creation of facilities in interior areas for storage of inputs, innovative demonstrations and trails etc., including publicity support to the programmes on a big scale.

Commercial Crops:

It is proposed to continue the efforts of the Department in the direction, over and above the Centrally Sponsored provision made available by Government of India under this Sector. The main concentration will be on groundnut, castor and cotton. The strategy for improvement in production will be to concentrate on the more assured rainfall areas and in the irrigated areas particularly in rabi. In the case of groundnut and cotton such areas have already been identified and work is in progress.

It is also proposed to continue work on Sunflower under this programme, to the extent necessary over and above the Centrally Sponsored Programme.

Others:

This is a lumpsum provision kept as a buffer for any programmes to be taken up at short notice, or on the basis of new developments. For instance it may be necessary, in the case World Bank or some other institutional support to certain schemes, for the State Department to show some matching provision. It is a common experience that, when the Plan is rigidly framed, it is found very difficult to make such adjustments.

Over and above this it is also proposed to tap this provision as and when need arises for special schemes taken up in specified areas for the more dis-advantaged section of the farming community.

Agricultural Production:

Taking into account a total view of the natural growth, efforts in agriculture and related sectors particularly irrigation and induced increases in production, it is possible to make projections of production of crops.

Rice:

In Rice the prospects of Rabi for increased production are very bright. Already a bulk of the Rabi area in the State is covered by High Yielding Varieties. The productivity in Rabi is more than in Kharif. The yield from about 8 lakh hectares in Rabi is about 12.5 lakhs tonnes rice. This can be increased over the course of the Fifth Plan to 18 lakh tonnes rice.

The rice production in Kharif can be increased from the present about 30 lakh tonnes to 38 lakh tonnes over the course of Fifth Plan. Thus net additional total increased production from the existing area at the end of the Fifth Plan would be 13.5 lakh tonnes rice.

Jowar

In regard to Jowar it is feasible to increase production from 12 lakh tonnes at present to 16 lakh tonnes with improved varieties and agronomic practices.

In regard to total foodgrains, production could be increased from the base figure for Fifth Plan of 75 lakhs tonnes to about 93.50 lakh tonnes, to register about 4.5% per annum growth during the Fifth Plan period. Similarly for other commercial crops the level of production to be raised is detailed below.

Sugarcane:

During Fifth Plan, it is tentatively proposed to concentrate the departmental efforts over 1.48 lakh hectares projecting the level of production from 116 lakh tonnes to 140 lakh tonnes of cane. The average yield per hectare is also proposed to be increased from 91.41 tonnes to 100.00 tonnes per hectare by the end of Fifth Plan.

Cotton:

There are great potentialities of extending the area under cotton during Fifth Plan. The area of irrigated cotton in rice fallows is likely to increase from 0.60 lakh hectares at the end of Fourth Plan to 1.00 lakh hectares by the end of Fifth Plan. There is also possibility of further developing extra long staple cotton under Nagarjunasagar Project area, specially in Guntur, where it can go up from 0.50 lakh hectares in 1972-73 to 1.60 lakh hectares. Likewise per hectare yields can be increased in rainfed cotton districts of Kurnool and Adilabad. The cotton production is estimated to be increased from 270 thousand bales to 848 thousand bales.

Oilseeds:

It is anticipated to achieve the additional production during Fourth Plan of 3.25 lakh tonnes under Oilseeds. Therefore the base level production of Oilseeds will be 13.76 or 13.80 lakh tonnes for Fifth Plan.

Groundnut:

At present irrigated groundnut is Grown in rice fallows under irrigated conditions and also the project areas like Nagarjunasagar Project and Tungabhadra Project in about 2 lakh hectares. There is further scope of extending groundnut cultivation in new area of 2.35 lakh hectares during Fifth Plan, especially under project areas. Bulk of the increase will come from irrigated groundnut areas. Additional production under groundnut during the Fifth Five Year Plan is anticipated to be 2.75 lakh tonnes.

Castor:

Next to groundnut, castor occupies large area under cultivation. During Fourth Plan, a new variety Aruna Castor has been introduced. It is estimated that by the end of Fourth Plan an area of about 1 lakh hectares will be covered. During Fifth Plan, it may be possible to saturate the entire area under castor with "Aruna" variety. By adopting a package approach on "Aruna" popularisation it is possible to increase the per acre yield from $1\frac{1}{2}$ quintal to 2 quintals. An additional production under castor during the Fifth Plan is estimated to be 0.75 lakh tonnes.

Sesamum :

Sesamum for the present has no suitable high yielding variety for extending its cultivation over large area. With the existing available varieties efforts to popularise sesamum crop in rice fallows and also a preceding crop to tobacco in black soil areas in Krishna and Guntur districts are being made. There is already an area of 30,000 hectares under sesamum which is grown as a preceding crop to tobacco and it is possible to extend its area to 60,000 hectares during Fifth Plan. An additional production of 0.20 lakh tonnes is estimated during the Fifth Plan.

The total oilseed production is estimated to be increased from 13.80 lakh tonnes to 17.50 lakh tonnes.

INTER-SECTORAL/DEPARTMENTAL LINKAGES :

A large number of agencies are operating in the sphere of agricultural development, often with insufficient co-ordination with one another. A close co-ordination in regard to Agro-Industries Corporation, Land Mortgage Banks, Departments of Irrigation, Electricity Board etc., is needed. This is proposed to be ensured from the stage of project formulation itself with Directorate of Agriculture playing

a general role. The role of State Department of Agriculture is proposed to be redefined on the following lines :

(i) In tracts where there is good infrastructure for inputs and where production and productivity are high, or in areas with low priority crops, the department will maintain only a supervisory role maintain minimum staff; and

(ii) In cases where research information, and support shows promise it will be the responsibility of the department to translate the promise into action. For this purpose, feasibility and profitability have to be assessed, institutional financing agencies attracted and in brief the project made "bankable". For this purpose the department should concentrate staff and attention in such areas.

(iii) In areas where the infrastructure is weak (as in tribal areas), the department will have to increase its staff and attention as a long term measure though immediate pay off may be low.

(iv) The department will have to maintain staff separate from extension staff all over the State, as a separate wing to look after regulatory and quality control work on seeds, fertilizers and pesticides.

ROLE OF INSTITUTIONAL BODIES :

It is realised that the programme of agricultural development involves the active participation of and effective co-ordination between a number of institutions and departments. Functional linkage, timely action co-ordinating the efforts and spatial integration are the three important considerations for effective programming. These are proposed to be ensured by appreciating the relative roles already demarcated, co-ordinating efforts at the stage of operations—including detailed scheme formulations, and adopting the area planning approach already indicated by Planning Department. Some of the more important agencies relevant in this regard are Irrigation, Storage and Marketing Departments and Power Board on the infrastructure side; Co-operatives for shortterm and long term credit and Agro-Industries Corporation and Agro-Service Centres for supply of inputs and other agricultural services.

ADMINISTRATIVE AND ORGANISATIONAL ISSUES :

The Department of Agriculture has to reorient its structure, procedure and functioning in the light of challenges that are likely to be thrown in Fifth Plan. Some of the important directions of administrative change in the department are presented below :

The staff has to improve in quality and undergo vigorous and regular training. The present type of general purpose technical officer in the department has to evolve into an operational specialist with a sufficient ground not only in research but also in the related fields of overall agricultural development and with a close working knowledge of the other departments like co-operation, Andhra Pradesh State Agro-Industries Corporation, etc. He will have to evolve into an

agricultural managerial and operational specialists. For this purpose a central training institute has to be set up with necessary staff and equipment. At the officer's level, programme formulation and execution should be a special aspect of the training to be imparted. At the staff level, the emphasis should be on scientific methods of extension and communication and on improving managerial efficiency in operation of agricultural programmes. The department has to be strengthened by appointment of experts on its staff to function as operational specialist e. g., Entomologist and Pathologist, Water-use Specialist, etc., to go round, and give authoritative advice at field level.

The department may attempt progressively giving up its present functions of supplies of inputs. It should essentially be a service department, and retain supplies work only in areas where other institutions are not operating, or to the extent it is essential that inputs supply should follow extension advice. The major responsibility for inputs may be shouldered by seed producing concerns, fertilizers and pesticides manufacturers, co-operatives and Andhra Pradesh State Agro-Industries Corporation.

The Plant Protection Wing of the Department requires re-organisation. The present practice of the Department maintaining Plant Protection Equipment, and some staff as Plant Protection Squads, has to be given up progressively. The result is that the farmers tend to rely heavily on the insufficient machinery of the Department. The hiring of Plant Protection Equipment on concessional hire is also distorting the Plant Protection costs and has to be given up. The Department may in future step in only in the case of epidemics, or confine its Plant Protection activity in the present form only to backward areas. The equipment of the department may be hired out at commercial rates to the Agro-Industries Corporation on agency basis, or to schemes involving customs Plant Protection served by agricultural graduates and artisans.

The present seeds procurement and distribution practices of the Department require modification. The Department may discontinue procurement directly from the farmers. But it should estimate requirements of farmers and encourage seed producing agencies to sell to farmers. Practical examples would be to allow such sales through departmental depots on consignment basis, approve sale prices for different centres, or link up departmental short term credit for sale of such seed. The Department should persuade seed producing firms to open outlets in interior areas, by linking its support to such action by them. The Department may however underwrite a portion of any loss sustained by the seed firms, due to over-estimation of requirement or other valid reasons. A levy may be included in sale price of seed by the seed manufacturers to be constituted into a Risk Fund to meet losses. The Department may however keep a buffer stock of seed for emergent use, over the above normal requirements. This may even be farmed out to the seed firms, and the department only pay overheads on this quantity for retention beyond an agreed period of, say, one year. The costs could be shared by more than one State Government, as rarely will the requirement of seed arise in all States at the same time in an emergency like drought. This will encourage

seed firms to open up interior areas, ensure competition, disassociate the Department from non-extension work, release commitment of Government funds to seeds procurement, and improve seed availability in an emergency, as there will now be an institutionalised arrangement for buffer seed stock.

The Department may progressively give up subsidy in its schemes except for the weaker sections such as small or marginal farmers and Scheduled-Castes and Scheduled Tribes, assignees of Government land, etc. In all other cases, subsidies should be restricted to items requiring community action by farmers, or for really innovative schemes. Such subsidies may be for community schemes like custom service tillage by tractors (say for converting the black cotton soil farmer from rabi to kharif crop; community paddy nurseries in Nagarjunasagar Project ayacut; mass conversion from tobacco to jowar in Guntur district) etc. Subsidy may be necessary in some areas of operation on bulk operations like providing for differentials in pricing, etc., of non-traditional crops raised by farmers in some areas. The coastal delta could grow jowar with high yields. But the produce is not locally consumed and can only be procured by Government and moved out, meeting overhead costs from out of the subsidy. Thus, it will be necessary to envisage subsidising large-scale operations, wherever necessitated in the national interest while giving up general subsidy to individual farmers. Such subsidisation is an inherent part of agricultural policy in many countries. In place of subsidy for normal schemes, a procedure has to be evolved whereby the farmer will not get a cash subsidy but will be indemnified for any loss on account of taking up the practice recommended by the Department. This will be verified in each case and only in fit cases, the loss indemnified.

Every effort has to be made to ensure that there is sufficient linkage between departmental schemes and the schemes sanctioned by institutional financing agencies, like Agricultural Refinance Corporation, Nationalised Banks etc. Thus, for any such schemes, sanction of special departmental staff may be useful; staff cost cannot be included in Agricultural Refinance Corporation Schemes, though it is admittedly essential. A regular scale of staff or link-up like this may have to be designed and general approval of government obtained. Since it is only institutional financing agencies that may have to find the bulk of the developmental funds required in future, as Government funds are insufficient. Thus, any such investment by the Department will help to attract more funds from such agencies to the State.

The Approach Paper has made a mention of the need to set up and improve seed farms in each district. This is a very important need, as seed farms not only produce seed, but act as training ground for staff, and as a proving ground for adaptive research work. There are some districts now without even one farm. These have to be provided for. Procedural changes for executing works, by creating a separate engineering cell, need to be explored.

CENTRAL SECTOR SCHEMES :

The existing Centrally Sponsored Schemes for commercial crops such as Cotton, Oilseeds, (Groundnut, Castor, Sunflower and Sesamum etc.), Tobacco, will be continued during the Fifth Plan as there are great potentialities of extending the areas under the above crops.

Andhra Pradesh Agricultural University

The Agricultural Universities have to play a vital role by providing the much needed guidance and education to the farmers in increasing agricultural production by new and better varieties and methods being found through research and making this new knowledge and technology available through trained personnel to the farmers' community.

In Andhra Pradesh, agricultural education, research and extension is the responsibility of the Andhra Pradesh Agricultural University which came into existence in July, 1964. The University receives assistance on the same pattern as traditional Universities receive from the University Grants Commission. The University however, needs matching grants under the Plan from the State Government, in addition to the assistance given by the Indian Council of Agricultural Research.

The pace of development of the several campuses of the University was good during the three Annual Plan periods and subsequently, although the allocations in the Fourth Plan were not adequate due to financial constraints.

The Indian Council of Agricultural Research has been providing considerable financial assistance to Agricultural Universities under "Centrally Sponsored Schemes" under Agricultural Education. Similarly they have provided financial assistance for Agricultural Research and Animal Husbandry Research under the Scheme of All India Co-ordinated Research Projects for almost all crops etc. The assistance under Agricultural Education programme is mostly made available for buildings, equipment and books etc. (*i.e.*) for non-recurring expenditure only. The assistance under Research and Extension is not made available for solving local problems.

The Fourth Plan allocation being only Rs. 224.63 lakhs, this was not adequate for fully equipping the research stations with the result that the research work could not show better and appreciable progress.

OBJECTIVES AND STRATEGY :

The Fifth Five Year Plan of the Andhra Pradesh Agricultural University has been broadly drawn up keeping in view the prime objective of the University to integrate teaching, research and extension.

The Indian Council of Agricultural Research has pointed out that necessary research bias should be provided in and around the college campuses together with necessary facilities for purposeful extension education. This aspect also has been taken into consideration while formulating the proposals.

The proposals have been drawn up keeping in view the probable resources to be made available, all the items included therein being considered important and useful. The observations of the Indian Council of Agricultural Research Visting Team and also the Sub-Group at its meeting held on 2-4-1973 that the University should reach peaks of excellence in respect of the existing courses have been taken note of. While the University could not attain this objective fully due to the scanty resources made available during the Fourth Plan period both by the Indian Council of Agricultural Research and the State Government, provision for strengthening the existing courses and departments to achieve the above objective has been proposed in the Fifth Plan.

Most of the existing reasearch stations are, by and large crop stations. While crop improvement is necessary, it alone is not sufficient to improve agriculture. To meet the demand of farmers, who need integrated solutions to agricultural problems, the emphasis should be more on land and water use, cropping pattern, multiple cropping, relay cropping etc., suitable to local conditions and resources. The regional stations should thus have every speciality represented, at least at the assistant specialist level. They also need additional laboratory and field facilities with adequate apparatus and equipment. Only then the regional stations could be entrusted with the responsibility for over-all development of agriculture in the region.

Regional stations are also necessary for quick collection and dissemination of information. The specialised local knowledge and expertise available with the Regional Stations is essential for implementing the Co-ordination between Research and Extension activities now existing at the State level and will be effectively felt even at the district level.

At present in Agricultural Research, emphasis is laid on cropwise approach and not on development of cropping system as a whole for a region. When there is an out-break of a pest of disease, remedial measures are sought on an emergency and ad hoc basis. To rectify the above it is proposed to reorganise the research work in order to develop necessary cropping systems best suited to the Agro-climatic conditions prevalent in different parts of the State.

Reorganisation and development of the existing research stations on a more rational basis serving the different agro-climatic conditions has also been suggested by the Indian Council of Agricultural Research and others. The Indian Council of Agricultural Research has proposed, for the first time, to provide financial assistance for regional research. It is, therefore, proposed to reorganise the existing research stations on a more rational basis by strengthening the physical and laboratory facilities and provide all the necessary equipment etc., so as to make

the research work more purposeful and beneficial to the three agro-climatic regions of the State. On the education side, it is proposed to create the new faculty of Basic Sciences as recommended by the visiting team of the Indian Council of Agricultural Research and also new departments to cover more spheres of activity and also to keep pace with sister universities in the country.

PROGRAMME DETAILS :

The spill over programme of work mostly relates to extension works which has been partially introduced in two districts in Fourth Plan period and also to the spill over programme of items of development eligible for financial assistance from Indian Council of Agriculture Research also.

The new schemes proposed as already explained above, aim at achieving better results in the field of Agricultural Education and Research. The programme content is as follows :

(Rs. in lakhs).

<i>Name of the Item</i>	<i>State Plan</i>
A. SPILL-OVER SCHEMES :	
(i) Education	10 00
(ii) Extension	40 00
(iii) Research	20 00
Total :	70 00
 B. NEW SCHEMES :	
I. DEVELOPMENT PLANS AT UNIVERSITY LEVEL :	
(a) Establishment of a faculty of Basic Science with separate Departments for Bio-Chemistry, Genetics, Mathematics and Statistics, Micro-Biology, Physical Science, Biological Science, and Languages.	25 00
(b) Establishment of Agricultural Polytechnics (one at Hyderabad and one at Tirupati and other at Vijayawada-Guntur).	30 00
(c) Establishment of Agro-Economic Research Institute-cum-Farm Management and Training Institute. ..	15 00

II. DEVELOPMENT AT COLLEGE LEVEL :

(a) Creation of advanced centres of study :

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|--|---|-------|
| (i) Department of Poultry Science in the Faculty of Veterinary Science | } | 15.00 |
| (ii) Department of Agricultural, Botany (Plant Breeding and Genetics) in the faculty of Agriculture. } | | |

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| (b) Establishment of Central Instrumentation Cell at Rajendranagar Campus | 5.00 |
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(c) Setting up of New Departments :

1. Faculty of Agriculture :

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|---|---|-------|
| (i) Department of Water use Management. | } | 30.00 |
| (ii) Department of Plant Physiology. | | |
| (iii) Department of Plant Breeding and Genetics. | | |
| (iv) Department of Soil Science. | | |
| (v) Department of Nematology. | | |
| (vi) Department of Agricultural Co-operation and Marketing. | | |
| (vii) Department of Food Technology. | | |
| (viii) Department of Fisheries. | | |
| (ix) Department of Forestry. | | |

Faculty of Veterinary Science :

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|--|---|-------|
| (i) Bifurcation of existing departments of Surgery and Gynaecology and Obstetrics. | } | 15.00 |
| (ii) Bifurcation of existing department of Pathology and Paracitology. | | |
| (iii) Bifurcation of existing departments of Physiology Pharmacology. | | |
| (iv) Department of Gynaecology and Obstetrics and Animal Reproduction. | | |
| (v) Veterinary Hygiene and Public Health. | | |
| (vi) Department of Food Technology. | | |

Faculty of Home Science :

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| (i) Department of Extension Education | 5.00 |
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III. STRENGTHENING OF PH. D. STUDIES :

(i) <i>Ph. D. Course in Agriculture:</i> :	}	25 .00
(Agricultural Botany, Entomology, Chemistry and all other subjects) at Rajendranagar.		
(ii) <i>Ph. D. Course in Veterinary, Science :</i>		
(a) Animal Science at Rajendranagar.		
(b) Gynaecology and Obstetrics and Animal Reproduction at Tirupati.		
(iii) <i>Ph. D. Course in Home Science :</i>		
Food and Nutrition at Hyderabad.		
IV. INSERVICE TRAINING PROGRAMME FOR TEACHERS AND RESEARCH GRANTS FOR TEACHERS, ETC. ..		10.00
V. INSTRUCTIONAL RESEARCH FARM FACILITIES ..		..
VI. CAMPUS DEVELOPMENT INCLUDING ROADS, WATER SUPPLY, SANITATION, ETC. ..		25.00
VII. STUDENT UNION BUILDINGS ..		..
VIII. STAFF QUARTERS ..		..
IX. HOSTELS ..		..
X. DEVELOPMENT OF REGIONAL RESEARCH STATIONS ..		..
XI. STRENGTHENING OF EXISTING DEPARTMENTS OF U. G. AND F. G. LEVEL UNDER THE THREE FACULTIES OF AGRICULTURE, VETERINARY SCIENCE AND HOME SCIENCE ..		20.00
XII .EXTENSION ..		75.00
XIII. RESEARCH :		
(i) Strengthening of Laboratories and acquisition of land at Research Stations ..		30.00
(ii) Mechanisation of Research Stations ..		25.00
(iii) Strengthening of Research Stations, by way of increased inputs ..		70.00

Total	450.00
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Andhra Pradesh State Agro-Industries Corporation.

The Agro-Industries Corporation Limited has been set up with the objective of promoting agro-industries and other ancillary enterprises in the State. The State has 51 per cent investment and the Centre 49 per cent in the Corporation. The authorised capital of the Agro-Industries Corporation Limited is Rs. 4 crores.

REVIEW :

Current activities of the Agro-Industries Corporation include land development, deep ploughing, custom spraying, development of agro service centres, ground water exploitation, sale of tractors and power tillers, soil conservation and sale of iron and steel materials necessary for the ryots.

OBJECTIVES AND STRATEGY :

The basic objective in setting up an Agro-Industries Corporation was to create an institution that would provide the necessary infrastructure for the entire agricultural sector. The strategy to be adopted in formulating its own schemes would, therefore, have to subserve the strategy adopted for the sector itself. Its basic functions which were conceived at the time of the setting up of the Corporation would continue, namely (a) to provide the inputs and customs services required for agriculture and allied activities (b) to organise facilities necessary for marketing and for processing the produce in these sectors, and (c) to mobilise institutional finance for these purposes. Any strategy devised for achieving these objectives would have to keep in view the need to provide more employment and to provide a larger measure of services for the small farmers. In organising these services, the Corporation would have to take into account the spatial and regional strategy by the Planning Department and ensure that the different levels of services are provided at the different centre in the hierarchy of central places, market centres, etc.

PROGRAMME DETAILS :

A total provision of Rs. 7.70 crores has been made for the Corporation to set up a net work of agro-service stations in all service centres delineated and also help take up processing units. Further provision of services to aid agricultural progress is contemplated.

(A) SPILLOVER SCHEMES :

(a) *Land Development :*

Land development work can be taken up in about 1.00 lakh acres during the Fifth Plan period. The turnover of the bulldozers in terms of hours to achieve the above acreage is about 5 lakh hours.

Existing capacity is however far larger, probably in the order of 70,000 acres per year, but requiring distribution of demand through all the months of the year and financing farmers to a much larger extent.

(b) Deep Ploughing :

Large areas specially 'Regur' soils, require deep ploughing both for increasing yields as well as to tackle the weed problems effectively.

It is proposed to take up deep ploughing work with Crawler tractors, and heavy duty ploughs in about 0.625 lakh acres during the Fifth Five Year Plan.

(c) Custom Spraying :

Custom spraying other than aerial spraying has not been made popular in our country except to some extent in our State. Custom spraying has been accepted for mango gardens and in some areas, for spraying on cotton and groundnut. In general custom spraying is likely to be successful where large contiguous areas of land sown by same crop are available.

It is proposed to take up custom spraying with tractor mounted/drawn implements in about 1.5 lakh acres during the Fifth Plan.

Foreign Exchange is required to the extent of about Rs. 50 lakhs, during the Fifth Plan for importing spares of tractors, etc., for both internal consumption of the Corporation and for supply to farmers who were supplied with imported tractors.

(b) Setting up of Agro-Service Centres :

The Corporation is setting up Agro-Service Centres under a centrally sponsored scheme. So far, 86 people have been trained and 38 centres started. There is great need for such centres and they could be started in the 1,600 or so potential areas (growth centres) identified by the Planning Department. Tentatively, the Corporation proposes to set up 100 centres at least per annum. It is hoped that, by the second year of Fifth Plan, about 700 centres would be operating in the State. About Rs. 10.50 lakhs will have to be provided by the Centre towards stipends for trainees and also Rs. 4.5 lakhs towards staff salaries and training facilities. In addition a number of new centres are to be designed.

(c) Ground Water Exploitation :

At present, the Corporation owns a fleet of 60 drills (40 DTH 20 Rotary drills). It is expected that about 6,000 bores would be sunk covering a meterage of 1,80,000 metres in the Fifth Five Year Plan. By this, 60,000 acres of additional area can be brought under irrigation.

(B) NEW SCHEMES :*(a) Setting up a freeze-drying unit for mango, prawn etc. :*

It is proposed to set up a freeze-drying unit in the Andhra Region of the State to process mango juice and slices and prawn in the first instance and other speciality foods of Andhra Pradesh in due course. The unit would be largely export-oriented. The total investment on the project is expected to be around Rs. 2 crores and the return on the

investment about 15 per cent. The plant is expected to consume nearly 3,000 tonnes of mangoes and prawns and yield 300 tonnes of freeze-dried products from them per year.

(b) Setting up maize milling and castor processing units :

It is proposed to set up processing units for maize milling and castor oil and castor oil based products in the Telangana Region, Warangal-Karimnagar area for maize processing and Nalgonda (Lift irrigation project areas) for castor based industry, with a view to support and stabilize the agricultural production plans and improve the incomes of the farmers and the economy of the State at large. The likely capital investment on the two projects is Rs. 70 lakhs for maize milling unit and Rs. 500 lakhs for castor processing complex. The maize unit is expected to handle nearly 15,000 tonnes of maize producing nearly as much of milled maize products per annum. The castor complex would use nearly 50,000 tonnes of castor seed per year and yield castor oil and other products to the tune of 40,000 to 45,000 tonnes.

(c) Setting up a low-cost, high protein food manufacturing unit :

The Government of India and Andhra Pradesh have been carrying out several food and nutrition programmes, specially for the weak and vulnerable sections of the population. Andhra Pradesh could play a larger and more effective role in the rational and economic exploitation of its rich oil seeds resources and also in combating protein deficiency and malnutrition in the State and in the country by setting up units for manufacturing low-cost, high protein foods from groundnut, gingelly, etc.

It is accordingly proposed to set up one such unit in Rayalaseema Region, which leads in groundnut production, at a cost of nearly Rs. 100 lakhs. The factory is expected to process nearly 15,000 tonnes of oil seed meal per year.

INTER-SECTORAL/DEPARTMENTAL LINKAGES :

Raw materials availability in terms of fruits, maize, castor, prawn, groundnut and gingelly on the one hand and supply of electric power, fuel (coal, oil, etc.) of the requisite quality on the other at reasonable prices should be ensured with the help of Government and semi-Government agencies such as Departments of Agriculture, Fisheries, Marketing and Electricity Board, etc., and hence close co-ordination is essential.

Financial institutions are expected to contribute substantially towards capital equipment for the processing industries proposed.

Separate divisions or subsidiaries would be created to set up and run the processing units proposed, as may be appropriate in each case.

SPECIAL FEATURES :

The establishment of maize, castor and oil seed processing units is likely to help correct regional imbalances, as they are to be set up in

areas which are poorly developed industrially. All the units are also expected to benefit the weaker sections like small farmers and fishermen. All the projects are likely to generate considerable employment directly and indirectly, principally in the following sectors :

- (a) Agricultural production.
- (b) manufacture and supply of agricultural inputs like seed, fertilisers, etc.
- (c) handling and marketing of agricultural produce.
- (d) processing and manufacturing agricultural crops and commodities.
- (e) packaging, marketing and distribution of the manufactured products.
- (f) ancillary industries like manufacture of containers, packing materials, etc.

CENTRAL SECTOR SCHEMES :

A scheme for providing employment to unemployed technical personnel through Agro-Service Centres is expected to be continued through Fifth Plan. It is assumed that the pattern of assistance envisaged for Fourth Plan would continue in Fifth Plan also.

2. TRAINING CENTRES

Importance for training of development functionaries is mainly a post-independence development in India. The first significant and major step in this direction was initiated in 1954 when with the introduction of Community Development Programme in India in 1952, the Ministry of Community Development established a National Institute of Community Development for training Senior Officers and elected representatives and also established in different states orientation and study centres as regional institutions covering 3 to 4 States to impart training for block level functionaries, Presidents of Panchayat Samithis and District Level Development Officers. With the growing concern for quantitative improvement in training, the range of their activities are being enlarged and diversified with special importance of research and studies so that these training institutions could be of some real assistance to the Government in formulating new schemes and modifying the existing programmes. This has been an important activity of the National Institute of Community Development and the State Level Institutions. The Training institutions are an Intra-Rural Agencies and therefore it would be quite legitimate for these institutions to intensify their research and evaluation programmes not only for finding solutions for its own training problems but also for its Government Departments to which they belong. Therefore, it is necessary that these training institutions are fully developed as Research and State Institutions in addition to the training programme.

REVIEW :

In Andhra Pradesh at the State Level the State Institute of Community Development and Panchayati Raj a Central institution was transferred to the State control in 1967 with a view to converting it into an apex institution to co-ordinate and guide the various training programmes taken up for the Panchayati Raj functionaries in the State. The Government of India is giving financial assistance of Rs. 1.50 lakhs to this Institute and this assistance will not be available from 1-4-1974. This amount is under Non-Plan and will be utilised towards the salaries of the existing staff. This institute is at present giving training for Block Development Officers, District Officers, Presidents of Panchayat Samithis, Accounts Officers of Zilla Parishads and for Extension Officers of Agriculture working in Panchayat Samithis. Another scheme taken up under this head, relates to Village Officers Training Centre. There are at present 4 Village Development Officers' Training Centres functioning in the State. All the above training Centres were upgraded for imparting higher training programme to the Village Development Officers. A number of measures suggested for intensive training for Gram Sevaks in the Fourth Plan include ;

- (1) Strengthening of physical facilities at the Gram Sevaks Training Centres ;
- (2) Providing opportunities for selected Gram Sevaks to study B.Sc. (Agri.) in Colleges of Agriculture ;

- (3) Organising diploma courses for those who are not eligible to receive further training at Graduate level; and
- (4) Short refresher courses and specialised training to cover all the Village Level Workers. Keeping in view the above objectives, Government of India have upgraded twenty selected Gram Sevak Training Centres where select Village Level Workers had already been in the field for more than 5 years, could receive higher training in Agriculture and Animal Husbandry.

In Andhra Pradesh the Gram Sevak Training Centres in Rajendranagar and Bapatla have been upgraded in 1965 and the Centres at Samalkot and Kalahasti have been upgraded in 1967. In Andhra Pradesh 944 participants are benefitted by this specialised training during the Fourth Plan period.

During the Fourth Plan period, an outlay of Rs. 18.50 lakhs will be spent on Training Programmes as against the approved outlay of Rs. 23.89 lakhs.

OBJECTIVES :

The objectives of training programmes are :

- (1) to strengthen the State Institute of Community Development and Panchayati Raj by appointing more Gazetted Instructors ; and
- (2) to impart training to Village Level Development Officers in nursery management, vegetable cultivation, operation of plant protection equipment, identification of pests and diseases, in Poultry and Livestock management.

PROGRAMME DETAILS :

An outlay of Rs. 42.63 lakhs is provided in the Plan for Training Centres comprising Rs. 5.60 lakhs for strengthening State Institute of Community Development and Panchayati Raj and Rs. 37.03 lakhs on Village Development Officers' Training Centres.

Under strengthening of State Institute of Community Development and Panchayati Raj it is proposed to strengthen this institution, by appointing the Gazetted Instructors besides providing ministerial assistance. It is also proposed to purchase a Bus to arrange for field trips and for visits to local institutions.

New training programmes to give training to the District Panchayat Officers, Divisional Panchayat Officers, Extension Officers (Panchayats) on all aspects of Panchayati Raj Act and Rules have been proposed. The Secretaries of Zilla Parishads, District Statistical Officers and Block Development Officers will also be given training on formulation of Plan schemes, area development schemes and evaluation studies. The Managers of Panchayat Samithis and Zilla Parishads and the accountants in Panchayat Samithis and Zilla Parishads will also be given training in this institute. It is proposed to conduct

training programmes exclusively for elected functionaries of Panchayati Raj institutions. It is also proposed to entrust this Institute with several studies and evaluation of programmes to find solution to the problem of training to assist the Government in rendering assistance in the implementation of various programmes. An outlay of Rs. 5.60 lakhs is made for this purpose.

Similarly at the Village Development Officers' Training Centres' refresher courses to Village Development Officers (Men and Women), higher training programme to select Village Development Officers; training in plant propagation, poultry and livestock management; peripatetic scheme for training of Village Development Officers and training of youth workers and associated women workers is proposed. An outlay of Rs. 37.03 lakhs is proposed in the Plan.

3. MINOR IRRIGATION

The Approach Paper on Irrigation prepared by the Planning Commission while emphasising a substantial increase in the creation of irrigation potential, also contemplates irrigation projects continuing to subserve the national objective of generating direct employment in the construction phase and indirect employment thereafter through improvements in and stabilisation of the agricultural economy in general.

In the context of the state of economy of the State it is necessary to accord highest priority for completion of schemes already taken up. Further the major thrust in regard to Minor Irrigation would be in terms of (a) new surface irrigation schemes which yield high and quick benefits particularly in backward and drought affected areas and tribal areas ; (b) emphasis on scientific exploitation of ground water through proper surveys, utilisation of institutional finances and rural electrification (c) initiating measures for scientific water management. In designing these measures and in linking them up a proper mix of major, medium and minor irrigation particularly surface and ground water on the one hand and effecting an appropriate mix relevant to the conditions of various backward and drought affected areas on the other, is necessary.

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REVIEW :

During the Fourth Five-Year Plan the Physical and financial achievements under the Minor Irrigation sector may be summed up as follows :

Department.	Anticipated Expenditure during IV Plan (Rs. in lakhs).	Area Irrigated (Lakh acres).
		2.20 (Stabilisation)
1. Chief Engineer (Minor Irrigation) ..	997.72	1.74 (New)
2. Chief Engineer (Panchayati Raj) ..	118.87	0.24 (New)
3. Directorate of Ground Water ..	80.59	*
4. Registrar of Co-operative Societies ..	762.88	..
(a) Ordinary wells/Tube wells :		
(i) Nos. ..		89,068**
(ii) Area irrigated ..		1.95
(b) Oil Engines/Electric Motors :		
(i) Nos. ..		29,427@
(ii) Additional area irrigated ..		0.59
5. Planning and Co-operation Department ..	10.03	..
Total :	1,970.09	2.20 (Stabilisation) 4.52 (New)

* No. Physical targets.

** Wells financed.

@ Oil Engines/Electric Motors financed.

It may thus be seen that a total potential of about 4.52 lakh acres under minor irrigation is expected to be created in addition to the stabilisation of 2.20 lakh acres by the end of Fourth Plan.

OBJECTIVES :

The objectives in the Minor Irrigation sector may be summarised as follows :

- (a) A scientific well-sinking programme based on adequate ground water programme based on adequate ground water data in order to provide supplemental irrigation in respect of areas already irrigated and particularly for the provision of irrigation facilities in scarcity areas.
- (b) Provision of minor irrigation facilities in the upland taluks of Coastal Andhra and drought affected taluks of Rayalaseema and Telangana.
- (c) Introduction of new techniques such as sprinkler/drip irrigation, construction of seepage tanks, measures to raise water falls etc., particularly in the drought affected areas.

STRATEGY :

The programme for Minor Irrigation has necessarily to be co-ordinated with the programme for major and medium irrigation with a view to removal of regional imbalances. More minor irrigation works are proposed to be taken up accordingly in areas where there is no scope for taking up major and medium irrigation projects during the Fifth Plan period or in areas which are not covered by major and medium irrigation projects now under execution. Special attention will have to be given to hilly areas e.g., agency areas, in which lift irrigation may be the only possible means to bring land under cultivation.

PROGRAMME DETAILS :

In discussing the programme details it is necessary to appreciate that there are a number of agencies in-charge of minor irrigation. They are Chief Engineer (Minor Irrigation), Chief Engineer (Panchayati Raj), Registrar of Co-operative Societies towards institutional finances and Ground Water directorate. The total provision of Minor Irrigation suggested during the Fifth Five Year-Plan worked out to Rs. 43.50

crores. The financial and physical aspects to the extent they are identifiable are as follows :

Department	Provision (Rs. in crores).	Potential likely to be created (lakh acres).
1. Chief Engineer (Minor Irrigation) ..	22.00	1.72
2. Chief Engineer (Panchayati Raj.) ..	4.00	1.00 (Stabilisation)
<i>Ground water :</i>		
3. Ground Water Directorate ..	5.00	62,500*
4. Registrar of Co-operative Societies ..	12.50	3.00
Total :	43.50	

*62,500 sq. Km. area to be surveyed.

1. *Chief Engineer (Minor Irrigation) :*

The spillover commitment under this sector, estimated at Rs. 4.00 crores is provided in full for Fifth Plan. In regard to new schemes the position at the end of Fourth Plan will be as follows : (district-wise details are given in Annexure).

Category	No. of schemes.	Ayacut (in 000 acres)	Total cost (Rs. in lakhs.)
1. Schemes sanctioned and ready for execution ..	349	77.47	929.50
2. Schemes already investigated but not yet sanctioned, in advance stage of investigation	720	261.98	3,143.82
3. Schemes to be investigated as per Master Plan. ..	1,120	283.84	3,409.20
Total :	2,189	623.29	7,482.02

It can thus, be seen that there are about 2,200 works costing about Rs. 75.00 crores which can be taken up during the Fifth Plan period. However due to the constraint of financial resources it is proposed to limit the activity to an outlay of Rs. 15 crores for surface water exploitation. It is necessary to make a beginning with introduction of sophisticated techniques of irrigation and water management during the Plan period such as sprinkler irrigation, drip irrigation, construction of seepage tanks, measures to raise water table etc. Suitable allocations have to be made at least to the extent necessary for making a small beginning during the Fifth Plan period. Approximate provisions have also to be made for lift irrigation, investigation of schemes, tube-wells etc. On this basis the following allocations are suggested :

Scheme	Allocation (Rs. in crores).
Investigation of schemes	.. 2.25
Tube-wells exploration and engineering successful wells	.. 0.50
Lift irrigation schemes	.. 1.00
Sprinkler and Drip irrigation schemes	.. 0.50
Seepage tanks	.. 0.30
Measures to raise water table	.. 0.50
Community wells for irrigation	.. 0.30
Linking of distributaries	.. 0.50
Use of waste water from existing irrigation sources	.. 0.30
Reduction of water spread area-cum-reclamation of tank beds	.. 0.50
Preventive measures against silting of tanks	.. 0.30
Surface water exploitation	.. 15.05
Total :	.. 22.00

The Programme of Chief Engineer (Minor Irrigation) is confined to exploitation of surface water by constructing new tanks, restoration of old and breached tanks, construction of supplementary sources by constructing anicuts, supply channels etc. In some of the basins the

available water resources are getting exhausted. For instance in Anantapur district there is not much scope left for further exploitation of surface water resources. We have to go in for diversified techniques for exploitation of the limited water resources to alleviate the distress conditions of drought affected areas. The idea of economic utilisation is also gaining ground. To achieve the integrated utilisation of the water resources under Minor Irrigation Programme, the following methods of approach are proposed on a pilot basis in selected areas suggested.

(a) *Sprinkler and Drip Irrigation :*

These techniques of irrigation are very widely used in Israel and Middle East countries. Though the initial capital outlay is a little high the extent that can be covered with the same quantum of water is likely to be 2 or 3 times of the area compared to surface wetting. A beginning will be made in the Fifth Plan with an outlay of Rs. 50.00 lakhs. Drip irrigation is almost a new introduction in Israel which is reported to be proving more efficient than even sprinkler irrigation. This system will also be introduced.

(b) *Seepage tanks :*

The system of seepage tanks is not new to our State. They are in existence in Rayalaseema area. They are mostly private owned. They serve to increase the level of water table and enable copious supply being made available for wells in the ayacut. They also serve as soil conservation bunds. The tank beds are generally utilised for winter crop cultivation utilising the residuary moisture content in the silt deposits in the tank bed area.

It is learnt that Mahar.shtra State has already taken up this scheme at Government cost on a fairly large scale. Such a system is now proposed in the Fifth Plan with an outlay of Rs. 80.00 lakhs.

(c) *Measures to raise water table:*

Most of the rivers and streams in Rayalaseema are covered with considerable depth of sand. Age old tradition is to excavate a Spring Channel and irrigate the margins to raise paddy. With the latest techniques, it is now possible to introduce diaphragm cut off at a reasonable cost which will result in rise of water table almost to the bed of rivers. This will enable efficient functioning of spring channels, and incidentally facilitate more number of wells along the margins of the rivers and streams. This will go a long way to improve and increase the irrigation facilities specially in Rayalaseema. A provision of Rs. 50 lakhs is made for this purpose.

(d) *Community Wells for Irrigation :*

Small and marginal farmers, Harijans and other weaker sections of the community cannot afford to excavate a well all by themselves and set up pumping units etc., in spite of liberal institutional loan facilities available. As early as in 1951 a couple of community wells were dug in Anantapur district on an experimental basis. The size of the well is big enough to cater to 15/20 acres owned by a number of

poor people. They enjoy the benefit of forming into a Co-operative Society. Efforts made to extend the system on wider scale have not materialised so far. A specific provision of Rs. 80 lakhs is proposed for this type of work during Fifth Plan.

(e) *Lining of distributaries :*

Experience of actual functioning of many minor irrigation schemes in uplands glaringly reveal substantial losses of water in communication. Such a problem has received attention under Major Irrigation systems. No reasonable effort has yet been made to prevent the seepage losses under minor irrigation sources. We have reached a stage in certain places where every drop of water has to be conserved. With this idea in view, a provision of Rs. 50.00 lakhs is proposed in the Fifth Plan.

(f) *Use of Waste water in existing Irrigation Sources :*

With the advent of upland major irrigation projects like Tungabhadra Project, Nagarjunasagar and Pochampad where the localisation is not for the full area but covers limited areas considerable quantity of water runs into the drains, which if not utilised will go waste. Such waters can be utilised by easy devices of throwing up an anicut or lifting water etc., to suit the local conditions. Recently, some ayacutdars themselves have formed into societies and requested for just permission to lift such water to cover an area of 5,000 acres under Nagarjunasagar Project area in Prakasam district. This is a very commendable attempt wherein the ryots have come forward to invest nearly Rs. 50 lakhs without any liability to Government. The permission was readily granted. There are many cases where the waste water can be utilised. An amount of Rs. 80.00 lakhs is proposed to initiate such schemes during Fifth Plan.

(g) *Reduction of water spread area-cum-reclamation of tank beds :*

Many tanks in our State occupy an area almost equivalent to the extent of ayacut itself. By and large the area lost in the tank beds is very considerable. Certain area can definitely be reclaimed by raising the level in the foreshore with the silt deposit in the tank beds or by bunding. Since 1950 a scheme of reclamation of tank beds was put into execution in Madras State. It is learnt that the scheme is a success. It may be better to introduce such a scheme in our State. A provision of Rs. 50 lakhs is proposed for this purpose.

(h) *Preventive measures against silting of tanks:*

Certain tanks in the State are fast getting silted up due to deforestation, cultivation of waste lands, cultivation of tanks foreshore areas, over-grazing, disturbing the status-quo of flow condition etc. Preventive measures have to be taken. A provision of Rs. 20.00 lakhs is proposed for this work.

The items dealing with surface water exploitation, lift irrigation, tubewells exploitation, investigation etc., are items of work already being implemented and will only be a continuation during the Fifth Plan.

With the outlay of Rs. 22.00 crores for the schemes under Chief Engineer (Minor Irrigation), an irrigation potential of 1.72 lakh acres can be created of which about 0.95 lakh acres will be created under spill over schemes.

2. Chief Engineer (Panchayati Raj)

As noted earlier, allocation for minor irrigation under Panchayati Raj department was about Rs. 2.00 crores during the Fourth Plan. During the Fifth plan period it is proposed to provide Rs. 4.00 crores for these works which would result in stabilisation of irrigation under minor irrigation tanks to an extent of one lakh acres.

3. Ground Water Development.

Ground Water development is almost wholly undertaken in the private sector with the financial assistance rendered by the Registrar of Co-operative Societies and technical assistance rendered by Directorate of Ground Water. Further Agro-Industries Corporation (concerned under Agricultural sector) is expected to provide the machinery required to drill and also pumps etc. Certain allocation in Power sector (Rs. 100 crores) for rural electrification is also made involving energisation of pumpsets. In the irrigation sector, the Registrar of Co-operative Societies is provided with Rs. 12.5 crores being the estimated State's share towards debentures. The total loaning programme is likely to be of the order of Rs. 60 crores under this item involving an estimated 75,000 wells and 90,000 pumpsets/engines. This is the optimum programme that could be undertaken in the circumstances and accordingly full requirement has been provided in view of importance of ground water exploitation particularly in backward drought affected areas.

Ground Water Directorate:

It has been estimated that the ultimate irrigation potential of the State is 108 lakh hectares, out of which 18 lakh hectares are under ground water. The area brought under irrigation by the end of Fourth Plan is estimated to be about 32 lakh hectares. It can thus be seen that much remains to be done if available water resources are to be exploited to the optimum. In this connection there is every necessity to exploit ground water resources in a much more scientific manner than hitherto undertaken particularly to avoid infructuous outlays and also to prevent overdraft resulting in lowering of water tables as is happening in several areas of the State. Most areas of the State including most of Telangana and Rayalaseema are affected by recurring drought and as a result surface water resources which have become scanty in the above areas are not available in time or inadequate during cultivation season. Under these circumstances it is essential that ground water resources are fully exploited to mitigate the distress of cultivators facing difficulties due to the vagaries of monsoon. The information about the areas where ground water resources are available for exploitation in sufficient quantities for economic utilization is rather scanty as there was no department in the State in the past who were attending to this. No systematic or comprehensive study has been undertaken so far. It is, therefore, essential to take up detailed investigations of ground water resources in the

various areas of the State during the Fifth Plan period. For this purpose an allocation of Rs. 5.00 crores has been recommended during the Fifth Plan period by the Working Group on irrigation for the Ground Water Department under Minor Irrigation. The ground water investigation programme will have to be carried out in 189 taluks of the State. An annual target of about 12,500 sq. kms. of area is proposed for being covered by detailed investigation which would include preparation of detailed maps containing all relevant data.

The functions of the State Organisations as recommended by the Task Force appointed by the Government of India are as follows:

- (i) Collection, compilation, synthesis and interpretation of the hydrogeological information available from various sources including the data thrown up continuously by the on-going production programmes and preparation of utility hydrogeological maps.
- (ii) Preparing and maintaining exhaustive inventory of all the existing works, including those that are being added, and of their withdrawal rates.
- (iii) Watching the variations in the groundwater levels/pressures on continuing basis and setting up of adequate grids of observation wells for this purpose.
- (iv) Undertaking hydrogeological investigations of the semi-detailed type in the areas not covered under the projects for comprehensive resource evaluation studies, in close collaboration with the Central Ground Water Board.
- (v) Setting up minimum State-wise programmes for stream gauging, climatological observations, water quality measurements etc., to permit correlation of the results of the detailed studies to other areas.
- (vi) Undertaking investigation of specific problems as and when warranted.
- (vii) Formulating and scrutinising ground water schemes on the basis of synthesis and analysis of the available data, rapid techniques for appraisal of hydrogeologic features and empirical correlation of hydro-meteorological and hydrologic factors.
- (viii) Providing technical guidance to the cultivators in location, spacing, design and construction of their wells/tubewells.
- (ix) Providing custom service to the farmers in boring and drilling of wells/tubewells in healthy competition with the private entrepreneurs.

These studies are required to be carried out on a permanent footing. In view of the increasing pressure on the development programmes the proposed work plan should aim at completion of these preliminary investigations in a shortest period (at least by the end of Fifth Five Year Plan) for the entire State. In order to take up these

investigations, the department requires considerable extra staff and equipment for undertaking and completing the studies. Keeping the above issues in view, a Centrally Sponsored scheme costing Rs. 88.62 lakhs was formulated and forwarded to Government of India for approval. In the scheme it is proposed to establish district offices with adequate technical personnel in Hydrology and Hydro-geology, Geophysics etc., to initiate intensive studies and strengthen the regional offices and the Directorate with personnel in the disciplines of Geophysics, Hydrometeorology, Agronomy etc.

It is essential that this set-up continues in the Fifth Plan period to achieve the above objectives with adequate strengthening in a phased manner depending upon the data and information thrown up in the course of investigations.

The Ground Water department in Andhra Pradesh was established in March, 1971 and was immediately entrusted with technical evaluation of minor irrigation schemes in 78 selected taluks of the State to fulfil the contractual obligation as per the agreement entered into with the International Development Association. The programme cleared by this department is to be implemented both by the Andhra Pradesh Co-operative Central Land Mortgage Bank and Participating Commercial Banks. So far, 55 schemes for Andhra Pradesh Co-operative Central Land Mortgage Bank and 37 schemes for participating Commercial Banks, valued at about Rs. 20.06 crores have been technically evaluated and cleared. The programme cleared against this amount is 186 tube wells, 17,304 dug wells, development of 12,788 old wells and 25,186 pumpsets.

In addition to the above schemes, the Ground-water Department has been entrusted with the following special schemes.

Small Farmers Development Agency and Marginal Farmers' & Agricultural Labourers Development Agency.

The Government of Andhra Pradesh have selected Srikakulam, Cuddapah and Nalgonda districts for establishing Small Farmers' Development Agency and Nalgonda and Visakhapatnam for Marginal Farmers' and Agricultural Labourers Development Agencies. The Small Farmers Development Agency has selected 5 taluks in Srikakulam district, 9 taluks in Cuddapah district and 3 taluks in Nalgonda district for implementation of Minor Irrigation programmes among other activities. Under Marginal Farmers and Agricultural Labourers Development Agency scheme, 3 taluks in Visakhapatnam district and one taluk in Nalgonda district have been selected for implementation of Minor Irrigation programme. Schemes valued at Rs. 8.36 crores under Small Farmers' Development Agency and Marginal Farmers and Agricultural Labourers Development Agency schemes have been technically cleared by this department from 10th March 1971 to 30th April, 1973.

This department was also entrusted with the scrutiny of Rural electrification schemes aimed at energising agricultural pumpsets. Such schemes have been drawn up for certain areas in the State and are being referred to this department from time to time for their general

technical appraisal in regard to the ground water availability in the areas. Under the programme 20 schemes were referred to this department for communicating the technical feasibility of the programmes envisaged. So far, 18 schemes valued at Rs. 3.41 crores have been cleared.

The entire State is now covered by the International Development Association Project during the year 1973-74. The technical evaluation of minor irrigation schemes in the remaining 111 taluks which were hitherto not covered under the International Development Association Project, have also to be attended to by this department, besides other schemes like Small Farmers' Development Agency and Marginal Farmers' and Agricultural Labourers Development Agency, Cluster Electrification Schemes etc., mentioned above. The value of the schemes given technical clearance in these 111 taluks under normal loaning programme from 10th March 1971 to 30th April, 1973 is about Rs. 29 crores.

The details of programme cleared after technical scrutiny under the above schemes valued at Rs. 56.04 crores, is given below.

<i>Name of the scheme.</i>	<i>Tube wells.</i>	<i>Dug wells.</i>	<i>DOW.</i>	<i>Pump sets.</i>	<i>Value. (Rs. in lakhs)</i>
(1)	(2)	(3)		(4)	(6)
International Development Association and Non-International Development Association. ..	2,466	25,323	13,643	34,421	2,849.04
International Development Association Extension (1972-73) ..		29,970	..	29,970	2,077.60
Small Farmers' Development Agency and Marginal Farmers' & Agricultural Labourers Development Agency. ..	120	3,906	3,512	2,886	336.21
Rural Electrification Corporation. ..	..	..	..	9,690	341.15
Total: ..	2,586	59,199	17,155	72,967	5,604.00

In addition to the above, the department had been attending to water suly investigation to rural, urban and industrial areas, investigation, for assessing the ground water potentiality of areas selected for cane growing under different sugar factories, surveys for land colonisation schemes etc., without any additional staff meant for taking up such investigations.

The existing set up of the department which is project oriented is presently consisting of only three regional offices in each of the three regions of the State besides the directorate and the additional posts required for strengthening in the following manner, have been shown in the tabular statement enclosed.

District Office :

It is proposed to have the district setup consisting of 4 Assistant Hydrogeologists, 2 Assistant Hydrologists supported by 4 Technical Assistants (Hydrogeology) and 2 Technical Assistants (Hydrology) respectively and a Supervisor under the supervision of a Junior Hydrogeologist/Junior Hydrologist. The technical officers would attend to the various aspects mentioned in the recommendations of the Task Force except (i) Providing technical guidance to the cultivators in location, spacing, design and construction of their wells tube wells and (ii) Providing custom service to the farmers in boring and drilling of wells/tubewells in healthy competition with the private entrepreneurs which would be possible only after collection and projection of data and not immediately.

For the above initial set up the annual expenditure for 21 district offices towards pay and allowances works out to about Rs. 17 lakhs while the recurring contingencies is estimated at about Rs. 9.70 lakhs, totalling to about Rs. 26.70 lakhs.

Strengthening of Regional Offices:

The assessment of ground water resources of the State requires collection of data and actual field studies in allied disciplines like agronomy, hydro-meteorological and geophysical aspects. For the purpose, it is proposed to strengthen the Regional offices with Technical personnel in these fields *i.e.*, Agronomy, Hydrometeorology, etc.

The strengthening of the Regional Offices in the above lines require about Rs. 4.8 lakhs towards pay and allowances and about Rs. 2.25 lakhs for recurring contingencies totalling to about Rs. 7.05 lakh annually.

Strengthening of Directorate :

The strengthening of the Directorate to commensurate with the strengthening of the Regional Offices with more disciplines and the establishment of district offices with adequate technical personnel for taking up intensive surveys and studies, would require annually about Rs. 3.54 lakhs towards pay and allowances of the additional staff and about Rs. 0.79 lakhs for recurring contingencies totalling to about Rs. 4.33 lakhs annually.

The strengthening of the Department on the lines mentioned above would require about Rs. 38 lakhs per annum towards pay and allowances and recurring contingencies which includes among others cost of surveys, cost of maintenance of existing equipment and those that are proposed to be acquired during the current year. At this rate a total amount of about Rs. 1.90 crores is required on this account.

This is inclusive of the committed expenditure of Rs. 0.87 lakhs on staff in position at the beginning of the Fifth Five-Year Plan and maintenance of Vehicles and machinery. The proposed staffing is initial one and may have to be positioned in a phased manner and is likely to be increased marginally depending upon the requirement warranted by the data collected and projected,

Material required:

The details of capital expenditure on machinery and equipment during the Fifth Plan period are given below :

		<i>(Rs. in lakhs.)</i>
<hr/>		
1.	Cost of 6 deep drilling rigs for drilling 6" to 8" dia. holes 6 Nos. @ of 22 lakhs	132.00
2.	6 Trucks (to accompany 6 rigs) of 10 ton capacity ..	4.00
3.	Geological equipment	1.50
4.	Geo-physical equipment	2.50
5.	Engineering & Survey equipment	2.00
6.	Additional pump testing units 6 Nos.	5.50
7.	Agronomical & Chemical equipment	1.00
8.	Office equipment : Cartography equipment, Calculators, Copying machines, Blue print machines, Filing cabinets for Data Bank	1.00
9.	Electrical Loggers 2 Nos.	4.00
10.	Generators & Submersible pumps, welding sets, etc. ..	12.50
11.	Aerial Photos	9.00
	Total ..	175.00
<hr/>		

The procurement of these equipment will be done in a phased manner depending on the flow of funds, release of foreign exchange, etc.

Co-ordination :

Close co-ordination between the agricultural department and irrigation department is necessary for exploiting surface irrigation potential. Further greater co-ordination between Land Mortgage Banks, Rural Electrification and Ground Water Departments is essential

for scientific and rapid exploitation of ground water potential. This is proposed to be ensured at operational and field levels.

Social Justice :

In selecting minor irrigation schemes every effort is made to ensure that these are taken up in areas which are not benefited by major and medium irrigation programmes. Where there is a choice in regard to surface minor irrigation programmes, projects benefiting the small farmers would be given priority. Further, in financing the ground water development, preference will be given to small farmers.

CENTRAL SECTOR SCHEMES :

Special programmes in the D.P.A.P., S.F.D.A., M.F.A.L.A. areas for minor irrigation particularly ground water are expected. Full exploitation of all these sources is proposed though identification of individual schemes and the total magnitude resulting there from are expected to be available only at a later stage.

Statement showing schemes proposed under Master Plan.

Name of the district.	M.I. Schemes sanctioned but not put on ground,			M.I. Schemes under investigation category.			M.I. Schemes yet to investigate as per Master-Plan category.		
	No.	Ayacut. (acres)	Cost in Rs. lakhs.	No.	Ayacut. (acres)	Cost in Rs. lakhs.	No.	Ayacut. (acres)	Cost in Rs. lakhs.
1, Srikakulam ..	1	1,800	15.60	85	19,778	287.33	83	28,319	279.83
2, Visakhapatnam ..	10	1,668	19.96	45	10,875	130.50	2	347	4.17
3, East Godavari ..	28	14,667	176.00	10	8,089	37.07	73	14,092	169.10
4, West Godavari ..	3	1,424	17.09	21	9,892	117.80	48	61,801	194.16
5, Krishna ..	10	2,606	31.27	29	12,808	147.70	18	1,924	23.09
6, Guntur ..	11	2,767	33.20	40	14,811	177.73	26	4,190	50.28
7, Nellore ..	38	8,598	103.18	78	17,581	211.90	28	2,822	33.86
8, Prakasem ..	80	4,194	50.83	48	17,333	196.60	23	8,884	104.21
9, Hyderabad ..	12	1,697	20.33	11	6,028	72.33	5	1,686	16.39
10, Medak ..	37	4,199	50.33	8	2,847	31.76	6	1,210	14.52
11, Nizamabad ..	19	1,525	18.80	66	23,784	235.40	36	5,706	68.47
12, Adilabad ..	71	13,200	158.40	84	26,747	320.96	210	87,688	1,051.60
13, Warangal ..	8	1,918	23.01	29	12,398	154.78	72	18,797	165.55
14, Karimnagar ..	26	3,324	45.94	51	12,612	151.84	146	18,701	224.41
15, Nalgonda ..	12	3,855	46.26	5	3,351	40.21	5	225	2.70
16, Khammam ..	12	2,305	24.06	33	15,102	181.23	166	40,734	488.80
17, Mahabubnagar ..	6	1,255	13.06	14	4,816	57.79	29	7,282	87.380
18, Kurnool ..	9	3,072	36.86	82	13,467	1,616.60	94	27,567	330.80
19, Anantapur ..	..	..	..	3	817	9.80	25	3,871	46.45
20, Cuddapah ..	9	2,139	28.08	19	20,171	242.05	..	..	..
21, Chittoor ..	8	1,323	18.30	64	14,870	178.44	38	4,194	53.33
Total ..	849	77,468	929.69	720	2,61,980	3,148.82	1120	2,68,844	3,409.11

4. SOIL CONSERVATION.

The value of Soil Conservation lies in terms of the preservation of valuable top soil on the one hand and retention of moisture on the other which, in the long run, has a productive role in terms of higher yields especially in dry areas. Further, appropriate soil conservation measures are necessary to avoid silting of the irrigation works. In its ideal setting the whole areas should be covered by appropriate soil conservation and continuous scientific maintenance. However in view of the enormous magnitude of the problem and the scarcity of resources, certain amount of selectivity in the programmes of soil conservation and phasing have to be considered. Andhra Pradesh has a number of irrigation projects and also substantial areas liable to recurrent drought. These two considerations have been given priority in selecting soil conservation programmes in the State Plan.

Most of the dry areas in the Telangana and Rayalaseema regions and the agency areas of East Godavari and Visakhapatnam districts being located in undulating terrain are subjected to various degrees of soil erosion and run-off losses. The yield potential from these areas is being gradually reduced due to loss of fertile top soil and unless this is prevented, the other inputs like improved seed, fertilizers and better cultivation practices will not have any optimal impact on crop production. The soil erosion has also been causing rapid siltation of the tanks and reservoirs, thus reducing their irrigation potential. Soil conservation measures will be useful in both red soils as well as black soils. The red soils due to their poor texture can not retain rain water, whereas black soils can retain moisture. But if the moisture availability in the black soils is not adequate the crop suffers due to non-penetration of roots. Thus low moisture retention and low moisture availability are both harmful for crop growth. The problem of soil erosion is rather severe in red soils and requires immediate attention.

The Agricultural Department conducted a Quick Reconnaissance Survey in 1970 to assess the extent of soil erosion in different parts of the State and the measures required to remedy the situation. The survey revealed that a total of 80.13 lakhs hectares of cultivated land needs soil conservation measures in one form or other. The distribution of land needing soil conservation measures according to the severity of erosion is given below :

(lakh hectares)

1. Severly eroded (more than 50% of the top soil lost) .. 23.07
2. Moderately eroded (25 to 50 %of the top soil lost) .. 46.13
3. Slightly eroded (less than 25% of the top soil lost) .. 10.93

Total .. 80.13

REVIEW :

The total expenditure in all the earlier plans put together upto the beginning of Fourth Plan was Rs. 3.97 crores and the expenditure during the Fourth Plan is likely to be Rs. 2.59 crores in the State. The area covered under soil conservation measures in agricultural lands upto 1968-69 was 2.21 lakh hectares and that likely to be covered in the Fourth Plan period is 1.29 lakh hectares taking the total area covered under various measures to 3.50 lakh hectares by the end of the Fourth Plan. Besides 720 hectares of Coffee plantations are likely to be raised in forest areas by the end of Fourth Plan. The following table shows the progress so far made and the enormity of the problem in the State .

Period	Total expenditure (Rs. in laks)	Area covered (lakh hectares)	Balance yet to be covered (lakh hectares)
Upto 1968-69 ..	397.00	2.21	77.92
Fourth Plan ..	259.15	1.29	76.68
Fifth Plan ..	*525.00	3.00	73.68

[*Including the provision for coffee and other plantations and training programme for soil conservation].

OBJECTIVES :

The objectives of Soil Conservation programme are :

- (a) to cover the dry farming areas on priority basis with soil conservation programmes to enable soil and moisture retention ;
- (b) to take up soil conservation works on priority basis in chronically drought affected areas not only as protective and productive ventures for agriculture but also as an activity which provides additional employment in the rural sector to the agricultural labour who are particularly under-employed in the dry areas ; and
- (c) to take up soil conservation in catchment areas of certain major irrigation projects to prevent silting.

STRATEGY :

The Strategy of Soil Conservation programme is that the programmes are taken up in dry areas on a complete watershed basis. This will necessarily be preceded by standard soil survey for the identification of priority areas.

Substantial reorientation relating to soil conservation programmes is proposed in the Fifth Plan not only in terms of integrating this with other programmes and making it on water-shed basis but also extending the concept of soil conservation to include water conservation. This would involve contour bunding, stone checks, stone terracing and bench terracing works, gully plugging and check dams wherever necessary. This wider definition of soil conservation to include deliberate measures for water conservation is a significant change contemplated in the Fifth Plan. While the greatest emphasis is given in the State Plan itself for the soil conservation programmes, the utilisation of Central Sector schemes on a substantial scale for this programme is also envisaged.

In terms of administrative arrangements, it has been found that at present agreements have to be collected from all the cultivators under the water-shed area which is proposed to be taken up for soil conservation programme. But in practice, it has been found difficult to get co-operation of all cultivators for taking up soil conservation programme on a complete water-shed basis. Since this is a community programme which gives maximum benefit when taken up on a complete water-shed basis, a legislation is contemplated by the Government to make it compulsory on the part of all the cultivators to take soil conservation measures wherever necessary. The legislation which is already at an advanced stage is likely to be passed early and would thus help substantially the soil conservation programmes.

PROGRAMME DETAILS :

The total Fifth Plan provision under various soil conservation schemes is Rs. 525 lakhs of which Rs. 400 lakhs is meant for soil conservation schemes on agricultural lands, Rs. 120 lakhs for schemes in forest areas and Rs. 5 lakhs for the Soil Conservation Training Centre.

The total area of agricultural lands vulnerable to soil erosion losses in the State is estimated at 80.13 lakh hectares of which the area likely to be covered by the end of Fourth Plan is 3.5 lakh hectares leaving a balance of 76.63 lakh hectares yet to be covered under various measures of soil conservation. During the Fifth Plan period a major step-up is contemplated and it is proposed to cover an area of 3.0 lakh hectares of agricultural lands under soil and water conservation measures including efficient water use management. The Fifth Plan programmes are proposed to be more comprehensive in nature to enable each piece of land being treated in a catchment depending on its requirement. Special emphasis will be laid on programmes meant for weaker sections and soil conservation programmes in agency areas will be intensified.

In order to augment the ground water resources in dry and arid zone areas, soil conservation measures are proposed to be taken up by way of growing pedigree fodder grasses in 2,500 hectares in drought prone areas.

In addition to the soil conservation measures on agricultural lands, there is need to cover the forest areas also by soil conservation measures to protect the irrigation works from silting.

In these areas it is also necessary to wean the tribals from the pernicious habit of shifting cultivation. For this purpose besides educating them in various agricultural practices it is proposed to encourage Coffee plantation by tribals. It is proposed to make up Coffee plantations on 800 hectares and Cashew and other plantations on 12,100 hectares.

There is a Soil Conservation Training Centre at Anantapur under the Agricultural University and it will be continued during the Fifth Plan period also.

5. AYACUT DEVELOPMENT.

In the National Approach to the Fifth Plan it is stated in regard to Irrigation that proper and timely steps should be taken for narrowing the gap between potential created and utilisation. For this purpose, adequate provisions should be made for distributions system (upto 1 asec) and drainage under the Irrigation Projects and for Area Development Programmes under the Agricultural Sector. For optimum production, it is necessary that, concurrently with the engineering works, measures are taken to facilitate agricultural development in the relevant command areas. These measures will include land shaping and land levelling, construction of field channels, introduction of suitable cropping pattern, intensification of extension services, strengthening of facilities for marketing, processing, demonstrations, storage, transport etc. The approach highlights organisational requirements for a coordinated effort.

In Andhra Pradesh, an irrigation potential of 24.06 lakh acres had been created upto the end of 1972-73 under major and medium projects but utilisation was only 15.00 lakh acres or 62.3 per cent of the created potential (vide Annexure-I). This gap represents substantial unutilised capacities with serious consequences in the context of capital shortages and inflationary situation. Any timely thrust to bridge this gap would be a quick yielding exercise.

The apparent gap between the potential created and the utilisation is sometimes due to conceptual and statistical difficulties. Thus, right from the beginning there have been discrepancies between the irrigated areas reported by the Public Works Department and the Revenue Department since the methods by which the areas are reported by these Departments differ. It is, therefore, necessary to reconcile these discrepancies and to evolve a common reporting method. The need for joint inspections for this purpose has also been mentioned elsewhere in this chapter. However, despite this, the fact remains that there is a real gap between the potential created and the utilisation under irrigation projects.

This gap could be attributed to a number of factors such as inadequate preparatory steps essential to enable the agriculturist to take water to their fields as soon as it became available for irrigation; lack of adequate and timely credit for procuring necessary inputs like seed, implements, fertilizers etc., shortage of physical inputs, non-excavation of field channels; unauthorised irrigation in upper reaches and unauthorised cultivation of wet crops in areas localised as irrigated dry; sheer non-availability of water due to design and estimate errors or defects invariably observed in localisation; and lastly inadequate infrastructural facilities like roads, storage, marketing etc. The approach in the State would therefore, be to attempt a multipronged attack on these problems involving programmes in Ayacut Development sector as also in other related sectors in the State Plan, Central Plans and institutional programmes.

REVIEW :

The following table indicates a review of the effort in the direction of Ayacut Development during the Fourth Plan period :

(Rs.in lakhs)

Department	Fourth Plan Provision	Anticipated expenditure.
STATE PLAN :		
1. <i>Director of Agriculture</i>		
Soil & Water management Techniques and Cropping patterns ..	37.30	32.81
2. <i>Director of Animal Husbandry</i>		
Key village Blocks and Cattle Breeding ..	24.87	23.83
3. <i>Registrar of Co-operative Societies</i>		
Land Development* ..	687.24	391.42
4. <i>Board of Revenue</i>		
Localisation, Field channels etc. ..	305.20	212.06
5. <i>Chief Engineer, Major Irrigation</i>		
Ayacut Roads ..	157.14	110.10
6. <i>Inspector-General of Registration and Stamps</i>		
..	9.47	9.02
7. <i>Agricultural University (Agricultural Extension and Research)</i>		
..	11.73	7.14
Total (1 to 7) :	1232.95	786.38
CENTRAL SECTOR :		
1. <i>Market Roads</i>		
(a) Pochampad Project ..	130.00	130.00
(b) Nagarjunasagar Project ..	117.35	108.45
	247.35	238.45
2. <i>Development of Markets</i>		
..	64.10	40.10
Total (1+2)	311.45	278.55

* Represents State Government share of contribution towards debenture participation in Land Mortgage Banks. The total loan assistance through Land Mortgage Banks will be four times this amount.

TOTAL DIMENSIONS :

So far, the Ayacut Development programmes have been taken up only in respect of a few major projects. It is only in respect of Pochampad that ayacut development has been taken up as an integral part of the project. But it is necessary that ayacut development programme should cover all the major and medium irrigation projects, especially those which have been completed but under which there is considerable under-utilisation of potential. A rough estimate places the requirements of ayacut development programme at about Rs. 30 to 40 crores for land development, Rs. 45 crores for ayacut roads and Rs. 6 crores for field channels. The total cost of drainage and seepage schemes for Nagarjunsagar Project alone is estimated at Rs. 83 crores, Rs. 59 crores for Right Canal and Rs. 24 crores for Left Canal. In addition, programmes in related sectors particularly Agriculture, Animal Husbandry and Industries need to be taken into account. During the Fifth Plan, the problem would be to tackle about 7 lakh acres of unutilised potential which was already created and another 20 lakh acres of new potential that would be newly created during the Fifth Plan.

It will be seen that for full and proper utilisation of the irrigation potential fairly heavy investments are required on the building up of the infrastructure in addition to the already heavy investments that would have been made on the irrigation project itself. However, it has to be borne in mind that these are areas which are already fortunate in being within the command of the large irrigation projects. At best not more than about 40 per cent of the total area will be in this fortunate position. It would therefore not be correct that these areas which are already blessed with surface irrigation should be further subsidised for the full exploitation of the advantages available to them. Some method whereby these costs are at least recovered from the beneficiaries be devised so that there is no subsidisation of these fortunate areas by the rest of the State, would have to be considered.

OBJECTIVES AND STRATEGY :

The primary objective of Ayacut Development is expeditious utilisation of the potential created since the purpose of creating the potential incurring considerable outlays would be defeated if optimum utilisation of the potential is not achieved.

Further in the case of irrigation potential that would be created during the Fifth Plan period also a programme of ayacut development aims at ensuring immediate utilisation through timely construction of field channels, levelling of land and provision of infrastructural facilities like roads etc.

Broadly, development of ayacut involves four different stages viz., land development, agricultural development, development of infrastructural facilities and protein development. The strategy of ayacut development appropriate for the different stages is discussed below :

(i) *Land development :*

(a) *Pre-irrigation soil survey :*

This is necessary in order to assess the area fit for irrigation, the

area which can be reclaimed through irrigation and the possibility of rise in water table and consequential water-logging.

(b) *Localisation :*

Under localisation, generally black soils should be localised as wet and red soils as irrigated dry and topography should also be taken into account for localising heavy and light irrigated crops.

(c) *Pipe-wise land levellings :*

In future, land levelling should be done on a pipe wise basis thus shaping atleast an area of about 100 acres on a scientific basis. Grid survey and preparation of plans on pipe-wise basis and provision of long term loans for land levelling or shaping either mechanically or by manual labour will therefore, be necessary in a more organized manner than at present. This process should start atleast one year before water reaches the area and the work should normally be completed by the time water is let out.

(d) *Excavation of field channels :*

In the case of large projects and in certain areas where the land is undulating, it may not be possible for the farmers to dig channels on a scientific basis on their own even after the 25 acre limit now prescribed to be done by the Public Works Department. Irrigation channels have to be dug with drops in such cases and this is not within the engineering capability of the ordinary farmer with small holding. It, therefore, becomes necessary for Public Works Department or some other specialised agency to align the channel for each distinct block, however small it is. The limit, in some cases, upto which field channels may be dug may be the individual holding. The cost of excavating such field channels and the cost of detailed survey may be backcharged to the Revenue Department and later collected from the ryots.

(ii) *Agricultural Development :*

This would deal with provision of Short-term credit for inputs like seeds, fertilisers, pesticides and improved implements. The introduction of multiple cropping and scientific methods of water management and plant protection measures would follow. Wherever there is a marked tendency among the farmers to adhere to traditional practices a special responsibility should be cast on agricultural extension staff to persuade the farmers to take to modern farming. Under large projects sanction of adequate extension staff would be necessary.

(iii) *Development of infrastructural facility :*

Increase in agricultural production results in increased demands on storage space, transport and marketing facilities etc., and construction of roads, godowns, market complexes and agro-based industries for processing such as rice mills, groundnut decorticator etc.

(iv) *Protein development :*

This would deal with the development of cattle, fisheries, etc., to ensure an integrated overall total development of all inhabitants

of the area benefitted by irrigation and to provide better food for them by developing and providing animal protein such as milk, meat, poultry, fish etc.,

PROGRAMME DETAILS :

The programme details for ayacut development could be discussed for convenience, in terms of (a) Sectors in which the ayacut development is conventionally discussed, (b) the supplementary measures proposed and for which allocations are made here. In addition, certain specific provisions are indicated in the various sectors to supplement these efforts and these are explained in the section on 'inter-sectoral linkages.' Further the magnitude of the problem is such that a massive central programme is envisaged as indicated in a later section.

(a) Outlay on conventional items :

The distribution of the Fifth Plan allocation for conventional items is indicated below :

<i>Item</i>	<i>(Rs. in Crores)</i>	
1. Construction of field channels	..	5.50
2. Formation of ayacut roads	..	9.25
3. Seepage and drainage	..	3.25
4. Contribution towards debentures of Co-operative financial institutions	..	9.00
		<hr/>
Total	..	27.00
		<hr/>

Out of an allotment of Rs. 18 crores for items (1) to (3) above, an amount of Rs. 14 crores is earmarked for projects which are under execution while Rs. 4 crores has been set apart for the development of ayacut of already completed projects. The allotment of Rs. 14 crores for projects under execution consists of a provision of Rs. 5 crores for construction of field channels in an area of 10 lakh acres, Rs. 8 crores for formation of 1300 to 1400 kms. of ayacut roads and Rs. 1 crore for drainage and seepage.

The provision for field channels and ayacut roads has been allocated between Nagarjunasagar, Pochampad and other projects in

the ratio of 10 : 5 : 3 broadly in proportion to the ayacut under these projects as shown below :

<i>Projects</i>	<i>(Rs. in crores)</i>		
	<i>Field Channels</i>	<i>Ayacut Roads</i>	<i>Drainage & seepage</i>
1. Nagarjunasagar	.. 2.75	4.45	} 1.00
2. Pochampad	.. 1.40	2.25	
3. Other Major Irrigation Projects	0.85	1.30	
Total :	.. 5.00	8.00	1.00

The problem of drainage and seepage has not hitherto been attended to and a small beginning is proposed to be made during the Fifth Plan. The amount of Rs. 1 crore earmarked for the purpose will be allocated to the projects under execution according to the needs that might arise from time to time.

Completed Projects :

There is still a wide gap in the utilisation of potential created under several major and medium irrigation projects and therefore a provision of Rs. 4 crores has been made for ayacut development programmes of these completed projects in Fifth Plan period. This amount is equally divided between major and medium projects. The major projects to be covered by the programme include Tungabhadra Low Level Canal, Tungabhadra High Level Canal Stage I, Kurnool-Cuddapah canal, Rajolibanda Diversion Scheme and Krishna Barrage. The breakup of allocations for major and medium projects which have already been completed is indicated below :

<i>Item</i>	<i>(Rs. in lakhs)</i>	
	<i>Major Projects</i>	<i>Medium Projects</i>
1. Ayacut Roads	.. 50.00	75.00
2. Field channels	.. 25.00	25.00
3. Drainage and seepage	.. 125.00	100.00
Total :	.. 200.00	200.00

Excavation of field channels is not a major problem in the case of many of the completed projects since they have already been excavated upto 25 acres limit generally. The main problem is drainage and seepage under these projects. Lining of certain reaches of the main canals and distributaries specially identified for heavy losses of water will result in conserving water which will enable further development of ayacut.

So far as institutional finance is concerned in respect of which Rs. 9 crores has been provided as the State's contribution by way of debentures, the total amount of loan assistance to be extended to ayacutdars would be of the order of about Rs. 36 crores towards land levelling and development.

Allocations under related sectors :

Besides the above allocations, specific allocations have been indicated for taking up schemes under Agriculture and Animal Husbandry which are closely related sectors, for an additional outlay of Rs. 3.13 crores as indicated below :

<i>Schemes</i>	<i>(Rs. in lakhs)</i>
Agricultural schemes	208.00
Agricultural University	20.00
Animal Husbandry	85.00
Total	313.00

The agricultural schemes relate to agricultural extension in project areas while those of Animal Husbandry cover-cattle, sheep and poultry development and establishment of veterinary institutions in ayacut areas. Thus the total allotment required for ayacut development programmes for the Fifth Plan is of the order of about Rs. 30.13 crores.

Government of India have appointed committees for preparing guidelines on integrated ayacut development including creation of special agencies for its purpose. The details of programmes for utilising the provision of Rs. 208 lakhs made for agricultural schemes will be worked out after the detailed recommendations of the committees are made available. These schemes include soil testing and soil surveys, supply of inputs, propagation of improved cultivation practices through composite demonstrations, etc.

There are at present two Agricultural Research Stations under the Agricultural University at Amaravathi and Darsi for evolving suitable short duration varieties of groundnut and cotton crops in the Nagarjunasagar Ayacut area. Besides continuing these schemes, it is proposed to cover Pochampad area also by conducting similar research trials in respect of crops suitable to the area, in the Fifth Plan for which an amount of Rs, 20 lakhs is provided.

Under Animal Husbandry programme a sum of Rs. 85 lakhs is provided for the development of cattle, sheep, poultry and animal health in the ayacut areas of Pochampad, Nagarjunasagar and Tungabhadra Projects. The amounts earmarked for the development of cattle is Rs. 67.80 lakhs, sheep Rs. 2.00 lakhs, poultry Rs. 0.20 lakhs, and for animal health Rs. 15.00 lakhs.

INTER-SECTORAL/DEPARTMENTAL LINKAGES :

Ayacut development involves integrated development of the project areas by under taking simultaneous programmes for action in related sectors as well as in the same sector by different agencies. For instance, in the case of roads, apart from the provision made for ayacut roads in the Fifth Plan villages with more than 1,500 population which are not connected by any roads at present would be covered by the programme for rural roads under the Minimum Needs Programme while a provision of Rs. 300 lakhs has been made for improvements to P.W.D. roads in Nagarjunasagar ayacut area. While market roads are being taken up in the Central sector, the Fisheries Department has also made a provision of Rs. 47 lakhs for establishment of Fish farms in project areas. Similarly other departments like Marketing, Industries, Stamps and Registration have to make suitable allocations in the respective sectors for schemes in ayacut areas. It is also necessary that the Groundwater Directorate should explore the scope for digging wells in ayacut areas to provide supplemental irrigation. The computation of estimates of area and production separately for ayacut areas, according to each source of irrigation, would involve co-ordination between the Public Works Department, Revenue and Statistical organisations. It is necessary to have closer co-ordination between these different agencies at the project level as also at the State level, besides associating representatives of institutional agencies like co-operatives and commercial banks, etc. The administrative and organisational matters relating to this aspect are discussed in the following section.

ADMINISTRATIVE/(ORGANISATIONAL ISSUES ;

(a) *Legislation:*

One of the important legislative measures suggested is to compel the ayacutdars to take up land shaping and alignment of irrigation and drainage channels on the lines of the plans prepared by the Land Survey and Development Units. Further the scope for consolidation of holdings through extension and persuasion should be explored before considering recourse to legislation.

If policy decisions are taken regarding recovery of the cost of the auxiliary developmental programmes and the recovery of betterment in the shape of taking over surplus land these will also require legislation.

(b) *Water management :*

Adequate and proper control over distribution of water would require, apart from greater consideration to general issues such as date of closure of water, scope for sprinkler irrigation, strengthening of administrative machinery for regulation and control. In particular the interests of farmers in tail end area have to be safeguarded.

(c) Multi-denominational development teams :

The work in different phases of ayacut development mentioned in an earlier section has to be done by the field staff of different departments at the grass-root level. It is therefore necessary to constitute Multi-denominational development teams consisting of the representatives of various departments namely : Revenue, P.W.D., Agriculture, Co-operation, Agro-Industries, Land Mortgage and Co-operative Credit Bank. The Representative of Agricultural Department may be the leader of the team, as he will continue to be present in each of the four stages of development. The representatives of other departments will be changing depending upon the needs in each stage of the development.

(d) Co-ordination :

Ayacut Development is an exceedingly complicated task requiring a high degree of organisational and administrative co-ordination between the services handled by different Government Departments. The Irrigation Department no doubt provides the water, but teaching the farmer how to make prompt and efficient use of it, is a task for the technical and extension services of Agricultural Department. Ayacut Development calls for assistance of the State's Departments of Agriculture, Animal Husbandry, Co-operation, Community Development and Public Works and various institutions such as the Central and State Warehousing Corporations, the Long term and short term Co-operative Banks, Marketing Institutions both Departmental and Co-operatives etc. It was suggested that a Central Co-ordinating authority might be established and it might be a Collector or Sub-Collector/Revenue Divisional Officer or Senior Agricultural Officer depending on the size of the project. In the case of large projects a separate authority will be necessary to co-ordinate the task of total development of the project area. For proper supervision and control over these agencies the State Level Bodies for ayacut development should be activated and special co-ordinating cell for secretariat assistance considered.

(e) Collection of Statistics :

A proper assessment of the marketable surpluses of agricultural produce in the ayacut areas is also necessary for determining the scale on which marketing, storage and procurement programmes, should be undertaken as well as volume of stand-by credit required by the farmers who propose to wait for a fair price. Apart from this, an assessment of production is required for the evaluation of the programme itself. It is, therefore, necessary that crop cutting experiments should be conducted in the ayacut areas, for determining crop yields under each source of irrigation, besides ensuring that the particulars regarding irrigated area under each crop for all the crops raised in an year (including second and third crops) are properly booked. The statistical organisation in the State has to be suitably strengthened for this purpose and arrangements made for reconciliation of figures of irrigated area through joint "*Ajmaish*" by Revenue and P.W.D. staff at the field level besides systematic verification of the same by statistical staff.

ROLE OF AGENCIES :

The scope for institutional finance to market committees and other local bodies through Agencies like Agricultural Refinance Corporation for the purpose of laying market roads and construction of storage facilities needs to be explored.

SPECIAL FEATURES :

Keeping in view the need for protecting the interests of poorer and weaker sections of society and the overall resource constraint preference for small and marginal farmers in provision of assistance is called for. Emphasis should be laid in all loaning programmes on ensuring productive investment than security and on appropriate reconciliation between banking approach and social justice. Full particulars of small and marginal farmers in all project areas should be collected through a proper, systematic and quick survey of the project areas. Specific guidelines and appropriate procedures for giving preference to these sections should be designed, at the national and State levels, if necessary, but specifically at the project level.

The Task Force on Agrarian Relations set up by the Planning Commission has suggested in its report that instead of the betterment levy being collected in cash, the beneficiaries having a holding above a certain minimum may be required to part with a portion of the land that has benefitted from the project. This would make irrigated land available for distribution to marginal farmers and landless labourers in the command areas as well as those areas that might have been affected by the submergence under the project. The Task Force has also opined that since one of the reasons for under-utilisation of the potential is the difficulty experienced by the land owners to fully develop their entire holdings where they are large, such a measure would also expedite full utilisation of the potential besides ensuring social justice. These aspects would therefore, also have to be considered.

CENTRAL SECTOR SCHEMES

At present, the laying of ayacut roads in Pochampad Project ayacut and Market roads in Nagarjunasagar ayacut is financed by grants from Centre also. The requirements of ayacut roads for Pochampad Project for the Fifth Plan period is Rs. 5.30 crores out of which Rs. 1.30 crores, is for areas covered under World Bank loan and another Rs. 4 crores for areas beyond Stage I. Under Nagarjunasagar Project, the balance of cost of market roads to be taken up in the Fifth Plan period works out to about Rs. 7 crores and this amount has to be provided. So far the development of markets is concerned, as against Rs. 64.10 lakhs which the Government of India agreed to provide during the Fourth Plan period, the anticipated outlay works out to Rs. 40.10 lakhs leaving a balance of Rs. 24 lakhs. In addition an amount of Rs. 47 lakhs is required for the development of markets in Nagarjunasagar, Pochampad and Tungabhadra Project areas in the Fifth Plan period. Thus the requirement of Marketing schemes for the Fifth Plan period works out to Rs. 71 lakhs.

As far as new projects are concerned, the requirements of drainage and seepage for Nagarjunasagar Project alone is estimated at about Rs. 88 crores (Rs. 59 crores for right canal and Rs. 24 crores for left canal). In view of the large amount involved and the importance of the programme for optimum development of ayacut, the Centre may have to finance a substantial proportion of the outlay. Tentatively the following requirements are indicated for the Fifth Plan under Central Sector schemes :

<i>Items</i>	<i>(Rs. in crores)</i>
1. Ayacut Roads under Pochampad Project ,	5.80
2. Market roads under Nagarjunasagar Project	7.00
3. Market roads under Tungabhadra Project ..	..
4. Development of markets	0.71
5. Drainage and Seepage	Further indication of central policy regarding financial assistance is awaited. The requirements of Nagarjunasagar project amount to Rs. 88 crores.

ANNEXURE I.

*Irrigation potential and utilisation.**(Lakh acres),*

Projects.	Year.	Existing position (end of June)		Total irri- gation po- tential anticipated by end of	
		Potential	created	Utilisation	Fourth plan	Fifth plan
(1)	(2)	(3)	(4)	(5)	(6)
I. MAJOR & MEDIUM IRRIGATION :					
1. Nagarjunasagar Pro- ject	1971-72	10.07	5.58	10.32	20.54
2. Pochampad Project ..	..	0.25	0.09	0.46	6.60
3. Other Major & Me- dium projects ..	1972-73	11.25	9.33	11.97	15.17
Sub-Total		24.06	15.00	22.75	42.31
II. MINOR IRRIGATION :					
1. P.W.D.	1971-72	12.75	12.75	13.80	19.58 (includes stabilisa- tion).
2. Panchayati Raj .. ..	..	1.42	1.42	1.42	3.42 (Stabilisa- tion only).
Sub-Total ..		14.17	14.17	14.72	22.95
Grand Total ..		38.23	29.17	37.47	65.26

ANNEXURE II.

*Infrastructural facilities.**(a) LOCALISATION :**(Lakh acre),*

Project.	Total Ayacut.	Area localised
1. Nagarjunasagar Project ..	20.54	19.39
2. Pochampad Project	6.60	4.50 (Balance area being localised).

ANNEURE—II—(Contd.)

(b) FIELD CHANNELS :

(Rs. in lakhs).

Project.	Total length. (K.m.)	Cost.	Anticipated expenditure to the end of Fourth Plan.	Balance.	Fifth plan. provision
1. Nagarjunasagar Project	.. 16,350	475.00	176.50	298.50	275.00
2. Pochampad Project	.. N.A.	198.00	18.00	180.00	140.00
		673.00	194.50	478.50	415.00*

* In addition, an outlay of Rs. 85 lakhs is allotted for other projects under execution and Rs. 50 lakhs for already completed projects making a total of Rs. 550 lakhs.

(c) ROADS :

(Rs. in lakhs).

Project.	Total cost.	Anticipated expenditure to end of Fourth Plan.	Fifth Plan. provision
1. Nagarjunasagar Project :			
(a) Ayacut Roads	.. 1,550.00	78.00	445.00
(b) Market Roads	.. 884.00	135.00 Exclusive of Roads taken by C.E. (R. & B.).	
	2,384.00	213.00	
2. Pochampad Project	.. 854.00	147.00 Inclusive of cost on establishment.	225.00
3. K. C. Canal	.. 575.00	} 132.50	130.00
4. Tungabhadra High Level Canal	145.00		
5. Tungabhadra High Level Canal (Stage I).	210.00		
6. Tungabhadra High Level Canal (Stage II).	.. 240.00		
7. Bhairavani Thippa	.. 52.00		
	4,460.00	492.50	800.0 *

* In addition, a provision of Rs. 125 lakhs is made for already completed projects making a total of Rs. 850 lakhs for the Fifth Plan period.

6. ANIMAL HUSBANDRY.

In the National approach to Fifth Plan, Animal Husbandry is considered a priority sector for four main reasons, firstly at present this sector is contributing very little to National Income though there is a vast scope for increasing its contribution by sustained and increased efforts; secondly it is likely that there will be a shift from the use of cereals to livestock products in the consumption pattern; thirdly a step up in the per capita consumption of milk in view of the emphasis on the nutrition programmes and child health, and finally the sector plays a vital part to increase the well being of the small and marginal farmers and agricultural labour.

Animal Husbandry and Dairying form the major components in the 10 employment intensive programmes listed out in the Approach Paper for the Fifth Plan. Development of Animal Husbandry and Dairying is closely inter-twined with one of the items of the Minimum Needs Programme, namely "Minimum public health facilities integrated with family planning and nutrition of Children" apart from providing expanding opportunity for rural employment. Increased production of milk and eggs is necessary for fulfilling the programme of founding nutrition to children as contemplated.

The National Commission on Agriculture in their interim report on Milk Production through Small and Marginal farmers and Agricultural Labourers have emphasised the importance of enhancing milk production rapidly by undertaking integrated cattle and dairy development programmes. The National Commission on Agriculture have recommended that feed subsidy should be provided to the small and marginal Farmers for the cross breed cow and the improved buffalo calves in 107 districts. The national policy for development of the weaker sections of the farm population also dictate large scale adoption of mixed farming by the small and marginal farmers. About 70 to 75 per cent of the households maintaining cattle falls under this category. Surveys show that small farmers can derive from 20 to 60 per cent of their total farm income from cattle keeping and dairying. The increase in incomes by adoption of mixed farming can be as high as 61 per cent. A rapid and large expansion of improved milk cattle has, therefore, to be accorded high priority to improve the economy of the weaker sections of the rural population.

The total live-stock population in the State as per the 1966 Live Stock Census is 31.6 million, of which sheep was 8 million and buffaloes 6.8 million. The poultry population was 14.7 million. The State had the highest poultry population in the country and second highest population in sheep and buffaloes. It stood fifth place in cattle population. As per the latest 1972 Live Stock Census (provisional) the total live-stock was 32.9 million and the sheep and buffaloes constitu-

ted 8.2 and 7.00 million respectively. The poultry population was 18.8 million. Except in the case of poultry the increase in other categories was only marginal.

The approach of the State during the Fifth Plan would be firstly to concentrate on general minimum facilities for improved breeding, general extension and to some extent fodder development; both of these, being co-ordinated with the Dairy Development Programme; secondly to provide adequate and universal provision of animal health facilities; thirdly to provide proper marketing facilities and assistance for gainful avocation to small and marginal farmers and agricultural labour by integrating with the schemes like Small Farmers Development Agency, Marginal Farmers and Agricultural Labourers Development Agency, etc. Thus, in a nutshell the approach will involve providing general minimum facilities over the whole area, and improved and concentrated efforts in select areas with package programmes.

REVIEW :

The expenditure on Animal Husbandry Sector during Second Plan was Rs. 235.72 lakhs, in Third Plan Rs. 109.74 lakhs, in the three Annual Plans Rs. 148.73 lakhs and the anticipated outlay in the Fourth Plan is Rs. 189.77 lakhs excluding Rs. 20.31 lakhs of Telangana Regional Committee Funds and Rs. 23.83 lakhs for ayacut development.

The following table indicates the physical targets and achievements in the Fourth Plan :

Sl. No.	Name of the Scheme.	Targets of Fourth Plan.	Achievements.
1. (a) Intensive Cattle Development Projects :			
	(i) Large Scale	1	1 I.C.D.B. with H.R.C.D.
	(ii) Medium	1	2 R. & D. Units
	(b) Key Village Blocks (New) ..	32	8
	(c) Key Village Blocks (Expansion).	16	5
	(d) Bull Breeding Farms ..	1	..
	(e) Establishment of centralised semen collection centres.	3	3
2.	Cattle Breeding Farms (Expansion).	11	5
3.	Sheep Breeding Farms (Reorganisation and Expansion)	3	1
4.	Sheep and Wool Extension Centres (Expansion).	25	11

(1)	(2)	(3)	(4)
5. Poultry Marketing Centres ..	6	4	Main centres with sub-centres.
6. Poultry Breeding Farms (New) ..	1	..	..
7. Feed Mixing Plants ..	1	8	
8. Hospitals and Dispensaries ..	115	91	
9. Rinderpest Check Posts ..	..	3	
10. Vigilance Units ..	..	3	
I.C.D.B.	.. H.R.C.D.	R. & D.	

It may be seen that there has been heavy shortfall in respect of establishing of new key village centres and expanding of existing key village centres. Also there was shortfall in the expansion of cattle breeding farms, expansion of sheep and wool extension centres and establishment of hospitals and dispensaries. There has been a heavy shortfall in the performance compared to the targets contemplated in the Fourth Plan. The shortfalls have been primarily attributed to the increase in cost.

OBJECTIVES :

The objectives for the Fifth Plan in Animal Husbandry Sector may be summarised as :

- (1) to ensure adequate production of milk enabling dairy development programmes through cattle development programmes ;
- (2) to increase the production of animal proteins for provision of meat and eggs, through sheep, poultry and piggery development programmes;
- (3) to design the programme in such a way that the small and marginal farmers particularly agricultural labourers and Scheduled Castes and Scheduled Tribes derive maximum benefit ;
- (4) to improve the animal health facilities enabling adequate support for programme ; and
- (5) to ensure hygienic conditions in slaughter houses in towns and cities ensuring quality supply of meat.

STRATEGY :

The primary objective being supply of full and wholesome milk rich in protein content, it is necessary to intensify the cattle development programme by :

- (a) establishing large and medium scale intensive cattle development blocks in areas with potentialities for development and also in backward areas to give a fillup in cattle development ;
- (b) opening four more key village blocks, strengthening and opening of artificial insemination centres, centralised semen collection centres for cross breeding ;
- (c) developing pasture areas and establishing feed mixing plants and strengthening of existing feed mixing plants to supplement feed for the cattle ;
- (d) Training of farmers in improved methods of breeding, feeding and management of cattle in order to give a substantial momentum for cattle development programmes and in order to supply the animal proteins to bridge the gap between the existing levels of consumption and the standards suggested by the National Advisory Committee, it is necessary to take steps in terms of ;
 - (a) establishing intensive sheep and poultry development projects ;
 - (b) strengthening and setting up of sheep, poultry piggery and duck breeding farms ; and
 - (c) providing marketing facilities through establishment of Regional Marketing Federation.

In order to encourage the agricultural labour to take active part in Animal Husbandry programmes, it is proposed to ensure supply of milch cattle and breeding bull and sheep units particularly to Scheduled Castes and Scheduled Tribes.

It is also proposed to improve the Animal Health as a support to development programmes by :

- (a) establishing and upgrading of veterinary hospitals and institutions ;
- (b) Strengthening research activities including establishment of clinical laboratories ;
- (c) Supplying anti-helmenthic drugs and other chemicals ;
- (d) imparting advanced training for Officers, Veterinary Livestock Inspectors and Veterinary Compounders ;
- (e) providing subsidy and credit facility to private practitioners so as to supplement governmental activities ; and
- (f) providing ambulance facilities and mobile squads in the districts.

The objective of improving the quality of meat supplied requires, provision of whole time services of Veterinary Assistant Surgeons and compounders for 21 district headquarter towns. Further it is necessary to contribute Government's share to the model slaughter house in the metropolitan city of Hyderabad.

Establishment of animal bye-product centres is also essential. Adequate attention to marketing is a pre-condition for success of the programme.

PROGRAMME DETAILS :

The following table shows the provision for Fifth Plan programmes and anticipated expenditure in Fourth Plan :

(Rupees in Lakhs)

Scheme.	Anticipated Expenditure in Fourth Plan.	Provision in Fifth Plan.
(1)	(2)	(3)
(1) Cattle Development including Feed and Fodder Development.	44.50	331.00
(2) Sheep Development	11.53	40.00
(3) Poultry Development	19.39	40.00
(4) Piggery Development	2.44	7.00
(5) Animal Health	62.44	84.00
(6) Slaughter Houses and Animal by-product centres.	..	26.00
(7) Strengthening of administrative set up	3.50	18.00
(8) Establishing Marketing Board .. ..	..	4.00
R.D.B. Funds	33.29	..
TOTAL :	177.09	550.00

The following table shows the level of development in the year 1968-69, anticipated achievements at the end of the Fourth Plan and targets for the Fifth Plan :

Comparative position of some important schemes.

S.No.	Schemes.	Level in 1968-69.	Likely position at the end of Fourth Plan.	Targets for Fifth Plan.
(1)	(2)	(3)	(4)	(5)
1.	Intensive Cattle Development Blocks (including Medium Sized Blocks).	2	3	5
2.	Key Village Blocks	.. 33	41	17
3.	Cattle Breeding Farms	.. 10	10	..
4.	Sheep Breeding Farms	.. 2	3	..
5.	Sheep and Wool Intensive Centres.	22	33	20
6.	Bacon Factories ..	.. 1	1	..
7.	Poultry Breeding Farms	.. 22	14	..
8.	Feed Mixing Plants	.. 3	5	1
9.	Intensive Egg and Poultry Production and Marketing Centres.	3	8	5
10.	Veterinary Hospitals and Dispensaries.	469	560	53

Cattle Development :

It is proposed to start a large scale intensive Cattle Development Block in Visakhapatnam and Konaseema, 8 medium sized Intensive Cattle Development Blocks at Nellore, Chittoor, Nandyal, Anantapur, Nizamabad, Mahabubnagar, Nalgonda and Karimnagar (Pochampad Project) at a cost of Rs. 236.00 lakhs.

Taking into consideration the excellent potential for dairy development in Konaseema area (East Godavari district) and in view of the ready market being made available with the setting up of Horlicks

Factory, organisation of Konaseema Co-operative Milk Producers' Union is being envisaged for providing the necessary inputs to bring about development of cattle and Buffaloes in the area. This can be the beginning of such Co-operative Milk Union to be started in the State.

It is also proposed to open 17 key Village Centres during the 5 years at a cost of Rs. 30.00 lakhs. Artificial Insemination Centres are considered essential in all Veterinary Institutions with good accommodation at the rate of 50 centres per year at a cost of Rs. 7.50 lakhs.

In order to meet the increased needs of semen for the new Intensive Cattle Development Blocks and key village Blocks and Artificial Insemination Centres, it is proposed to strengthen the Centralised Semen Collection Centres at Kovur in Nellore district and shift the existing Centralised semen Collection Centres from Vijayapuri North to a central place like Nalgonda, and further strengthen it with suitable buildings, adequate number of bulls, equipment and staff. This Scheme costs Rs. 5 lakhs. The existing 13 Centralised semen collection Centres in the different parts of the state need further strengthening besides replacing the older bulls to keep pace with the growing demand of artificial insemination services. This scheme costs Rs. 5 lakhs.

A frozen semen bank is also proposed at a cost of Rs. 7 lakhs during this plan period. In order to popularise Coconut Milk Extender in the State, it is proposed to import the required chemicals from abroad at a cost of Rs. 1 lakh so that this system replaces the conventional method gradually in semen banks.

To produce more milk, pre-mixed feed in huge quantities is necessary to support the ever increasing milk population. It is therefore proposed to strengthen the Feed Mixing Plants at Bhongir and Karimnagar besides establishing a new plant at Nandyal at a cost of Rs. 16 lakhs. It is also proposed to develop pastures in 2,000 acres in forest areas in support of increased milk production at a cost of Rs. 3 lakhs.

It is proposed to strengthen the existing 10 Livestock Farms in the State at a cost of Rs. 10 lakhs by increasing the dairy herd, rear bull calves for supply to Semen Banks, bring more land under cultivation for fodder and grains producing surplus grass seeds for bringing more area under pasture.

A begining is to be made to train farmers in improved methods of breeding, management, fodder and pasture development at a cost of Rs. 50 lakhs.

Thus a total outlay of Rs. 331 lakhs is provided for cattle development alone during the fifth plan period.

Sheep Development :

Large parts of Telangana and Rayalaseema which come under dry farming zones are better suited for sheep development. Therefore it is proposed to start 8 Intensive Sheep Development Units covering

about 1.60 lakh breedable ewes. It is proposed to resort to cross breeding with dual purpose exotic breed like Corriedals from Australia. Sheep Co-operatives will have to be formed in all these 8 Intensive Sheep Development Units and any further replacement of additions of breeding or female stocks purchase of deworming drugs etc., will have to be undertaken through institutional finance. This scheme is to cost Rs. 28 lakhs.

It is proposed to strengthen the three existing sheep farms at a cost of Rs. 4 lakhs by bringing more area under fodder and pasture and rearing more number of stud rams to the full capacity of the farm.

It is also proposed to import exotic sheep from abroad to a tune of Rs. 5 lakhs.

Poultry development :

The Poultry Development had a meteoric rise in urban areas in the market potentials like Hyderabad, Vijayawada, Guntur, Visakhapatnam and Kurnool. Rayalaseema Development Board has recommended Puttur in Chittoor district, Sidhout in Cuddapah district, Gooty and Tadpatri in Anantapur district, Alur and Pattikonda in Kurnool district for poultry development. In Coastal Andhra, upland areas are suitable for poultry farming. In the above identified areas poultry units of 10 hens and one cock combined with the crossbreed cockrel distribution can be taken up intensively. Poultry Co-operatives are contemplated taking advantage of the refinance facilities. The Poultry Units are being extensively distributed to small and marginal farmers in Small Farmers Development Agency Marginal Farmers and Agricultural Labourers Development Agency areas in Srikakulam, Visakhapatnam, Nalgonda and Cuddapah districts and assuring marketing facilities.

Keeping the above points in view it is proposed to start 5 Intensive Poultry Development Projects in Srikakulam, Cuddapah, Nellore, Nalgonda and Nizamabad districts at a cost of Rs. 11 lakhs.

As people have already taken to broiler industry in the district of Visakhapatnam and Hyderabad it is proposed to establish two broiler dressing plants in these districts at a cost of Rs. 4 lakhs.

As the demand for supply of birds from Government Poultry farms is increasing with the progressive increase of the distribution programme under Panchayat Samithis, under SFDA/MFALDA Girijan Development Agencies and Special Rayalaseema Development schemes, the existing Regional Poultry Farms require to be strengthened in their layer and hatching capacity, besides upgrading the posts of Poultry Officers of Regional Poultry Farms, Saroornagar and Visakhapatnam to the level of Assisat Directors. This would cost Rs. 5 lakhs.

It is proposed to upgrade the indigenous Poultry population of SFDA/MFALDA areas by distribution of cross bred cockrels on exchange basis with indigenous cockrels and later on removal of indigenous hens, as the cross bred hen population builds up at a cost of Rs. 3 lakhs.

With the increasing number of commercial private poultry farms coming up, a highly specialised diagnostic service is essential to prevent the farmers from incurring losses. An on-the-spot diagnosis within the farm limits is expected by the poultry farmers so that immediate remedial measures are taken up averting high mortality. It is therefore, proposed to start 5 Poultry Diagnostic Laboratories in Hyderabad, Visakhapatnam, Chittoor, Vijayawada, and Warangal at a cost of Rs. 5 lakhs.

Duck development in the Coastal Andhra needs to be strengthened by strengthening at a cost of Rs. 7 lakhs. The Duck Farm at Kaikalur and resorting to extensive upgrading programme of ducks in West Godavari and Krishna districts linked up with marketing of Eggs to West Bengal. A total provision of Rs. 40 lakhs has been made for poultry development.

Piggery Development :

The existing pig rearing stations have to be further strengthened by increasing foundation stock from 300 to 800 at a cost of Rs. 2 lakhs. Simultaneously more buildings have to be constructed to accommodate the surplus stock. The Bacon Factory has also to be further strengthened in manufacturing the pork products and capturing foreign markets at a cost of Rs. 2 lakhs.

Private breeders around the Bacon Factory have to be supplied with weaners so that they will fatten them and sell back to Bacon Factory. A provision of Rs. 2 lakhs has been made for this. Piggery units may be distributed to interested farmers in other districts also, while strengthening the marketing organisation for which a provision of Rs. 2.60 lakhs has been made. A total provision of Rs. 7 lakhs has thus been made for Piggery Development. In the case of cattle and sheep development it is proposed to supply milch cattle, breed stock and sheep units to Scheduled Castes and Scheduled Tribes to encourage them to take part in this sphere of development .

Animal Health :

There are 10 districts in the State which have not reached the levels prescribed by the Royal Commission on Agriculture three and half decades ago. As regards providing adequate Veterinary aid for the following districts it has not yet been possible to provide one Veterinary Surgeon for 25,000 heads of cattle i.e. Anantapur, Nellore, Cuddapah, Prakasam, Karimnagar, Mahaboobnagar, Medak, Nalgonda, Warangal, and Khammam districts. The Working Group on Animal Health recommended that there should be one Veterinary Surgeon for every 5,000 heads of Cattle in Intensive Cattle Development Blocks and Key Village areas and 15,000 heads of cattle in other areas. To ensure multi disciplinary approach in respect of animal diseases, reproductive disorders, nutritional imbalances, it is considered that polyclinics should be established at district headquarters. It is proposed to upgrade 6 existing Veterinary Hospitals into Poly-clinics at a cost of Rs. 5 lakhs.

In the Fifth Plan it is proposed to establish 50 Veterinary institutions to synchronise with the service centres in the rural areas.

Three new additional hospitals at Visakhapatnam, Vijayawada and Secunderabad are proposed at a cost of Rs. 1.50 lakhs as the existing hospitals are unable to cater to the growing number of cases. One ambulance for carrying disabled and badly ailing animals to the hospitals in twin cities is also proposed at a cost of Rs. 1 lakh. Five ambulatory clinics two in Telangana and three in Coastal Andhra are proposed to provide Veterinary aid to the farmers in remote villages at their door steps specially in areas where the dispersal of Veterinary Institutions is thin and scattered at a cost of Rs. 5 lakhs.

Liver Fluke (parasitic) disease is rampant in water logged and canal areas which is responsible for insidious mortality apart from causing unthriftiness, lowered fertility and reduced milk yield. It is stated that regular deworming of sheep will increase their body weight by 2 kgs. It is therefore proposed to implement Anti-Liver Fluke scheme in Pochampad Project of Karimnagar district, Nagarjunasagar Right Canal area Kurnool, Cuddapah Canal area, Kolleru lake area of Krishna and West Godavari districts and Tungabhadra Project. A provision of Rs. 14 lakhs has been made for this scheme.

All the districts in Andhra Pradesh are having clinical laboratories. It is proposed to establish two clinical laboratories one in Adilabad and another in Khammam districts, besides strengthening the existing ones at a cost of Rs. 3 lakhs.

It is also proposed to establish three Animal Health Centres which have the capacity to undertake high level investigation being provided with a Micro-Biologist, Pathologist and Parasitologist in Kurnool preferably where a medium sized intensive Cattle Development Block is proposed. It is also considered necessary to post Assistant Disease Investigation Officers for Poultry, Sheep and Cattle at each of the Animal Health Centres. A provision of Rs. 4.50 lakhs is made for this. It is also proposed to import some of the valuable drugs and necessary foreign exchange has to be provided at a cost of Rs. 1 lakh. Also it is proposed to strengthen the Veterinary Biological and Research Institute at Hyderabad for increasing its capacity to produce various biologicals, with additional experts and laboratory facilities at a cost of Rs. 15 lakhs.

It is proposed to create a Tissue Culture Laboratory for producing Tissue Culture Rinderpest Vaccine. It is also proposed to establish a laboratory for producing Foot and Mouth disease vaccine. The Working Group has been pressing for the creation of a Epidemiological Cell in the State to study the incidence pattern of various diseases, to undertake disease surveillance work, to prepare epidemiology maps and biometrical charts, etc.

Under the self employment schemes it is proposed to provide credit facilities for unemployed veterinary graduates at a cost of Rs. 1 lakh.

A provision of Rs. 5 lakhs has been made for Indian Council of Agricultural Research Schemes.

Training programme for all classes of personnel either abroad or in India is necessary to keep them abreast with the latest technological developments and a sum of Rs. 6 lakhs is provided for this purpose. The schemes under Animal Health thus costs Rs. 84 lakhs.

Slaughter Houses and Carcass Utilisation :

Establishment of modern slaughter houses with the participation of Government of India, State Government and Municipal Corporation at a cost of Rs. 2 crores is in progress at Hyderabad. A slaughter house Corporation is being registered and a sum of Rs. 15 lakhs is provided towards State's share.

In all the district headquarters towns there are slaughter houses run by Municipalities with the Veterinary Assistant Surgeons in charge of Clinical Laboratories doing the part time job of meat inspection. It is neither feasible nor possible to have an effective control by this part time work. Hence it is proposed in the first instance that all district headquarters should have a Veterinary Assistant Surgeon or a Veterinary Compounder exclusively for slaughter homes, subject to 50% of the cost of establishment being borne by concerned Municipalities.

It is proposed to start 10 Animal By-products centres on a co-operative basis in such of the places where the raw material is readily available at a cost of Rs. 8 lakhs.

Administrative and organisational issues :

It is proposed to reorganise the set up at the Directorate on the lines suggested by the Government of India especially in the divisions of Planning and Statistical cells, sheep, goat and fodder development wings. A small engineering unit is also proposed. This reorganisation will cost Rs. 9 lakhs. A regional set up with adequate supervisory and co-ordinating functions at a cost of Rs. 5 lakhs is envisaged. In addition the proposal to bifurcate the district administration with large areas is expected to cost Rs. 4 lakhs for which provision has been made.

Establishing Marketing Board :

Marketing organisation is important as Egg Marketing, Pork sale, feed sale, etc., are becoming increasingly popular. Market research packing research, advertisement methods are very essential. Market intelligence on various livestock products has to be assessed. Therefore there is every need to fortify the existing marketing cell in the Department which is clubbed with the publicity organisation by making it independent and converting it into a Marketing Board. A sum of Rs. 5 lakhs is provided for this purpose.

Intersectoral departmental linkages :

One of the objectives of the draft plan for Dairying and Milk Supply prepared by the Milk Commissioner is to make the milk available

to the population at the rate of 168 grams per individual per day by the end of Fifth Plan as against the existing level of 112 grams per day and the minimum requirements of 210 grams per day according to the recommendations of Nutritional Advisory Committee. If this objective is to be translated into action, 26 lakh tonnes of milk per year are required to cater to the needs of the existing 43 million human population in the State.

Under dairying and milk supply plan it is proposed to raise the installed capacities from 7.37 lakh litres in the entire State in the beginning of Fifth Plan to 19.80 lakh litres by the end of Fifth Plan. Thus the installed capacity increased by 12.43 lakh litres per day. If this increased capacity is to be achieved an additional quantity of about 4.5 lakh tonnes of milk annually are to be produced. It is estimated that about 10 lakh cows and buffaloes are to be inseminated to produce enough milch stock which in turn will yield the additional milk required. The programmes in Animal Husbandry sector have been formulated keeping these factors in view and a constant linking up is envisaged.

Departmental linkages exist between the department of Animal Husbandry and Tribal Welfare, Social Welfare, Forests, Agriculture and Special projects like S.F.D.A./M.F.A.L.D.A. Girijan Development Agency, etc., co-ordination between these departments is vital in formulation and implementation of the schemes. For instance for fodder and pasture development co-ordination and co-operation of the Departments of Agriculture and Forests are necessary. Fodder development programme may be dovetailed into the multiple cropping programmes and pasture development in forest areas should be specially dovetailed into Animal Husbandry plans.

ROLE OF AGENCIES :

In the Fourth Plan advantage is not taken of the finance facilities extended by National Co-operative Development Corporation on Agricultural Refinance Corporation except that the Scheduled Banks have given loans to the tune of Rs. 350 lakhs for dairy and poultry farming. In the Fifth Plan, however, it is proposed to devise ways and means of attracting large scale institutional finances.

ADMINISTRATIVE AND ORGANISATIONAL ISSUES :

The increased tempo of activity contemplated requires certain improvements in the strength at State, Regional and District levels, which has been provided for. Further for a more scientific approach to plans, planning and statistical wings are proposed,

SPECIAL FEATURES :

In the Fifth Plan consequent to the implementation of the programmes to a tune of Rs. 550 lakhs, it is likely that 112 Officers, 336 Veterinary Assistant Surgeons, 7 Livestock Inspectors, 80 Stockmen and 1,488 Veterinary compounders will be employed. The total employment potential in the Government would thus be 2,023 persons,

The additional employment or more specifically the improved income levels particularly to weaker sections as a consequence of the programmes is difficult to quantify.

CENTRALLY SPONSORED SCHEMES :

The following three schemes have been taken up for implementation during the Fourth Plan Period. These schemes have been proposed for continuation during Fifth Plan period as Centrally sponsored schemes. In order to achieve tangible results much remains to be done under these projects :

1. Establishment of Large Scale Sheep Breeding Farm, Mamidipally, Hyderabad.
2. Establishment of Progeny Testing Unit at Banavasi in Kurnool district.
3. Establishment of Vigilance Units and Check-posts under Rinderpest Eradication Scheme.

7. DAIRYING AND MILK SUPPLY.

It is now widely recognised that a well organised urban milk industry will stimulate milk production in rural areas and lead to introduction of high yielding breeds of cattle and production of better feeding and management practices, resulting in increased protein supply, and better income levels, more particularly to the rural population. While promoting the Dairy industry with a bias on the rural sector, the National Commission on Agriculture in its 'Interim Report on the Milk Production' has drawn pointed attention to giving every preference to the small farmers, who, all the while, have not derived much benefit through this industry.

The guidelines given by the Planning Commission indicated that the main thrust in the Fifth Plan will be to develop a co-ordinated plan of action for dairying linked up with milk production and fodder production so as to meet the growing demand for milk. Further the optimum utilisation of the existing milk plants and expansion of milk plants and processing plants to benefit small and marginal farmers is emphasised. The minimum economic size of a plant is indicated at 60,000 litres. Moreover, the organisational set up envisaged is one of producers co-operatives at the village level to be linked with the dairy plants through co-operative units.

Priority is sought to be given to dairy industry not merely because this would increase milk supply but also because of the impact it has on the economy of small and marginal farmers by way of generating larger employment opportunities and thus helping increase their incomes. Even those small farmers, marginal farmers and agricultural labourers who may not be able to derive benefits from the agricultural programme can look to dairying as a profitable subsidiary occupation. Many of them own one or two milch cattle and therefore they have a base for development of dairying as a profitable occupation. An initial push and some infrastructural facilities are needed. Though a beginning has been made to identify these groups and supply them the where-with all, yet much of the task remains to be completed during the Fifth Plan. Hence the approach of the State in the Fifth Plan in Dairying is to create conditions that would facilitate this major objective of providing improved employment possibilities and income levels for the weaker sections in the rural areas. This would necessarily involve also arrangements to link rural-urban areas a wider milk grid and arrangements for evening out seasonal variations.

REVIEW :

The expenditure on dairying and milk supply was Rs. 34.48 lakhs in Second Plan and Rs. 247 lakhs in the Third Plan. The emphasis continued during the three Annual Plans when an expenditure of Rs. 187 lakhs was incurred. During the Fourth Plan period, the likely expenditure is placed at Rs. 488.91 lakhs which includes Rs. 131.75 lakhs under Telangana Regional Committee Funds (Outside the Plan).

At the beginning of the Fourth Plan, the four Chilling Centres in Vijayawada area and Milk Powder Factory, Vijayawada and the four small sized Dairies at Visakhapatnam, Rajahmundry, Nellore and Chittoor were functioning. In addition to Central Dairy, at Hyderabad which was fed by the Sihadnagar Chilling Centre and three Cooling Centres at Bhongir, Kadthal and Warangal were existing. The total installed capacity at the beginning of the Fourth Plan stood at 2.84 lakh litres. By the end of Fourth Plan period the installed capacities of milk handling per day would increase to 7.37 lakh litres.

OBJECTIVES :

The objectives formulated for Fifth Plan in Dairying are :

- (a) to take up dairying as an intensive programme to bring a social change in the rural parts of the State, to create conditions conducive to more intensive employment of small and marginal farmers and agricultural labourers ;
- (b) to create a market structure which would ensure profitable return to milk producers ;
- (c) to make available milk to a growing population at a rate of 168 grams per-capita per-day by the end of the Fifth Plan as against the existing level of 112 grams per-day and the nutritional requirement of 210 grams per-day ;
- (d) to give preference to backward areas in the State when they are remote from urban markets and have some promise of milk potential but no marketing facilities ;
- (e) to encourage co-operatives not only in processing rural milk procurement but also in the gradual take over of units as and when they are financially viable and managerially competent ; and
- (f) to develop an organisational structure that would be capable of implementing the objectives spelt out in the programme contemplated.

STRATEGY :

The strategy to be followed for achieving the above objectives is :

- (i) Completion of spill-over schemes on which considerable spade work and investment has been made during the Fourth Plan ;
- (ii) Provision for minimum expansion of the milk plants which have touched their target capacities but where unsatisfied demand still exists ;
- (iii) Linking of the areas where the Small Farmers Development Agency and Marginal Farmers and Agricultural Labourers Agency are operating with the Dairy schemes, thereby providing first priority for marketing the milk produced by small and marginal farmers ;
- (iv) covering areas exposed to severe drought through dairying schemes provided at least where minimum scope exists ;

- (v) Starting new cooling and chilling centres to form a milk grid and feed the important urban markets for supply of milk to towns with a population of 25 to 50 thousands; and
- (vi) Ensuring appropriate milk products' units to be integrated into the grid.

PROGRAMME DETAILS :

Almost all the Dairy schemes taken up for implementation during the Fourth Five-Year Plan will start functioning by the end of the Fourth Five-Year Plan. However, a few schemes would spill-over to Fifth Plan period. The financial requirements of these schemes are being included under the head "Strengthening of Dairies and strengthening of existing Cooling and Chilling Centres". There are certain schemes which have exceeded their installed capacities or are likely to exceed by the end of Fourth Five-Year Plan. Hence an assessment has been made to expand their capacities in relation to milk supply and demand in the areas along with the estimated expenditure for such expansion. This will include provision of storage facilities, road tankers etc., without which their capacities will not go up. The rest would be new schemes. These schemes altogether cost Rs. 7.42 crores. When the schemes contemplated under the Fifth Plan are completed, the installed capacity of the plants would increase to 19.80 lakh litres. Financial and physical details category-wise are given in the statements appended. The details of the programme are as follows :

<i>Scheme</i>	<i>Outlay in Fifth Plan (Rs. in lakhs)</i>
1. Strengthening of existing Dairies including the Special schemes	390.00
(a) Milk Powder Factory at Vijayawada	50.00
(b) Feed Balancing Factory at Guntur	50.00
(c) Central Dairy at Hyderabad	60.00
(d) Major Dairy at Visakhapatnam	50.00
(e) Milk Powder Factory in public sector in Rayalaseema	125.00
(f) Strengthening of other dairies.	55.00
2. Strengthening of existing Chilling Centres, establishment of Cold Storage and conversion of Cooling Centres into Chilling Centres & Dairies	95.00
3. Establishment of Chilling Centres and Cooling Centres	257.00
4. Assistance to co-operatives including supplying of minor dairy equipment	33.00
5. Strengthening of administrative machinery by way of statistical wings and strengthening of the office of the Milk Commissioner and Engineering section	25.00
Total	<u><u>800.00</u></u>

(1) Strengthening of Dairies :

This scheme involves the strengthening of the existing dairies at 7 places *i.e.*, Rajahmundry, Nellore, Nizamabad, Karimnagar, Anantapur, Kurnool and Warangal at a cost of Rs. 55 lakhs. It also includes the establishment of a Milk Powder Factory at a cost of Rs. 50 lakhs at Vijayawada. Two spillover schemes at a cost of Rs. 110 lakhs, (a) Central Dairy at Hyderabad and (b) Feeder Balancing at Guntur are also included in this scheme. In addition to this an amount of Rs. 125 lakhs has been set apart for establishing Milk Powder Factory in public sector in Rayalaseema for which preparatory work is taken up during the year 1973-74. Further, an amount of Rs. 50 lakhs has been set apart for the establishment of a major dairy at Visakhapatnam with a capacity of 50,000 litres per day expandable to one lakh litres.

(2) Strengthening of existing chilling centres, establishment of cold storage and conversion of cooling centres into chilling centres and dairies :

This programme consists of conversion of existing cooling centres into chilling centres at Ramabhadrapuram, Srikakulam, Bhimadole, Pargi, Kothagudem and Medak at a cost of Rs. 60 lakhs. The scheme also consists of conversion of the Mahabubnagar cooling centre into a dairy at an estimated cost of Rs. 20 lakhs. An amount of Rs. 15 lakhs has been set apart for strengthening of chilling centres and replacements at 11 places. Altogether the schemes under this head cost Rs. 95 lakhs.

(3) Establishment of chilling centres and cooling centres :

This scheme envisages the establishment of cooling centres at 6 new places *i.e.*, Palakonda, Kurupam, Challapalli, Madanapalli, Jammalamadugu and Mahabubabad at a cost of Rs. 24 lakhs. It is proposed to establish chilling centres afresh at 8 places at a cost of Rs. 104 lakhs *i.e.*, at Anakapalli, Vijayanagaram, Narsapur, Tanuku, Venkatagiri, Nalgonda and Mallepalli. Further it is proposed to set up cooling centres with provision for subsequent conversion into chilling centres at Luxettipet, Khammam, Narayankhed, Manthani and Jagtial at a cost of Rs. 89 lakhs. It is also proposed to establish dairies at Tedapalligudem and Adoni at a cost of Rs. 36 lakhs and cold storage at Kakinada and Guntur at a cost of Rs. 4 lakhs. Altogether it is proposed to spend an amount of Rs. 257 lakhs under this scheme.

(4) Assistance to co-operatives including supplying of minor dairy equipment :

In order to make the milk co-operatives to function in an effective way in the primary collection of milk, it is proposed to provide Secretaries to the co-operatives and giving them managerial subsidy for a period of 3 years on sliding scale. It is also proposed to provide additional share-capital to the societies in the shape of share capital loans to members to enable the societies to disburse the cost of milk every day instead of every fortnight as is being done now. Supplying of minor dairy equipment is also contemplated. All these schemes together are estimated to cost Rs. 32 lakhs.

(5) *Strengthening of administrative machinery by way of statistical wings and strengthening of the Office of the Milk Commissioner :*

In view of the fast development in the dairying sector in the Fourth Plan, the staff at the headquarters and at the regional level to supervise and guide the dairies in a proper manner is very inadequate. Also it is necessary to strengthen the Engineering Department to cope up with the construction of buildings for dairying programmes. To have an up-to-date statistics it is necessary that a statistical wing is established. An amount of Rs. 25 lakhs is provided for the above purposes, *i.e.*, strengthening of the staff for working and supervision of dairying, statistical cell, strengthening of engineering staff and creation of project cell.

INTER-SECTORAL AND DEPARTMENTAL LINKAGES :

The Dairy Department comes into action, only when all inputs for stimulating milk production have been supplied. These include :

- (a) adequate feed and fodder development programmes and starting of cattle feed factories ;
- (b) artificial insemination cross-breeding and upgrading of milch animals ;
- (c) animal health cover and veterinary aid ;
- (d) massive loaning programme ; and
- (e) primary milk collection on co-operative lines.

As seen from the above the Dairy schemes lean heavily on the supporting programmes of Animal Husbandry Department and a well co-ordinated package plan has to be thought of, if dairying should go hand in hand with increased milk production. This is the view expressed by the National Commission on Agriculture and repeatedly stressed by the Indian Dairy Corporation. However, for several reasons in our State the Animal Husbandry Department has been responsible for the above programmes while milk handling and marketing has been the responsibility of the Dairy Department. With the recent thinking of forming a Dairy Development Corporation, it becomes very necessary that a package approach is adopted in areas covered by the Corporation. To this extent, the Animal Husbandry activities enumerated above will have to be transferred to the control of the Dairy Department and implemented through a single authority. Funds to implement the above programmes will therefore, have to be initially earmarked in the plan in the respective heads and transferred on a pro-rata basis to the Corporation as and when the Corporation comes into existence.

ROLE OF AGENCIES :

The role of financial institutions in the matter of Dairy Development during the Fourth Plan has not been very encouraging. However, for the last one year the banks have begun extending loans to the small and marginal farmers where there are already market facilities.

The Small Farmers Development Agency and Marginal Farmers and Agricultural Labourers Agency have taken the initiative in ensuring credit from Banks and Co-operatives to the beneficiaries and providing a subsidy Schemes. This is proposed to be continued during the Fifth Plan on a large scale.

The Milk Co-operatives have been playing a usefull role in the primary collection of milk in the rural sectors. But they are facing the following problems :

- (i) lack of adequate staff to write up their accounts resulting in mis-management of the societies ;
- (ii) delay in the disbursement of milk cost to members ;
- (iii) inadequacy of the commision allowed to them and therefore society could not strengthen itself financially ;
- (iv) want of dairy equipment to preserve milk ; and
- (v) inadequate resources to take up activities like better feeding, etc.

The above problems are proposed to be solved by appropriate measures designed in the State Plan and as already described.

ADMINISTRATION AND ORGANISATIONAL ISSUES :

Substantial administrative strengthening and procedural changes are inevitable if a programme of the magnitude envisaged is to be successfully implemented. Proposals for Fifth Plan cover these aspects, though this provision would go to Dairy Corporation if this is established in the meanwhile.

SPECIAL FEATURES :

The direct employment in the government as a result of the programmes is anticipated at 3,449 persons as indicated below :

1. Ordinary graduates	112
2. Veterinary personnel	62
3. Engineering personnel	70
4. Skilled and Semi-skilled	3,061
5. Dairying personnel	144
Total..	3,449

No estimates of indirect employment could be made.

CENTRAL SECTOR SCHEMES :

The Indian Council of Agricultural Research has taken up two schemes for conducting research in the field of Dairying in Andhra Pradesh. They are :

1. All-India Co-ordinated Research Project to study the cost of chilling and transportation of milk to city dairies at Central Dairy, Hyderabad.

2. All-India Co ordinated Research Project to evolve economic methods for the utilisation of surplus/substandard milk at Milk Powder Factory, Vijayawada.

The present sanction for these two schemes is still there upto 31 March 1974. No indication has been given about their continuance in the Fifth Plan.

In the Fifth Plan, proposals have been submitted for the following 8 schemes :

1. Scheme for evolving better methods for packing and marketing milk products at Central Dairy, Hyderabad.
2. Scheme for fixing norms for storage, handling losses bottle breakages and optimum operational costs at Central Dairy, Hyderabad.
3. Scheme to evolve economic methods for the utilisation of certain dairy wastes like ghee residue, butter milk, floor washings and other dairy wastes in dairy plants.
4. Scheme to investigate the losses of fat and milk solids in Dairy Plants manufacturing milk products and to evolve methods to minimise such losses and fix up standards.
5. Scheme to study on the quality standards of ghee manufactured in commercial dairies.
6. Scheme for standardised techniques for commercial manufacture of calcium carbonate.
7. Scheme to study on the acceptance of raw milk at the milk plants depending on the microbial and chemical quality standards.
8. Scheme to develop techniques for the manufacture of humanized milk in commercial dairies.

Sanction of the Indian Council of Agricultural Research has not been received in this regard.

[*Statement.*

STATEMENT I

*Comparative statement of Installed Capacity of Dairies, Chilling Centres,
and Cooling Centres.*

S. No.	Project	Level at the end of 1968-69		At the end of Fourth Plan		At the end of Fifth Plan	
		(No)	(Lakh litres)	(No)	(Lakh litres)	(No)	(Lakh litres)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Dairies ..	6	0.89	9	1.75	16	6.82
2.	Milk Powder Factory	1	1.25	1	2.17	3	5.50
3.	Chilling Centres ..	5	0.62	20	2.67	50	6.80
4.	Cooling Centres ..	2	0.08	14	0.78	17	0.68
5.	Cold Storage ..	..	..	..	..	2	..
	Total ..	14	2.84	44	7.37	88	19.80

STATEMENT II

Estimated cost of Dairies, Cooling Centres, Chilling Centres etc., in Fifth Plan.

<i>'Strengthening of existing dairies</i>					<i>Cost</i>
					<i>(Rs. in Lakhs.)</i>
1.	Rajahmundry	..	..	..	15.00
2.	Nellore	..	..	..	10.00
3.	Nizamabad	..	..	..	6.00
4.	Karimnagar	..	..	..	10.00
5.	Anantapur	..	..	..	4.00
6.	Kurnool	..	..	..	4.00
7.	Warangal	..	..	..	6.00
8.	Milk Powder Factory at Vijayawada	..	..	..	50.00
9.	Central Dairy at Hyderabad (spill-over)	..	..	..	60.00
10.	Feed Balancing Factory at Guntur (spill-over)	..	..	..	50.00
11.	Milk Powder Factory in public sector in Rayalseema	..	..	..	125.00
12.	Major Dairy at Visakhapatnam	..	..	..	50.00
Total					390.00
<i>Strengthening of Cooling and Chilling Centres, Conversion of Cooling Centres into chilling centres.</i>					<i>Rs. in lakhs.</i>
1.	Ramabhadra puram	..	..	..	6.00
2.	Srikakulam	..	..	..	6.00
3.	Bhimadole	..	..	..	12.00
4.	Pargi	..	..	..	12.00
5.	Kothagudem	..	..	..	12.00
6.	Medak	..	..	..	12.00
7.	Mahabubnagar (Conversion into Dairy)	..	..	..	20.00
<i>Strengthening of Cooling Centres and replacements.</i>					
8.	(a) Pamarru, (b) Hanuman Junction, (c) Gudlavalleru, (d) Veerankilock, (e) Angalakuduru, (f) Kolluru, (g) Retur, (h) Narasaraopet, (i) Ongole and (j) Chillakallu				10.00
9.	Strengthening of Mydukur Chilling Centre and establishing cold storage at Cuddapah	..	..	..	5.00
Total					95.00

STATEMENT II—(Contd.)

<i>New Schemes</i>					<i>(Rs. in lakhs)</i>
<i>Cooling Centres :</i>					
1.	Palakonda	..	..	..	4.00
2.	Kurupam	..	..	..	4.00
3.	Challapalli	..	..	..	4.00
4.	Madanapalli	..	..	..	4.00
5.	Jammalamadugu	..	..	..	4.00
6.	Mahaboobabad	..	..	..	4.00
<i>Cooling Centres and later to be converted to Chilling Centres :</i>					
1.	Luxettipet	..	..	..	16.00
2.	Khammam	..	..	..	25.00
3.	Narayankhed	..	..	..	16.00
4.	Manthani	..	..	..	16.00
5.	Jagtial	..	..	..	16.00
<i>Chilling Centres :</i>					
1.	Anakapalli	..	..	..	16.00
2.	Vijayanagaram	..	..	..	16.00
3.	Narsapur	..	..	..	16.00
4.	Tanuku	..	..	..	16.00
5.	Tadpatri	..	..	..	8.00
6.	Venkatagiri	..	..	..	16.00
7.	Nalgonda	..	..	..	8.00
8.	Mallepalli	..	..	..	8.00
<i>Cold Storage :</i>					
1.	Guntur	..	..	..	2.00
2.	Kakinada	..	..	..	2.00
<i>Dairy</i>					
1.	Adoni	..	..	..	11.00
2.	Tadepalligudem	..	..	..	25.00
Total					257.00

STATEMENT —III.

Installed capacities of Dairies, Chilling Centres ; Cooling Centres etc., at the end of Fifth Plan.

Name	Installed capacity (in litres.)
(1)	(2)
I. Dairies	
1. Milk Powder Factory, Vijayawada	2,50,000
2. Visakhapatnam	1,00,000
3. Rajahamundry	20,000
4. Nellore.	20,000
5. Tadepalligudem	20,000
6. Feed Balancing Dairy in Guntur	2,00,000
7. Chittoor	20,000
8. Kurnool	18,000
9. Anantapur	18,000
10. Milk Powder Factory, in Rayalaseema.	1,50,000
11. Adoni	18,000
12. Central Dairy, Hyderabad.. .. .	1,50,000
13. Warangal Dairy	18,000
14. Karimnagar	18,000
15. Mahaboobnagar	18,000
16. Khammam	18,000
II. Chilling Centres	
17. Pamaru	25,000
18. Hanumanjunction	25,000
19. Gudlalleru	25,000
20. Veerankilock	25,000
21. Chillakallu	12,500
22. Angalakuduru	18,000
23. Kolluru	12,500

STATEMENT III—(Contd.)

(1)	(2)
24. Returu	12,500
25. Tiruvur	12,500
26. Bhimavaram	12,500
27. Narasaraopet	12,500
28. Ongole	12,500
29. Gutazala	12,500
30. Ramabhadrapuram	12,500
31. Srikakulam	12,500
32. Bhimadole	12,500
33. Anakapalli	12,500
34. Vizianagaram	12,500
35. Narasapur	12,500
36. Tanuku	12,500
37. Venkatagiri	12,500
38. Shadnagar	12,500
39. Bhongir	20,000
40. Kadthal	12,500
41. Nizamabad	12,500
42. Gajwel	12,500
43. Zaheerabad	12,500
44. Suryapet	12,500
45. Pargi	12,500
46. Kothagudem	12,500
47. Medak	12,500
48. Nalgonda	12,500
49. Mallepalli	12,500
50. Luxettipet	12,500
51. Narayankhed	12,500
52. Jagtial	12,500
53. Manthani	12,500

STATEMENT III.—(Contd.).

	(1)	(2)
<i>III. Cooling Centres</i>		
54. Mahaboobnagar.	4,000
55. Mulug	4,000
56. Kalwakurthy	4,000
57. Alair	4,000
58. Chityal	4,000
59. Gadwal	4,000
60. Nirmal	4,000
61. Palnadu	4,000
62. Kurpam	4,000
63. Challpalli	4,000
64. Madanapalli	4,000
	Total	.. 16,54,000

STATEMENT IV

New Schemes during Fifth-Plan and their Handling Capacities

Sl. No.	Name of the Scheme	Capacity (in litres)
(1)	(2)	(3)
1.	Cold Store at Kakinada .. ..	..
2.	Venkatagiri Chilling Centre	12,500
3.	Anakapalli Chilling Centre	12,500
4.	Vizianagaram Chilling Centre	12,500
5.	Palakonda Cooling Centre	4,000
6.	Kurupam Cooling Centre	4,000
7.	Narasapur Chilling Centre	12,500
8.	Tanuku Chilling Centre	12,500
9.	Tadepalli Cooling Centre	12,500
10.	Challapalli Cooling Centre	4,000
11.	Cold Store at Guntur .. ..	..
12.	Jagtial Chilling Centre	12,500
13.	Manthani Chilling Centre	12,500
14.	Mahaboobabad Cooling Centre	4,000
15.	Narayankhed Chilling Centre	12,500
16.	Luxettipet Chilling Centre	12,500
17.	Tadipatri Chilling Centre	12,500
18.	Dairy at Adoni	12,500
19.	Jammalamadugu Cooling Centre	4,000
20.	Madanapalli Cooling Centre	4,000
21.	Milk Powder Factory in K. C. Canal Area	1,50,000
	Total	<u>3,24,000</u>

8. FORESTS.

In the Fifth Plan, it is necessary to put Forestry Planning on a sounder basis of detailed forest surveys and adequate evaluation and for this purpose stress has to be laid on building up a proper information system. It has also to be borne in mind that industrial and fuel wood requirements in the next 10 to 20 years are anticipated to be so heavy that increased production from the existing forests or those proposed should be one of the specific objectives of forest management to an extent perhaps not hitherto recognized. Improvement of communications should substantially contribute to these programmes. Pasture development and control of grazing also need to be taken up extensively.

With an area of 65.09 lakh hectares under forests, the area under forests constitute only 22% of the State's total geographical area. The total forest area in the State is still far below the standard laid down by the National Forests Policy approved by the Government of India in 1952, according to which the proportion of land to be kept permanently under forests should be $\frac{1}{3}$ rd of the total land area. The per capita forest area in the State is 0.18 hectares as against 0.22 hectares for the country as a whole. During the recent years as a result of submergence of the forest area by reservoirs constructed for irrigation and power purposes as also release of forests for the purpose of cultivation there has been a decline in the extent of forests. The emphasis on forestry development so far has been essentially to maintain the forest area as a natural resource with emphasis on obtaining revenue by raising commercial plantations. The approach in the State Plan is, however, to design commercial species, quick growing species and pasture development of appropriate species keeping in view the different agro-climatic conditions. Intensification of forest management is also given importance.

REVIEW :

An allotment of Rs. 306.50 lakhs was made in the original Fourth Plan of the State for Forest Department. In the mid-term review undertaken in 1972 this allotment has been reduced to Rs. 286.54 lakhs. It is anticipated that this amount would be spent during the Fourth Plan period.

During the Fourth Plan, the maximum emphasis in the field of development of forests was on teak plantation and development of quick growing species. There has also been some effort on casuarina plantation.

The object under teak plantation was to meet the future demand and also to enhance the potential value of the mixed forest by replacement with teak. It is expected that during the Fourth Plan period an extent of 14,975 hectares will have been planted with teak plantation against the target of 12,000 hectares at a cost of Rs. 124.19 lakhs. Red sanders is another variety of economic plantation where the State holds near monopoly. These species are grown

in Cuddapah, Chittoor and Nellore Districts. These species have been planted over an area of 234 hectares at a cost of Rs. 4.19 lakhs.

Quick growing species is another field where much emphasis was laid in the State during the Plan period. Under this, it was proposed to raise quick growing species like Bamboo, Eucalyptus and Silver-Oak to meet the requirements of paper, pulp and other industries. During the plan period an extent of 11,136 hectares would have been planted with these quick growing species at a cost of Rs. 75.35 lakhs. Casuarina is an ideal fuel-wood. The scheme for the development of Casuarina is meant to increase the fuel-wood by growing it in the coastal sandy track. During the plan period a total area of 3,417 hectares would have been planted with casuarina at a cost of Rs. 23.02 lakhs. The achievement would have been more but for the transfer of the forest area in Sriharikota island in Nellore district to the Atomic Energy Commission for the establishment of a Rocket Launching Station. *Bursera Delpechiana* is a exotic from Mexico introduced into the State in 1959 and grown on plantation-scale since 1968. It yields an essential oil 'Linaloe' famous in the perfumery industry. A total of 140 hectares will be planted up during the plan period at a cost of Rs. 1.38 lakhs. With a provision of Rs. 2.20 lakhs Cashew would have been planted in about 82 hectares in Fourth Plan in Chittoor district.

Miscellaneous works like cultural operations, forest protection and consolidation, soil and water conservation works, improvement to water sources and Communications in forest area were undertaken at a total cost of Rs. 1.93 lakhs. A provision of Rs. 2.10 lakhs was spent on development of Pakhal Sanctuary in Warangal district of Telangana. The sanctuary was provided with jeepable roads, a breeding farm, residential accommodation for the sanctuary staff inside the sanctuary itself, etc., besides renovating and furnishing the Forest Rest House. An amount of Rs. 2.12 lakhs was spent on provision of Government accommodation for housing office and providing quarters. A total amount of Rs. 6.38 lakhs is proposed to be spent during the Plan period, on survey, demarcation and notification under the Forest Act. A sum of Rs. 1.44 lakhs was spent on forest communications.

The establishment of the Nehru Zoological Park in Hyderabad was one of the more notable activities of the department. So far an expenditure of Rs. 120 lakhs has been incurred on this Zoo. During the Fourth Plan period the Zoo was provided with additional attractions like the pre-historic animal enclosures, lion enclosures, the white tiger enclosures, aquarium, etc.

There is a forest school at Yellandu which caters to the training needs of the Executive Authorities in the State. A total of 150 Foresters would have been trained by the end of the Fourth Plan period at a cost of Rs. 7.61 lakhs.

A soil testing laboratory has been established at Hyderabad in 1970-71 and a total of Rs. 2.27 lakhs would have been spent by the end of the Plan period. In physical terms (1) 2,700 soil samples are analysed, (2) Teak seed-stands have been established, (3) Teak plus trees

have been selected and Germ-Plasm-banks are being developed at Maredumilli and Warangal, (4) Grafting experiments have been initiated on Cashew and Bursera, (5) Fertilisation and spacing experiment have been initiated on Cashew, Bursera and Bamboo, (6) extensive trails on growing different species of tropical pines are being made, (7) the State is participating in International Teak Provenance Trials. By the end of the Plan period a total sum of Rs. 4.09 lakhs is proposed to be spent for intensification of forest management. A separate Circle designated as the Research and Development Circle was created under this scheme in 1971-72 with a Conservator in charge.

In addition to these, a number of central sector/sponsored schemes had been taken up during Fourth Plan. There is a centrally sponsored scheme intended for surveying the wood and bamboo resources of the State forests to facilitate industrial development. The forests of Nagarkurnool division in Mahabubnagar district, the Nallamalai forests in Kurnool district and the Seshachalam-Veligonda forests in Cuddapah, Chittoor, Nellore districts are covered by this scheme. By the end of the plan a total area of 12,088 sq. kms. would have been surveyed at a total cost of about Rs. 8 lakhs. The expenditure is reimbursed by the Centre at the end of the year at Rs. 156.25 per sq. km.

There is a scheme for pro-hylactic treatment of Cashew plantation to improve fruit-set. A total amount of Rs. 1.47 lakhs has been spent during the first three years of the Plan and the area treated was 2,370 hectares.

Under the Special Package Programme in existing Cashew plantations and Area Expansion Programme existing plantations are to be treated with Package practices to improve yields, and new plantations are to be raised. The Package Programme was implemented over 1,000 hectares during 1971-72 and 1972-73 at a cost of Rs. 7.97 lakhs, and it is proposed to be implemented over 1,000 hectares during 1973-74 at a cost of Rs. 4 lakhs; under the area expansion programme during 1972-73, 500 hectares have been planted at a cost of Rs. 4.00 lakhs and it is proposed to plant 500 hectares during 1973-74 and maintain 500 hectares of 1972 at a cost of about Rs. 3 lakhs.

The Government of India undertook in 1972-73 the Pre-Investment survey of Sirpur Catchment in Adilabad district to know the total wood and bamboo resources for expansion of the paper and pulp industry in the district and would be continued in 1973-74 also.

Under All-India Co-ordinated Research the Forest Research Institute, Dehra Dun is conducting experiments on Bamboo, Eucalyptus and Tropical Pines in collaboration with the State Forest Department. All the field work is done by the territorial staff. The scheme was started in 1970-71 and the entire expenditure of Rs. 3.09 lakhs during the plan period is to be reimbursed by the Centre.

A scheme for Rehabilitation of Ceylon Repatriates is under implementation in the Visakhapatnam district and its object is to settle 500 families of Ceylon repatriates on Coffee Plantations. The scheme

was commenced in 1972-73 and the proposed expenditure during the plan period is Rs. 19 lakhs in the form of a loan from the Rehabilitation Sector. An area of about 180 hectares would have been planted by the end of the plan.

OBJECTIVES :

The objectives of the Forestry sector in the Fifth Plan are :

- (1) To protect, preserve, and ensure the forests in view of their economic importance as well as their importance from the technological and climatic point of view ;
- (2) To serve the Industrial and Commercial sectors, by developing plantation of quick-growing valuable species like Eucalyptus, Teak, Bursera, Sandal and of Fuel woods ;
- (3) To develop fodder-potential inside forests ;
- (4) To help future development of forestry by strengthening the research wing, particularly with a view to improving the various species grown in quality as well as quantity.

STRATEGY :

Forests of the State sprawl all over the State between 12° and 20° N' latitude on plain and hilly country with wide variations in rain-fall distribution and soil potential, the two deciding factors in the forestry sector. In order to derive maximum benefits out of this input a strategy will have to be evolved to suit the changing patterns of rain and soil.

The most rational strategy would be to divide the State on the basis of climate into four zones :

- (1) Coastal Wet above river Krishna receiving more than 100 to 125 cms., of rain from both the monsoons.
- (2) Coastal Dry below the Krishna river receiving about 75 cms. of rain mostly from the North-East Monsoon.
- (3) Inland Wet comprising of the Godavari Basin, receiving about 100 cms. of rain mostly from the South-West Monsoon ; and
- (4) Inland Dry comprising of Rayalaseema and the Southern districts of Telangana receiving about 63 cms. of erratic rain.

While the object in the high rainfall zones is to improve the potential of industrial raw material, and timber by replacing the slow growing species with species of commercial and industrial value, in the low rainfall regions the strategy is to grow forests/trees where there are none both inside and outside the limits of State forests. The primary objective being soil and moisture conservation coupled with pasture development and improvement of the environment by growing trees to mitigate the effects of the climate.

As in the Fourth Plan period, growing of quick growing species and economic plantations coupled with the growing of Casuarina plantations would be the main programme during the Fifth Plan period also. In the light of the recommendations made by the National Commission on Agriculture in their interim report on Man-made Forests, the setting up of a State Forestry Corporation has to be considered to handle work relating to commercial plantations and allied activities. Alongside stress should be laid on formulating of forest projects for attracting institutional credit.

PROGRAMME DETAILS :

An outlay of Rs. 6 crores is provided in the Fifth Plan for Forestry Development. A major share, amounting to Rs. 129 lakhs is provided for growing of economic plantation and a sum of Rs. 215.50 lakhs on quick growing species besides providing a sum of Rs. 16 lakhs on growing of Casuarina plantation. During this period teak will be planted over an area of 12,700 hectares while quick growing species like Eucalyptus, Bamboo and Acacia Auriculiformis will be grown over an extent of 26,350 hectares. Red Sanders, in which Andhra Pradesh enjoys monopoly, will be planted over an area of 200 hectares. Casuarina will be planted over an area of 2,000 hectares.

The following table shows, at a glance the physical and financial allocations in Fifth Plan in the State sector:

<i>Sl. No.</i>	<i>Name of Scheme.</i>	<i>Physical Targets (Hectares)</i>	<i>Financial outlay (Rs. in lakhs)</i>
(1)	(2)	(3)	(4)
<i>I. Forestry Sector :</i>			
(a)	Teak Plantation (Rs. 1,000/Hectare)	12,700	127.00
(b)	Quick growing species		
	Eucalyptus (Rs. 850/Hectare)	6,650	78.25
	Quick growing species		
	Bamboo (Rs. 600/Hectare) ..	22,200	133.00
(c)	Quick growing species Acacia Auriculiformis (Rs. 850/Hectare)	500	4.25
	Farm Forestry—Afforestation of minor irrigation tank foreshores with Babul ..	1,500	5.00
	Environmental Forestry Avenue Planting (Kms.)	200	6.00
	Amenities to Labour .. ..	..	0.50
	Forest Protection .. ..	..	25.00
	Timber operations including improved logging .. ..	..	51.00

1	2	3	4
(d) Casuarina (Rs. 800/Hectare) ..		2,000	16.00
(e) Red Sanders (Rs. 1,000/Hectare) ..		200	2.00
(f) Silvicultural operations in natural forests (Rs. 50/Hectare) ..		10,000	5.00
(g) Wild Life Management ..		..	48.50
(h) Intensification of management posting of U. D. C's, Stenos, etc. ..		..	11.57
(i) Communications .. ..		..	13.00
(j) Buildings .. ..		..	37.00
	Sub-Total ..		563.07
II. Others :			Lakhs
(a) Intensification of management at Headquarters .. ..		..	2.20
(b) Research—Silviculture division for Dry Zone .. ..		..	4.00
(c) Research—Strengthening of Genetics Wing .. ..		..	3.30
(d) Education—Refresher Course .. ..		..	1.00
(e) Nehru Zoological Park .. ..		..	20.00
(f) Publicity Cell .. ..		..	5.00
(g) Evaluation Cell .. ..		..	1.50
			37.00
	Grand Total ..		600.00

I. (a) Teak Plantations are the most important plantations raised in all the three regions of the State. With a view to enhancing the potential value of the forests and also to meet the future timber demands, it is proposed to plant 12,700 hectares of land with teak plantation. Of this 6,000 hectares will be in Coastal Andhra, 6,200 hectares in Telangana and 500 hectares in Rayalaseema.

(b) A considerable sum to the extent of Rs. 215.50 lakhs is proposed to be invested for planting quick growing species. Under quick growing species Eucalyptus which yields not only good pulp useful for paper manufacture but also timber for coal mines will be grown. This plantation will be planted in Kurnool, and in Adilabad

District in the neighbourhood of Sirpur Paper Mills and Kothagudem areas. It is proposed to raise this in 6,650 hectares at a cost of Rs. 78.25 lakhs. Bamboo which is another species to be taken up under quick growing species programme, is the only long fibre raw material useful for paper industry in the state. It is also the poorman's timber popular in hut construction and basketry. In view of the limited natural bamboo resources and in view of the fibre demand of the paper industry and the domestic consumers it is proposed to plant this specie over an area of 22,200 hectares comprising 14,200 hectares in Rajahmundry industrial catchment area and 8,000 hectares in Adilabad, Warangal and Khammam districts. Casuarina is a popular fuel species and it comes up best in the Coastal tract.

(c) *Acacia auriculiformis* wood has been tested and proved to be good for paper pulp. Under this scheme it is proposed to replace 500 hectares of mixed hardwood forests in Kurnool Circle of Rayalaseema with this quick growing species at a total cost of Rs. 4.25 lakhs. The deficit of 10% in forest land in the State is causing fuel and timber shortages in the rural sector. There are numerous minor irrigation tanks in the countryside, whose fore-shores are ideal for growing the popular multipurpose Babul (Nalla Tumma) tree. This scheme is particularly meant for Rayalaseema which is poor in forest wealth. A provision of Rs. 5 lakhs is made to bring 1,500 hectares of tank fore-shores under Babul. Further a sum of Rs. 6 lakhs is provided for planting up avenue trees at 12 Meters apart over 200 Kms. during the plan period. It is also proposed to spend annually a sum of Rs. 10,000 to provide amenities like shelter and drinking water for the labourers employed on departmental works. It has become necessary to provide the Divisional District Forest Officers in charge of the forests as well as the wild Life with Jeeps in order to facilitate inspections and booking the offenders. The District Forest Officers have already been provided with Jeeps more than 10 years ago and they have become un-serviceable, having outrun the prescribed mileage. It is therefore proposed to replace them with new Jeeps and provide Vans to Conservators in place of Jeeps at a total cost of Rs. 25 lakhs. It is further proposed (1) to modernise the Government Saw Mill at Rajahmundry in Coastal Andhra at a cost of Rs. 10 lakhs and (2) to under take departmental extraction of timber and fuel-wood in Nandyal division in Rayalaseema at a cost of Rs. 41 lakhs. The intention of the Scheme is to maximise utilisation of wood by using proper techniques and tools and thereby save losses resulting from out-moded logging methods.

It is proposed to undertake afforestation works in drought prone areas in Rayalaseema and Telangana and soil-cum-water conservation measures, and combine with them cultivation of pedigree fodder grasses to improve the fodder potential as an economic proposition, as well as an insurance against fodder famine. An amount of Rs. 21.35 lakhs is provided to bring under the scheme 1,100 hectares in Rayalaseema and 1,400 hectares in Telangana. It is also proposed to grow the drought resistant and hardy cashew in the Coastal Andhra to arrest shifting of sand. Incidentally cashewnut being a dollar earner, the scheme is expected to give handsome returns in due course. A sum of Rs. 4 Lakhs is provided to plant up 500 hectares in Visakhapatnam Circle. Silver Oak Wood is much sought after

for packing cases, and it grows well on the Araku hills, which are subject to soil erosion. It is therefore proposed to plant up 5,000 hectares with Silver Oak at a cost of Rs. 30 lakhs. Tamarind is a hardy tree which can do well in arid tract. Provided it is properly looked after, it can pay good dividend as its fruit forms an indispensable part of the South Indian food, and its seeds are commercially very valuable. It is therefore proposed to raise Tamarind groves over 1,000 hectares at a total cost of Rs. 6 lakhs. *Bursera Delpechiana* is a small Mexican tree whose fruit has yields the essential oil 'Linaloe' which is famous in perfumery industry and earns valuable foreign exchange. It thrives well in arid tract with mild summers. It has been raised successfully in the Hyderabad Plateau during the Fourth Five-Year Plan and it is now proposed to plant up 300 hectares in Rayalaseema and 400 hectares in Telangana at a total cost of Rs. 3.25 lakhs. Sandal is yet another tree which thrives well in the arid tracts, endowed with mild climate. Its sweet scented hard-wood yields the reputed sandal oil used in perfumery industry. It is proposed to cover 1,000 hectares in Rayalaseema and 1,000 hectares in Telangana at a cost of Rs. 1.10 lakhs. *Abnus* is a common species in the forests of Telangana and its leaf, used in wrapping the popular beedi, fetches nearly Rs. 3 crores of revenue every year. However it occurs sporadically over a very wide area, but grows well in the arid tract of Rayalaseema as well as parts of Telangana. It is therefore proposed to raise concentrated plantations of the species over 100 hectares in Rayalaseema and 400 hectares in the Telangana region at a cost of Rs. 3.00 lakhs. In Adilabad Circle vast areas inside the forests have been encroached in the past, but are being evicted. In order to bring the evicted areas rapidly under tree-growth it is proposed to plough up the area and sow Babul seed as the soils are clayey and ideal for Babul growth. It is proposed to tackle 2,500 hectares during the Plan period at a total cost of Rs. 9 lakhs.

(d) It is proposed to develop Casuarina which grows fast in Coastal area in 200 hectares at a cost of Rs. 16 lakhs.

(e) Andhra Pradesh enjoys near monopoly of Red Sanders which grows widely in Cuddapah, Nellore and Clittoor districts. Its blood red hard wood possesses certain acoustic properties making it an ideal one for making the Japanese National Musical Instrument. Upto 1972 an area of more than 1,000 hectares have been planted with these species and it is proposed to continue this programme during the Fifth Plan also. A provision of Rs. 2 lakhs is made for this scheme and an extent of 200 hectares will be covered with this programme.

(f) Further Silvicultural operations at a cost of Rs. 5 lakhs are proposed.

(g) Five wild-life cells in the field and establishment and development of Zoological parks, sanctuaries etc., are proposed at a cost of Rs. 48.5 lakhs at the following places :

- (1) Indira Gandhi Zoological Park at Visakhapatnam.
- (2) Gudem Wild Life Sanctuary in Visakhapatnam district.

- (3) Kondapalli National Park in Krishna district.
- (4) Mahanandi Deer Park in Kurnool district.
- (5) Tirumalai Deer Park in Chittoor district.
- (6) Pakhal Wild Life Sanctuary in Warangal district.
- (7) Qawal Wild Life Sanctuary in Adilabad district.

(h) Intensification of forest management at the field level involving upgrading of Head Clerk's posts, Superintendents posts in certain divisions, creation of posts of U. D. Accounts, U. D. Clerks, Stenos for major divisions are proposed.

(i) There is a wealth of untapped timber and other forest produce in the interior forests in eastern ghats in Coastal Andhra, in Nalla malais in Rayalaseema and in Warangal, Karimnagar, and Khammam districts in the Telangana. An amount of Rs. 13 lakhs is provided in the plan towards construction of roads for opening up these inaccessible forests in order to exploit them and also to replace the existing inferior stock with valuable species like Teak, Eucalyptus, etc.

(j) There are at present more than 3,000 Forest Guards and Watchers who are the immediate custodians of huge forest wealth and they are not provided with the Government residential accommodation with the result they will have to live in private rented quarters. An amount of Rs. 37 lakhs is provided in the plan towards construction of quarters for these forest personnel.

II. (a) Towards intensification of management at State level Rs. 2.20 lakhs is provided. This involves provision of U. D. Accountant to Forest utilisation Office at a cost of Rs. 25,000 non-technical gazetted assistant at a cost of Rs. 70,000 and a wild life cell at a cost of Rs. 1.25 lakhs.

(b) The dry zone in the State comprising of Rayalaseema and the southern districts of Telangana have a different kind of potential from what is met within the forests of the other regions in the State. Though the Dry-Zone forests have no remarkable timber potential it has got appreciable fodder grass-potential which needs development on scientific lines.

(c) The production of man made forests on large scale to meet the increasing demand of industrial raw material has posed many genetic problems calling for investigations in depth. The problem here would be to improve the yielding capacity of the low yields by suitable grafting techniques through strengthening of genetics unit. The total provision under this scheme is Rs. 3.30 lakhs).

(d) A provision of Rs. 1 lakh is made to conduct refresher courses at the Forest School at Yellandu.

(e) The Nehru Zoological Park at Hyderabad was established long ago to fulfill the recreational and educational needs of the people. So far, a total of about Rs. 120 lakhs have been invested in this Zoo upto the end of 1972-73. During the Fourth Five-Year Plan the Zoo

was provided with additional attractions like the pre-Historic animals enclosures, lion enclosure, the white tigers enclosure, aquarium, etc. (A provision of Rs. 20 lakhs is made under this plan to make further improvements).

(f) The Forest Department is implementing very useful programmes for the lasting benefit of the people and the land. The ignorance of the people tends to make them apathetic towards forestry programmes, if not antagonistic. They need education and enlightenment so that the department may enlist their goodwill and co-operation towards the successful implementation of the several programmes. It is therefore proposed to create a Publicity Cell in the Directorate with a Public Relations Officer in-charge of it, assisted by supporting staff. (A total amount of Rs. 5 lakhs is provided).

(g) The State has so far raised more than 70,000 hectares of Teak, Bamboo, Casuarina, Eucalyptus, Coffee, Cashew, Bursera, Red Sanders and Sandal besides covering vast areas under soil cum-water conservation measures. Evaluation of these large scale plantations schemes is necessary so that it may enable us to avoid pit falls in future, improve upon the present technique and intensify our efforts in the right direction with confidence. It is therefore proposed to create an Evaluation Cell as recommended by the National Commission on Agriculture (A provision of Rs. 1.5 lakhs is made in this plan).

INTER-SECTORAL DEPARTMENTAL LINKAGES :

In regard to Farm Forestry a close co-operation between Revenue and Panchayat Raj Department would be necessary since there is a scheme which envisages planting of Babul trees on fore-shores of minor irrigation tanks. Further the scheme of Environmental Forestry requires the Co-operation of Roads and Buildings wing of the Public Works Department since the scheme envisages planting of avenue trees.

ADMINISTRATIVE AND ORGANISATIONAL ISSUES :

It is proposed to consider developing specialisation in special wings of the department by creating separate cadres. It is also proposed to take advance action for recruitment, training, etc., to develop technical man-power. A substantial re-orientation of procedure is also envisaged.

One of the most important proposals however relates to establishment of a State Forest Corporation. The forests are sources of raw material for big, medium, and small industries like Paper, Rayon, Particle-board, Plywood, Pharmaceuticals, Cosmetics, etc. Industrial and commercial species such as Eucalyptus, Baraboo, Coffee, Cashew, etc., have to be raised on larger scale. In order to meet the expansion programme of the Paper Industry it is estimated that fast growing species like Eucalyptus, Pines etc., will have to be raised over an area of 35,000 hectares in the Fifth Five-Year Plan.

It will be seen that many of the schemes suggested are economically viable and as such it should be possible to attract institutional finance for their implementation. In order to facilitate this, it is proposed to set up a State Forest Corporation. It is expected that the State Government as well as the Central Government would make share capital contributions to this Corporation and that it would draw loan finance from the various financing institutions. In case such a Corporation is set up, the provisions made above for various Plantation Schemes can then be utilised for providing the share capital contribution of the State Government.

Once the Corporation is established, projects can be formulated for implementation by the Corporation with Institutional Finances. We have already under consideration Teak Projects one each for Telangana and Coastal Andhra and Pulp Wood, Plantation Project for Coastal Andhra. A shelf of projects may be built up and the Corporation may take them up as it gains experience. It is proposed to transfer the existing budget provision for various plantation schemes to the proposed Corporation. In that case the physical programmes would far more than envisaged now.

With the establishment of the State Forest Corporation a close co-operation between the financing institutions and the department would be necessary.

SPECIAL FEATURES :

The general approach in the Plan is that the strategy for each region is so designed that the region develops on proper lines at appropriate pace. It would be clear that the forest programmes have been designed keeping in view the agro-climatic and biotic conditions in the different areas as also the basic requirements of different areas for related activities like animal husbandry, soil retention, water conservation, etc.

Further, substantial employment is expected to be created in the Afforestation programme. Under State Plan itself, it is expected that 21 Senior Officers, 386 non-gazetted cadre posts and 139 Attenders would be employed directly by the department in addition to overall employment of about 6,000 to 7,000 persons. This employment may not however be continuous or at the same place.

CENTRALLY SPONSORED SCHEMES:

There are a number of Central Sector and Centrally Sponsored Schemes. It is proposed to ensure that the Central Sector Schemes flow to the State in keeping with the requirements of the State. One of the important measures suggested above is the establishment of Corporation and for this the Centre is expected to contribute towards share capital. The Plantation of quick growing species in the country is expected to be financed by the Centre to the tune of Rs. 24 crores covering 3 lakh hectares. Considering the climatic conditions of this State with its substantial drought area, a programme for 25,000

hectares costing Rs. 2 crores is being drawn up. A similar scheme in the Central Sector for fuel wood plantation at Rs. 25 crores for 5 lakh hectares is suggested for the country. A programme for Rs. 1.25 crores covering 25,000 hectares is being formulated for the State. Further, a Forest Resources Survey scheme is being drawn up for the State at an outlay of Rs. 50 lakhs out of an amount of Rs. 4 crores for the country. Similarly out of Rs. 300 lakhs for National Parks, Rs. 50 lakhs would be needed by this State. A credit of Rs. 3 crores from Central Forest Credit Corporation is being sought.

The State is also interested in schemes of the Forest Research Institute and Co-ordinated Research Scheme as also the National Forest Resources Survey. The provisions for these schemes at the national level are Rs. 800 lakhs and Rs. 400 lakhs respectively. These schemes are already being implemented in the Fourth Plan and therefore it is necessary to continue and expand the activities at a cost of Rs. 80 lakhs and Rs. 40 lakhs respectively.

9. FISHERIES.

Fisheries is one of the sectors to which importance is sought to be given in the Fifth Plan. The three main objectives envisaged for the Fisheries sector are increase in fish production to meet the protein requirements, development of export potential and improvement in the economy of fishermen. This is based on a number of considerations, firstly fisheries is a source of protein rich food which has so far been rather inadequately exploited. For several reasons among the more important of which are (i) lack of harbour (berthing) facilities hampering large scale mechanisation of fishing, (ii) lack of extensive infrastructural facilities like roads connecting fishing villages to marketing/collection centres, provision of ice plants-cum-ice cold storages at suitable points in coastal areas (iii) adverse seasonal factors etc. There is both need and scope for immense increase in production of marine as well as inland fisheries. Secondly while marine fisheries is already an important foreign exchange earner, there is considerable potentiality for a step up in this regard. Finally the Fisheries development is intimately related to the improvement of the socio-economic conditions of fishermen who are usually among the most under privileged sections of the population.

The fisheries programme in the State would therefore have to be looked at from two points of view ; firstly as a production and processing programme intended to maximise the production of fish in order to exploit the natural resources available and to improve the availability of a nutritious food and secondly as a programme on which the livelihood of a number of people who belong to the weaker sections of the society depend. Our approach to fisheries development in Fifth Plan takes note of both these aspects.

The State has a coast line of about one thousand Kms. on the east coast of the country, with a marine fishable area of 32,400 Sq. Kms. There are 419 fishing villages along the coast line with a total population of 2 lakhs who are mostly depending on fishing. About 40,000 tanks existing in the State which are mostly seasonal and about 90% of them are irrigation tanks. The number of fishing craft and tackle engaged in fishing occupation in this State is 25,837 and 2,31,672 respectively according to the 1966 Quinquennial Livestock Census.

During the year 1971 marine and inland fish production in the State was estimated at 1,80,435 tonnes and 88,320 tonnes respectively. There is a Marine Fish Research Institute and a fishing Harbour at Kakinada. A boat building yard for building marine and inland boats also exists at Kakinada. Upto 31-3-1972, 391 Marine and 460 inland boats had been constructed in this boat building yard. The number of mechanised boats operated at Visakhapatnam and Kakinada are about 200. There are cold storage plants at Tadepalligudem, Nellore and Kakinada and freezing plant at Visakhapatnam. There is a Shark

Liver Oil factory functioning at Kakinada. 612 fishermen co-operative societies of all categories are existing in the State of which 595 are primaries.

The approach would be to primarily concentrate on development of Marine Fisheries with emphasis on mechanised boats. Along with this the necessary infrastructure will be built up both under State and Central sector schemes. This could include construction of roads, provision of transport, cold storage and berthing facilities etc. (in central sector) and encouraging private parties to develop tanks useful for fisheries. However programmes for development of Inland fisheries will also be given importance. These would include fisheries development in reservoirs, seed production, supply of inputs encouraging parties to develop fisheries and survey and training programmes schemes which were taken up in the Fourth Plan but which did not prove to be beneficial are not being continued.

REVIEW :

The expenditure on fisheries sector was Rs. 10.39 lakhs in the First Plan Rs. 61.63 lakhs in the Second Plan and Rs. 130.48 lakhs in the Third Plan. The expenditure incurred in the subsequent three Annual Plans was Rs. 123.22 lakhs. The anticipated expenditure during the Fourth Plan would be Rs. 173.07 lakhs.

A scheme for development of reservoir fisheries for Nagarjuna Sagar and other reservoirs was taken up involving a survey. The survey for Nagarjuna Sagar is complete, while for others it is under progress. A scheme for construction of mechanised boats for marine fishing was taken up at Kakinada. It is however, anticipated that only 119 boats would be constructed during the Fourth Plan as against 208 originally envisaged. Two Inland Fisheries Training Centres were started at Penakacharla and Warangal. A sum of Rs. 1.5 lakhs was released as share capital to the Andhra Fishermen Central Co-operative Society to enable it to participate in the Agriculture Refinance Corporation scheme of refinance for provision of boats to fishermen. Improvements of fish farms and nurseries were undertaken to facilitate fish seed production programmes. About Rs. 14 lakhs were spent in the Fourth Plan for the purchase of seed and for improvements to the nurseries. However the actual production fell short of expectation as the programme had to face adverse seasonal conditions. Subsidy to the tune of Rs. 6.87 lakhs was granted to smaller fishermen for purchase of indigenous craft and tackle. This scheme was however more in the nature of assistance to poor fishermen towards replacements and repairs than a substantial production augmentation programme. Supervisory staff for marketing and statistics was also created during the period.

Originally there was a proposal to establish a Fishing Corporation and fishing company undertaking. There were also schemes for hydro-graphic survey of proposed fishing harbours and for preparing project reports for the harbours. These schemes were not undertaken for various reasons, among which availability of services, to the advantage of the State, of the investment survey unit of U. N. D. P. Some

ameliorative measures in the nature of welfare programmes were also undertaken with an expenditure of Rs. 4.80 lakhs during the Fourth Plan. Loan amounts to the tune of Rs. 6.12 lakhs would have been provided by the end of the Fourth Plan for various Fishery Societies and to Zilla Parishads to assist identified schemes for development of fisheries.

OBJECTIVES :

The objectives of the programme under fisheries are ;

- (1) to continue to encourage marine fishing with improved craft and gear primarily through mechanisation which had not yet picked up fully in the Fourth Plan ;
- (2) to provide transport facilities for marketing and processing ;
- (3) to coordinate these programmes with the construction of fishing harbours, laying of roads connecting fishing villages with processing centres and providing amenities for storage and creating sufficient infra-structure for marketing ;
- (4) to develop fish seed farms near the major reservoirs like Nagarjunasagar, Pochampad, etc., for which surveys have been conducted in the Fourth Plan period and also near other reservoirs ;
- (5) to single out and develop tanks useful for fishery development by reclamation and formation of tanks exclusively for fish culture ;
- (6) to provide sufficient assistance for fishing with non-mechanised contrivances ;
- (7) to encourage co-operatives while ensuring effective supervision of their works ; and
- (8) to intensify training in fisheries research and survey.

PROGRAMME DETAILS:

The following table shows the financial allocations at a glance, for schemes proposed in Fifth Plan for the State :

(Rs. in lakhs)

<i>Scheme</i>	<i>Anticipated expenditure in Fourth Plan</i>	<i>Fifth Plan provision</i>
(1)	(2)	(3)
(a) Development of Marine Fish at Kakinada	128.54	200.00
(b) Assistance for fishing with non-mechanised contrivances	..	25.00
(c) Development of reservoir fisheries of Nagarjunasagar and other reservoirs	8.37	47.00
(d) Reclamation and formation of tanks exclusively for fish collection	..	37.50
(e) Supply of inputs to inland fishermen	..	10.00
(f) Improvements to fish farms, nurseries and fish production	13.96	85.00
(g) Provision of transport facilities	..	5.50
(h) Training in surveys and fisheries research	5.50	40.00
(i) Strengthening and supervision of Co-operatives	3.32	11.00
(j) Strengthening of marketing, statistics, Directorate and Divisions	4.10	16.00
Total	158.69	421.00

The following table shows the base level at 1968-69, anticipated achievements in the Fourth Plan and the targets envisaged for Fifth Plan.

Physical targets anticipated at the end of Fourth Plan and targets for Fifth Plan.

S.. No.	Item	Unit	Base level (1968-69)	Fourth Plan anticipated achievements	Fifth Plan targets
(1)	(2)	(3)	(4)	(5)	(6)
I. Physical Programmes					
1.	Mechanised boats	.. No.	270	129	150
2.	Trawlers ..	.. No	..	..	..
3.	Refrigeration	..			
	(a) Cold Storages	.. No	6	..	..
	(b) Ice Plants	.. No	6	..	..
	(c) Freezing Plants	.. No	1	..	..
4.	Minor ports with landing and berthing facilities	.. No	1	1	2
5.	Fish seed procured ;				
	(a) Spawn ..	.. Million	..	68.5	75
	(b) Fry/Fingerlings	.. ,,	129.94	216.78	100
6.	Fish Seed Farms established..	.. No	92	..	8
	Area ..	..Hectares	200 (approx)	..	48
7.	Nursery area ..	.. Hectares	..	10	10
8.	Development of reservoirs	..	..	..	..
II. Fish Production					
	(a) Inland ..	.. Tonnes	75,921	4,50,000	..
	(b) Marine ..	.. Tonnes	147,264	7,35,000	..
	Total ..		2,28,185	11,85,000	..

(a) Development of Marine Fishing :

At present there is a fishing harbour at Kakinada with berthing facilities for 30 boats of 32' to 37' length each with a draft of 3'-4'. In Visakhapatnam there is heavy dependance on the Port authorities and utilising the Sourthern Lighter Canal at Visakhapatnam to a limited extent as per the restrictions imposed by the Port Trust, Visakhapatnam. Such restrictions have resulted in provision of

berthing facilities only for 50 boats of 4'-5' draft each. All our mechanised fishing operations are only with these two places as the base for operations. At present about 200 boats are operating from these two centres. Unless many more fishing harbours are established, rapid mechanisation of fishing craft with a view to intensify exploitation of shore and deep-sea fishery resources cannot take place.

During the Fifth Plan, it is proposed to organise a Marine Fisheries Corporation enlisting the Agricultural Re-finance Corporation, State Financial Corporation, the Agro-Industries Corporation, the Small Scale Industries Corporation and the State Government as its members. The corporation will have as its sphere of activity only programmes of fishing development with considerable commercial position. The intention is to place the Government Boat Building Yard at Kakinada under it with a view to give powerful impetus to mechanisation programmes.

As some time will be required for the formation of the Corporation, it is proposed to run the Boat Building Yard, under the control of the Department till the Corporation is set up. An amount of Rs. 2 crores has been provided to construct 150 boats. As and when a scheme for Corporation is finalised and accepted by Government and a Corporation is set up with responsibility for running a Boat Building Yard, necessary funds from this head will be passed on to the Corporation.

If the creation of additional berthing facilities through construction of additional fishing harbours at Nizampatnam, Narsapur, Kakinada (IInd stage) etc., were to materialise in the course of Fifth Plan, full utilisation will have to be ensured and if need be appropriate reorientation of programmes undertaken.

(b) Assistance to fishing with non-mechanised contrivances :

The pelagic fisheries of inshore areas are fairly well exploited by gill nets and boat-seines. The demersal fisheries were under exploited till trawling came in 1960. But of late bottom gill nets have proved effective in fishing prawns (demersal variety) and there is need to intensify it.

A mechanised boat of 10-12 metres, costs about Rs. 1.25 lakhs to 1.50 lakhs, employs 5 persons and catches about 40 tonnes of fish. An indigenous fishing unit (craft and tackle) costs about Rs. 5,000, employs three to four persons and catches about 5 tonnes of fish. So for an investment of Rs. 1.25 lakhs there would be :

- (i) One mechanised unit employing 5 persons catching 40 tonnes;
- (ii) 25 indigenous units employing 75 to 100 persons catching about 125 tonnes.

Thus, mechanised fishing is capital intensive and has poorer potential in respect of employment generation. Moreover the mechanised fishing programme cannot replace the indigenous fishing in the inshore areas indigenous fishing can continue with a comparatively low investment with commensurate return. Therefore the indigenous

fishing in inshore regions has to be intensified. Hence an amount of Rs. 25.00 lakhs has been suggested for intensifying indigenous fishing during the Fifth Plan, enabling 500 units at the rate of 100 units per year and annual additional production of about 500 tonnes.

(c) *Development of reservoir fisheries of Nagarjunasagar and other reservoirs :*

It is desirable to establish fish farms under reservoirs themselves. It is proposed to take up Pochampad, Kadam, Nagarjunasagar, Musi and Bahuda reservoirs during the Fifth Plan period. It is also proposed to establish new farms under the Krishna Barrage in Krishna or Guntur district and under Nagavali or Vamsadhara Projects in Srikakulam district where fish seed required to be stocked in tanks will be produced.

(d) *Reclamation and formation of tanks exclusively for fish collection :*

With a view of increasing the number of times the fry produced in departmental fish farms are lifted and thereby obtaining optimum production with the seed stocked, it is essential to renovate the tanks to increase their water retentivity. It is also desirable to encourage private people to take up pisciculture by encouraging them to dig or deepen the tanks by extending some subsidy as an incentive.

The main aim of the scheme is to provide incentives to individuals or to the institutions who come forward for construction of tanks or deepening of tanks exclusively to be used for fish culture. The deepening should increase the water retentivity of the selected tanks. They should be able to retain water atleast to a minimum depth of 3 feet during the summer months till they receive fresh water in the next monsoon. On the expectation that (i) mostly Panchayats alone will be participating in the scheme, and that (ii) to the extent of at least 25% of the cost of improvement of any one tank, the Panchayats will find their own resources, it is proposed to make 75% of the cost available as loan recoverable in easy instalments, subject to conversion of 25% into subsidy, if the Panchayats utilise the tanks covered under the scheme for fishery development at least for a period of three years. A similar concession may be made available to private parties also, to encourage private participation in fisheries development. The proposed outlay of Rs. 37.50 lakhs is broken up into subsidy and loan as follows :—

(a) Subsidy	Rs. 12.50 lakhs.
(b) Loan	Rs. 25.00 lakhs.

All the tanks constructed or deepened under this scheme should have proper inlets and outlets guarded with screen shutters as recommended by the Department. The beneficiaries should take up fish culture on scientific lines as recommended by the Fisheries Department.

Under this scheme a provision of Rs. 37.50 lakhs has been made. It is expected to get Rs. 12.50 lakhs from Panchayats and private parties. Thus at a total expenditure of Rs. 50.00 lakhs it is proposed

to reclaim/ deepen 600 acres and realise an additional annual production of 150 tonnes of fish. The manual effort involved in such a programme will result in reduction in the proportion of un-employment in the villages.

(e) Supply of inputs to inland fisherman :

It is proposed to supply nylon yarn required for fishing in inland waters at a subsidised cost of 50%. An amount of Rs. 10.00 lakhs has been provided during the Fifth Five Year Plan. As the returns of the Inland Fishermen compared with returns of the Marine Fishermen are distinctly low, a subsidy of 50% is proposed for Inland Fishermen as against 25% subsidy proposed for Marine Fishermen.

(f) Improvements to fish farms, nurseries and fish-seed production :

It is a continuing scheme. Production of quick growing varieties of fish seed is the back bone in the development of Inland Fisheries. Through all the resources available the average production of fish seed in the State is about 100 lakhs per year, whereas the estimated requirement of seed is 25 crores. The present rate of production is therefore, a small fraction of the total requirement. Hence it is proposed to continue the scheme to achieve a target of atleast 200 lakhs as the production of fish seed is linked up with other programmes contemplated.

(g) Provision of transport facilities :

For providing dependable transport facilities to the Fisheries Department for the transportation of fish seed and breeders to cope with the intensive fish seed production and reservoir development programmes under the Fifth Plan, it is proposed to provide funds for the purchase of 16 four-wheel drive pickup vehicles with an expenditure of Rs. 5.00 lakhs to be supplied to the divisions wherever they are needed and further earmark a sum of Rs. 0.50 lakh to be utilised as marginal money to enable the Co-operative Society to go with insulated vehicles for transportation of fish from landing places to the markets through the Fishermen Marketing Societies wherever they are found to be working on sound lines.

(h) Training in Surveys and Fisheries Research :

An amount of Rs. 40 lakhs is provided for training of marine fishermen in the Fisheries Training Institute, Kakinada and training to Inland Fishermen at the two Inland Fisheries Training Centres (Warangal and Penakacherla). This will be continued during the Fifth Five-Year Plan.

The Central Institute of Fisheries Operations, Government of India, have started training courses in the following branches :

1. Fishing second hands course, and
2. Engine drivers course.

When harbours come up, more mechanised boats of different sizes will be introduced. To handle these boats many trained candidates will be required. It is therefore proposed to depute interested fishermen and non-fishermen to undergo training in these courses.

(i) *Strengthening and supervision of Co-operatives :*

In the Fifth Plan it is proposed to limit Departmental effort to the establishment of only seven new co-operatives each at a reservoir (that is at Nagarjunasagar, Moosi and Hyderabad etc). One of the objects will be to revitalise 10 co-operatives per year in the coastal area of the State, so as to enable them to be equal to the taste of handling the larger catches expected from the Fifth Plan programmes, for distribution of mechanised draft to intensify utilisation of off-shore fishery resources and for assistance to 1,000 indigenous units (Marine) with a view to more intensive exploitation of inshore fishery resources.

(j) *Strengthening of Marketing, Statistics, Directorate and Divisions :*

It is proposed to strengthen the administrative machinery in the Department of Fisheries for building up a better statistical base and for meeting the additional responsibilities created by the larger programme envisaged in the Fifth Plan.

CENTRALLY SPONSORED SCHEMES :

It is absolutely essential that the Central Government associates it self actively with a package of investment programme for development of fisheries. Firstly landing and berthing facilities for marine fisheries should be given greater importance in the context of Andhra Pradesh. A net work of these facilities would immensely facilitate the development of marine fishing in this State. A detailed programme at an estimated cost of Rs. 4 crores is being submitted to Government of India separately.

The provision of roads to connect the more important fishing villages with the nearest market road is a priority item both from the point of opening up these backward coastal villages and from the point of view of enabling the economic exploration of fisheries wealth. The Minimum Needs Programme does not cover the special problems of these fishing villages. At the same time the State finances are locked up in supplementary investments in the rest of the area. Therefore central sector programme for construction of roads is essential

Similarly, establishment of ice plant and cold storage facilities need to be taken up on a large scale. Proposals amounting to Rs. 5 crores for roads, Rs. 50 lakhs for cold storages and ice plants and Rs. 50 lakhs for extension organisation is being submitted to Government of India. Fisheries extension organisation is also an urging need in this State-under this too considerable provision will be required.

Employment opportunities :

The direct employment opportunities in the Department itself are estimated at 161 technical personnel, 91 non-technical educated persons and 79 attenders. In addition, it is estimated that 1,500 fisherman would additionally be employed apart from the increased income possibilities for those who are already employed in this avocation.

10. MARKETING AND WAREHOUSING

Marketing of agricultural produce is an integral part of any production programme in the economic sense because the labour of the agriculturist in raising high yields is only fructified when he can dispose off his produce at remunerative price. Thus, much of his welfare depends on the higher share he can secure from consumers payment, consequent to organised marketing of agricultural produce.

In the guidelines of the Planning Commission it is stated that the objective of the Fifth Plan would be to regulate all the market and submarket yards in the country. Development of regulated markets to fulfil their role as the fair market for the farmer's produce will have to be intensified during the Fifth Plan. Taking the experience of Punjab and Haryana, these markets should be developed into centres of market development and communication development. To ensure the benefits of regulation, grading and standardisation of agricultural produce would have to be introduced on a bigger scale. It is further stated that in the Fifth Plan, considerable stress will be necessary on expansion of storage facilities.

Keeping with the National Approach the State has designed its approach to the problems of Marketing. The Problems of marketing can be classified into (a) Regulation of trade centres; (b) Grading of agricultural produce from and into the markets, and (c) Providing market intelligence and furnishing ad-hoc commodity survey reports for the benefit of the trade in general and setting up of Agro-Industries in particular. The proposals concentrate on grading, organisation of marketing for produce sponsored specially, subsidies to Market Committees to establish yards and training programmes.

In warehousing it is proposed to contribute to share capital for increasing the storage capacity.

MARKETING:

REVIEW:

Consequent on the enforcement of Andhra Pradesh (Agricultural Produce and Livestock) Market Act, from April, 1970 the Government have renotified 296 markets. Grading was undertaken with a view to promoting organised marketing on the basis of Statutory and Commercial Grading. Four oil and ghee grading centres at Muddanur, Samalkot, Vijayawada and Giddalur were set up to help the small Packers of oil and ghee who could not set up their own laboratories to export quality certified products and also to provide quality products for the consumer. During 1971-72, 4,660 quintals of ghee 929 quintals of oil and 7.98 quintals of honey were graded in government laboratories. Grading at primary market has also been introduced in various markets like Warangal, Suryapet, Nizamabad, Adoni and Duggirala where important commodities like castor, ground-nut and chillies and turmeric are being graded before sale. The Market Committee at Warangal, Nizamabad and Guntur also appointed graders to

grade various commodities like groundnut, onion, turmeric and chillies at some important producing centres. In order to help the cotton growers to fetch prices commensurate with quality Kapas, grading units were set up at Pamarru and Bhainsa besides the centres at Adoni and Adilabad. Upto the end of 1972-73, about 2 lakh quintals of cotton Kapas were graded in these centres. One additional grading unit at Chilakaluripet has also been set up in 1972-73. Grading of Mesta on the basis of commercial grades was taken up during 1970-71 in 20 selected retting centres of Visakhapatnam and Srikakulam and a quantity of 23,000 quintals of Mesta was graded in 1971-72 before putting up for sale in open auction. Grading of Tobacco was also taken up as a Pilot scheme in Chowdaripalem area of Kavali taluk. A quantity of 549 quintals of Tobacco valued at Rs. 2.20 lakhs was graded during 1971-72.

In order to project the market behaviour of various important crops, reports and brochures on different aspects are prepared and published for the use of trade and industry. On account of sizeable area under cashewnut plantations in the State mostly confined to the coastal districts, survey on marketing of cashewnut in the State has been undertaken.

OBJECTIVES AND STRATEGY:

The objectives of the programme in the sector are.

- (a) to regulate markets so that producers may sell their produce at a competitive rate and deliver goods to the buyer with correct weighment;
- (b) to educate the agriculturists in such a way that he can sort out and grade his produce properly to enable him to get proper price;
- (c) to provide the graders and producers with market information i.e., prices, trend of prices, arrivals and their demand.

The strategy proposed for achieving the above objectives are to notify the remaining 54 markets under Agricultural Markets Act and also to take up regulating other crops like forest produce, horticulture produce and livestock products.

PROGRAMME DETAILS:

The schemes proposed to be taken up under Marketing are as follows.

<i>Scheme</i>	<i>Cost (Rs. in Lakhs.)</i>
1. Grading of Commercial Crops at farm level (seasonal staff for six months) and to conduct survey of crops and markets.	10.30
2. Scheme for providing subsidy to the Market Committees for purchase of sites to new markets (Subsidy at Rs. 10,000 per market i.e. Rs. 5.00 lakhs for 50 markets).	5.00

3. Scheme to organise marketing of crops sponsored by the Department of Agriculture under production programme.	3.00
4. Training programme in agricultural marketing ..	0.50
5. Scheme for strengthening administrative set up in districts due to enforcement of regulation of markets.	
(a) Strengthening district unit Offices and setting up of 4 additional Unit Offices.	19.40
(b) Regional set up for marketing	5.30
(c) Strengthening the Directorate of marketing ..	6.50
	50.00

Out of 350 markets identified as important wholesale markets in the State 256 have already been notified and during the Fifth Plan period it is proposed to notify the remaining 94 markets. The Live-stock markets which are at present under the control of Municipalities and Local Panchayats will be taken over in accordance with the provision of the Andhra Pradesh (Agricultural Produce and Livestock) Act and existing mal-practices in cattle trade will be removed.

The object of the scheme for grading is to educate producers on proper method of grading and assortment of crops especially chillies turmeric, tobacco, ground-nut, mesta, cotton and castor so that producer may secure higher prices. It is proposed to implement this scheme jointly by the Government and Agricultural Market Committees for a period over 3 years. The scheme envisages appointment of Seasonal Graders at a consolidated pay of Rs. 150 p.m. Assistance will be provided to the Market Committees on a tapering basis for the above purpose. It is also proposed to appoint 50 Marketing inspectors at the rate of 2 per district to conduct detailed survey of the crops and markets during the off season besides supervising the grading of commercial crops at farm level.

The Market Committees are not in a position to construct markets and provide amenities because they do not have adequate funds to purchase sites. In order to quicken the pace of development of the markets it is proposed to give a subsidy of Rs. 10,000 per market for the purchase of sites to 50 markets during the Fifth Plan period.

In view of the enforcement of Marketing Act the duties of Assistant Directors of Marketing increase manifold. They have to inspect the offices of the Market Committees, scrutinise the bye-laws proposed by the Market Committees, assist the Market Committees in the discharge of their functions, function as person-in-charge wherever the Market Committees are not constituted by the Government, and also organise grading at farm level. Further, there is no district, un it functioning in Nellore, Khammam, Medak and Prakasam districts. Unless office of the Assistant Director of Marketing is established in each of the districts and unless they are properly reinforced and strengthened it is not possible to exercise proper supervision and control over the collection of market fees of the Market Committees. It has, therefore, been proposed to strengthen the existing Offices of the Assistant Directors of Marketing.

In order to exercise supervision and administrative control over the district staff and the Market Committees, it is also proposed to establish three regional units with three Deputy Directors of Marketing. It is also proposed to strengthen the directorate by appointing a Joint Director of Marketing to cope up with the additional work.

WAREHOUSING:

The Warehousing scheme was started with twin objectives of providing scientific storage of foodgrains and other notified commodities and to extend easy and cheap credit facilities to the agricultural classes to strengthen their withholding power. Prior to the introduction of this scheme the agriculturists were absolutely helpless in the hands of the moneylenders and middlemen and they were not in a position to retain their produce for sometime to wait for better prices. As such warehousing scheme proved a boon to the agriculturist besides avoiding of loss of foodgrains due to faulty storage.

REVIEW:

During the Fourth Plan period the State Government has provided a sum of Rs. 6 lakhs which would fetch an equal amount from the Central Warehousing Corporation. Out of this total of Rs. 12 lakhs contributed by the State Government and the Central Warehousing Corporation, the State Warehousing Corporation could construct godowns only at 4 places creating a potential of 800 tonnes during the Fourth Plan period. The godown capacity of the Corporation in the State as on 1-4-1978 was 79,415 tonnes of which 42,370 tonnes was in owned warehouses and the balance in hired warehouses.

During the early days of its set-up the Corporation was having only 4 warehouses. Now most of the districts in the State have been covered with a net work of warehouses numbering 86 attached with 55 branch warehouses.

OBJECTIVES AND STRATEGY:

The objective of the warehousing scheme in the Fifth Plan is to provide storage facilities on scientific lines covering even the remote areas with the net work of warehouses so as to avoid transportation problem and to meet the holding capacity of the agricultural classes.

PROGRAMME DETAILS:

The State Government have provided an amount of Rs. 1 crore as contribution to the Corporation which will enable the Corporation to secure a matching contribution of another crore of rupees from the Central Warehousing Corporation. With this outlay of Rs. 2 crores during the Fifth Plan period the Corporation proposes to set up 42 new warehouses and to construct 62 godowns for a capacity of 2 lakh tonnes.

An investment of the above order would involve the appointment of 42 Warehouse Managers 50 Technical Assistants and 50 Junior Assistants besides the other ministerial staff.

11. CO-OPERATION.

APPROACH :

The significant role that Co-operation has to play in the economic development of the community and particularly in the uplift of weaker sections of the community by extending it to the wide range of economic activities related to the weaker sections of the community has been mentioned in the approach to the State Plan itself.

In the light of the various considerations mentioned in the approach, the objectives of the Co-operative Development Programme during the Fifth Plan would have to be :

- (i) to revitalise the credit structure so as to provide a vital infrastructure for agricultural production ;
- (ii) to strengthen and extend the area of operation of the Co-operative Organisation in the field of marketing and processing so as to ensure that the full benefits of production flow to the cultivator;
- (iii) to organise various types of Co-operative Farming Societies so as to assist those who would be benefitting from the assignment of Government waste lands and from the distribution of surplus land under land Reforms and in particular, belonging to the Scheduled Castes and Tribes ;
- (iv) to take up Special programmes with a view to assist the weaker sections of the population such as small and marginal farmers;
- (v) to strengthen and further increase the role of Co-operatives in the field of distribution to subserve the National objective of holding the price line ; and
- (vi) to take up Employment Oriented Programmes for providing employment to the weaker sections of the population and the educated un-employed.

REVIEW:

(a) Short and Medium-term Credit Programmes :

The Co-operative Primary Agricultural Credit Societies and Central Banks continue to be the Principal Institutional agencies for financing agricultural production by providing short-term and medium-term credit to the agriculturists. There were 14,916 large sized co-operative Societies. Small Credit Societies and rural banks at the end of 1969-70. No further organisation of societies was taken up in view of the re-organisation programme taken up for making viable units. There are 25 Co-operative Central Banks and one Apex State Co-operative Bank. These institutions are assigned with the role of the implementation of Short-Term and Medium-Term Credit Programmes. The following is the progress in the issue of shortterm and medium-term credit since 1968-69, the base year for Fourth Plan.

(Rupees in lakhs)

Year.	Target for issue of loans.			Loans issued achievement.			Percentage of achievement.
	S.T.	M.T.	Total	S.T.	M.T.	Total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1968-69 (Base Year)	3,820.00	315.00	4,171.00	2,391.00	126.06	2,518.95	62.06
1969-70	3,700.00	300.00	4,000.00	2,338.13	163.86	2,501.99	62.55
1970-71	3,850.00	350.00	4,200.00	2,435.48	64.42	2,499.90	59.52
1971-72	3,050.00	150.00	3,200.00	2,729.94	61.10	2,791.04	89.22
1972-73 (Anticipated), ..	2,950.00	250.00	3,200.00	2,650.00	150.00	2,800.00	..
1973-74	3,400.00	300.00	3,700.00	2,800.00	200.00	3,000.00	..

The poor progress in the issue of Short-Term and Medium-Term credit in the State is mostly on account of adverse seasonal conditions for the past four years. As a result the repaying capacity of the agriculturists was impaired and the overdues in the Co-operative Central Banks increased year after year.

To study the reasons for the mounting overdues and to suggest remedial measures Government have constituted a study team in G.O. Ms. No. 815 Planning and Co-operation Department dated 11th Jun. 1973.

b) Viability programmes of Primary Agricultural Credit Societies :

The reorganisation of the 14,916 Primary Agricultural Credit Societies, etc., into viable units has been taken up and it is expected to be completed by the end of 1973-74. After completion of this programme, 7,500 viable societies are expected to emerge by the end of 1973-74.

Long Term Credit Programme :

The general situation in the State calls for a progressive shift in emphasis to developmental finance for improving productivity of land on the basis of new technology. The approach in the Fifth Plan will be to lay stress on stepping up of economic level of small and weak farmers.

During the Fourth Plan period the Andhra Pradesh co-operative Central Land Mortgage Bank with its net work of 184 Primary Land Mortgage Banks has been assigned the role of providing Long Term Credit facilities, to the Agriculturists. The Andhra Pradesh Co-operative Central Land Mortgage Bank has envisaged a programme of Rs. 150 crores for the Fourth Plan period. In view of the bottlenecks which arose out of technical clearance and change over to new terms of lending consequent upon the implementation of the I. D. A. programme, the programme was revised to Rs. 100 crores for the Fourth Plan in May, 1972. Long Term Loans issued during 1968-69, the first 3 years of the Fourth Plan and the anticipated targets for 1972-73 and 1973-74 are as follows :

(Rs. in crores)

Year	Original target	Long Term Loans issued
1968-69 (Base year)	20.00	17.81
1969-70	26.00	19.19
1970-71	28.00	19.77
1971-72	80.00	17.22
1972-73	32.00	7.97
		(anticipated)
1973-74	34.00	22.00
		(anticipated)
Total	150.00	86.15
		Probable achievement is Rs. 86 crores for Fourth Plan)

The reasons for short falls are :

(1) Increase of overdues in some banks and the unsatisfactory working of some others.

(2) The condition laid down by the Reserve Bank of India that Land Mortgage Banks should issue loans in the ratio of 70:20:10 for easily identifiable productive purposes, not easily identifiable purposes, and unproductive purposes, which affected lending in the coastal areas where there was not much scope for easily identifiable productive purposes.

(3) The procedures involved in obtaining technical clearance in regard to ground water availability.

(4) 28 Taluks having been entrusted to the commercial banks for long term loaning for many of the purposes for which they were being issued previously by the Primary Land Mortgage Banks.

Further, overdues are the general reasons for the shortfall. As against the demand of Rs. 12.82 crores for the year 1971-72 the Andhra Pradesh Co-operative Central Land Mortgage Bank could collect Rs. 12.28 crores from the Primary Land Mortgage Banks leaving a balance of Rs. 0.54 crores which works out to 4.21% of the demand. Out of the total demand of Rs. 16.9 crores from members (ultimate borrowers) the Primary Land Mortgage Banks could collect Rs. 14.28 crores leaving a balance of Rs. 1.81 crores which in terms of percentage works out to 11.27%. Continuous drought for two years has contributed to the increase in member's overdues. It is therefore necessary that stabilisation arrangements are made in the case of Long Term Loans also to facilitate postponement of recovery of loan instalments in special circumstances like drought, cyclones etc. as has been done in the case of short term credit programmes.

By the end of Fourth Plan the State Government's contribution to the ordinary and special debentures will be of the order of Rs. 1060.69 lakhs and Rs. 643.69 lakhs respectively. The expenditure on cost of staff under Ayacut Development schemes will be Rs. 34.56 lakhs.

Taking the level of Development of Long Term Loaning by the end of Fourth Plan at Rs. 86 crores with an expected shortfall of Rs. 14 crores, in the total revised programme of Rs. 100 crores, the target for Fifth Plan is fixed at Rs.130 crores. This means an increase of Rs. 44 crores working out to an annual linear growth rate of 9%. Of this the ordinary debentures programme will be Rs. 100 crores and the special debentures programme will be Rs. 30 crores. The State Government's contribution to the ordinary and Special debentures of the Co-operative Land Mortgage Bank will be of the order of Rs. 13.30 crores and Rs. 6.70 crores respectively.

The debentures participation required by the State Government have been included in the Fifth Plan proposals as follows.

(Rs. in crores.)

		<i>Ordinary debentures</i>	<i>Special debentures</i>	<i>Total.</i>
(1)	(2)	(3)	(4)	(5)
1.	Target of Loaning for Fifth Plan.	100.00	80.00	180.00
2.	Investment by State Government.	18.80	6.70	20.00
3.	Total outlay on Long Term lending programme during Fifth Plan.	..	..	20.00

Besides this an amount of Rs. 60 lakhs has been provided towards cost of staff and supervisors under the Nagarjunasagar Project and Pochampad Project Schemes etc., for the Fifth Plan period intended for the minimum administrative and Departmental supervision required for the land development schemes in these areas.

(c) *Marketing :*

There are 247 general purpose marketing societies and 44 single purpose commodity marketing societies in the State covering all mandal centres. There are 20 District Co-operative Marketing Societies and one Apex Marketing Federation. The Co-operative Marketing Societies in the State are not undertaking much business of marketing of Agricultural produce. Due to withdrawal of consignment-cum-credit scheme in 1970, they are not able to undertake sale of fertilisers and controlled commodities, Consequently the societies have become financially weak. While the business turnover of the primary co-operative marketing societies during 1968-69 was of the order of Rs. 670.00 lakhs it was only of the order of Rs. 425.00 lakhs during 1969-70. A phased programme for revitalisation of the primary co-operative marketing societies has been drawn up to strengthen the financial position of these primary co-operative marketing societies.

The Andhra Pradesh Co-operative Marketing Federation has been assisting the Co-operatives for procurement of paddy and rice. The societies have procured about 40,000 tonnes paddy worth about Rs. 2 crores and supplied rice to the Food Corporation of India.

The Andhra Pradesh Co-operative Marketing Federation exported to other states maize worth Rs. 289 lakhs during 1967-68. Business during 1968-69 and 1969-70 was only of the value of Rs. 8.4 lakhs and Rs. 5 lakhs respectively, as monopoly to export maize has been withdrawn by the Government. However the Co-operatives have now gained sufficient experience in the procurement of paddy, milling and supply of rice and are building up an adequate machinery to take up this business on a larger scale.

The Government entrusted the fertilizers business to the Andhra Pradesh State Co-operative Marketing Federation for distribution of chemical fertilisers. Under the National Co-operative Development Corporation sponsored scheme, the Federation was sanctioned a share-capital of Rs. 40 lakhs towards margin money during the years 1970-71 and 1971-72. The total stocks of chemical fertilisers distributed to the societies was of the order of Rs. 1.34 crores.

The Federation was assisted under the Centrally Sponsored Scheme during 1972-73 and will be assisted in 1973-74 with margin money for distribution of fertilisers.

In addition to the above activities, the Federation has been distributing controlled commodities such as rice, sugar, rava, maida, etc., in twin cities and oil engines, pumpsets and zinc sheets. Under the price support scheme, the Federation entered cotton market at Adoni, Guntur and Nellore as agents to Cotton Corporation of India and purchased Rs. 100 lakhs worth of cotton in 1972. Rationed and non-rationed commodities sold by the Federation were of Rs. 40 lakhs in 1971-72.

(d) *Processing :*

At the beginning of the Fourth Plan, there were 185 processing units. 13 more processing units are proposed to be established during the Fourth Plan period bringing the total number to 198 by the end of 1973-74. The following is the latest progress of installation of co-operative processing units :

Type of processing unit	No. of units organised	No. of units installed
<i>Foodgrains :</i>		
1. Rice Mills	145	141
2. Par boiling unit	1	..
3. Rice bran oil mill	1	1
4. Dal Mills	2	2
<i>Sugar Cane :</i>		
1. Sugar Cane Crushers	2	2
<i>Cotton :</i>		
1. Cotton ginning processing units,	5	5
<i>Oilseeds :</i>		
1. Groundnut decorticators	19	19
2. Oil Mills	11	10
<i>Jute :</i>		
1. Jute bailing unit	1	1
<i>Horticulture :</i>		
1. Cold storages	3	..
	190	181

(e) Co-operative Sugar Factories :

There are 8 Co-operative Sugar Factories under production under Co-operative Sector with a crushing capacity of 7,350 metric tonnes of sugarcane per day. Two more Co-operative Sugar Factories are under formative stage with a licenced capacity of 1,250 M. tonnes per day each. Letters of intent from Government of India have been obtained in respect of 5 more factories with a licenced capacity of 1,250 M. tonnes of sugarcane per day each. The ten co-operative sugar factories have 48,363 members with share-capital of Rs. 258.60 lakhs. The State Participation in the share capital of these factories till the end of 1971-72 was to the extent of Rs. 178-50 lakhs and it is expected that this may reach a figure of Rs. 236.75 lakhs at the end of Fourth Plan. The 8 Factories under production produced 7,42,670 quintals of sugar by crushing 7,19,564 M. tonnes of Cane.

(f) Consumers Co-operatives :

There are 24 wholesale Co-operative Central Stores, 797 Primary Consumer Stores, 3 University Consumers Stores and a State Level Federation. There are 8 Departmental Stores and 161 retail branches of the wholesale central stores. All the towns having urban population of 30,000 are covered with Central Stores. The Central stores recorded a total sales turnover of the order of Rs. 7 crores in 1971-72.

There are several factors which will contribute to the increase in the turnover of any consumer stores like provision of adequate working capital, proper management of affairs, etc.,. Several of the central stores like District Co-operative Central Stores, Nizamabad, Super Bazar, Vizag could register appreciable sales mainly due to being financial assistance provided. During the Fourth Plan period action has been taken to rationalise and consolidate the consumers stores structure in the State and no new organisations were taken up.

OBJECTIVES:

Despite all efforts, satisfaction with or confidence in the performance of the co-operatives is sometimes lacking, it is because in some vital respects the co-operative movement in our State is beset with serious and basic problems. Short term credit, which is after all in a sense the most important and fundamental activity of the Co-operative has in our State remained almost stagnant for some years now. The Co-operatives have not always, despite some laudable efforts and achievements done all that they could have or ought to have done for the weaker sections and for small farmers.

The priorities in the Co-operative sector have to be determined against this back ground and consider what in this context would be our basic objectives.

First and foremost, the present image of Co-operation has to be re-furnished by getting rid of the dross that has attached itself to this institution. Stringent action would have to be taken against those guilty of offences such as misappropriations etc.

A drive for the collection of overdues has to be taken up. Unless we accept the elementary principle that loans have to be repaid, no economic institution, whether Co-operatives, or commercial banks, or the Government itself, can continue to function for long. Wealth has to be sought in the rotation of money in the process of borrowing, repaying and borrowing again rather than breaking this chain by allowing dues to accumulate.

The other action for strengthening the short-term credit structure requires the merging of a number of societies into a single viable one.

The Co-operative Institutions have to be reoriented to help serve the weaker sections. This cannot be done by merely allocating more funds for programmes intended for them, but will require a change in the very character of the institutions.

Having thus improved the image of the movement, removed its economic weaknesses and changed the nature of the interests controlling it, we should provide them with the full administrative and financial support necessary to make them function as dynamic instruments with a new social purpose. The mere provision of funds without these administrative and institutional reforms would not suffice.

PROGRAMME DETAILS :

(a) In pursuance of National Policy, the Co-operative Development Schemes will be implemented with increased emphasis on helping the weaker sections and small and marginal farmers and the poorer strata of the Community in general to enable them to achieve employment and at least minimum standards of living. It is estimated that as against the level of Rs. 86.00 crores to be reached, under long-term credit at the end of Fourth Plan, the disbursements at the end of Fifth Plan will increase to Rs. 130 crores. Similarly as against the level of Rs. 135.93 crores expected to be reached at the end of Fourth Plan under Short and Medium Term credit, the level to be reached at the end of Fifth Plan will be Rs. 210 crores.

The 13 Co-operative Central Banks will be strengthened under the rehabilitation programmes. The viability programme of the Primary Agricultural Credit Societies is to be completed by the end of Fourth Plan and the 7,500 viable societies expected to emerge will be strengthened with financial assistance during Fifth Plan period. Revitalisation of Primary Co-operative Marketing Societies will be taken up in a phased manner and they will be strengthened with share capital contribution under the Central Sector Scheme. The total number of processing units by the end of Fourth Plan will be 198. During Fifth Plan, establishment of large and medium processing units will be taken up under the central sector scheme. Working capital requirements at Rs. 80,000 each will be provided to 180 rice mills during Fifth Plan period under the National Co-operative Development Corporation Sponsored Scheme. Out of the total storage requirements of 4.85 lakhs tonnes in the State, 3.65 lakhs tonnes capacity will be achieved by the end of Fourth Plan and 80,000 tonnes storage capacity will be built up during Fifth Plan period availing the assistance under the Central Sector Schemes.

(b) In the State's Fifth Plan, an outlay of Rs. 25.00 crores sector wise Schemes and Rs. 20.60 crores for long Term Credit Programmes under "Minor Irrigation" and "Ayacut Development" has been made for Co-operative Development. The break up of this outlay is as follows:—

(Rupees in lakhs.)

Sector.	Anticipated expenditure in Fourth Plan.	Outlay for Fifth Plan.
(1)	(2)	(3)
(1) Short Term and Medium Term (Agril.) Credit Programmes.	516.36	565.15
(2) Long Term Credit Programme	1739.94 (This provision is made under "Minor Irrigation" and "Ayacut Development".)	2060.00
(3) Employment programmes for weaker sections and educated unemployed.	54.46	601.05
(4) Co-operative Farming	28.04	366.16
(5) Marketing and Processing (including Co-operative Sugar Factories and Storage).	401.27	685.48
(6) Consumers Co-operatives	44.92	190.81
(7) Co-operative Training and Education	82.88	89.85
(8) Administration	48.18	52.00
Total:	2,860.00	4,560.00

(c) Short Term and Medium Term Loans :

On account of the heavy overdues the operational efficiency of the Co-operative Central Banks was effected and they could not implement the loaning programmes successfully.

The Central working group recommended for an annual increase of the lending programmes in Fifth Plan by 20 per cent. Assuming the loaning programme would be achieved at Rs. 30 crores for 1978-74 the target for 1978-79 is to be fixed at Rs. 90.85 crores. As this target

may not be practicable in view of the overdues a more practicable target of Rs. 50 crores (Rs. 45 crores Short Term plus Rs. 5 crores Medium Term) for the Fifth Plan has been fixed. The following is the year-wise programme proposed to be adopted.

(Rs. in crores)

Year.	Target for issue of short term and medium term loans.		
	Total.	S.T.	M.T.
1973-74 (Base Year)	30.00	28.00	2.00
1974-75	34.00	31.50	2.50
1975-76	38.00	35.00	3.00
1976-77	42.00	38.50	3.50
1977-78	46.00	42.00	4.00
1978-79	50.00	45.00	5.00

In order to enable the Co-operatives to achieve the above target and ensure free flow of credit to the agriculturists the main difficulty of mounting overdues will have to be sorted out. This has to be done in two ways.—(1) by re-orientating procedural matters and (2) by studying in depth, the cause for such overdues and measures to overcome the difficulties. Action is being taken by the State Government in regard to item (1) above. As regards the second point the Government have, as mentioned earlier constituted, a Study Team.

The schemes proposed in the Fifth Plan are detailed below:-

Rehabilitation programme of Co-operative Central Banks is an important item in the programme.

Under the Rehabilitation Programme of the Co-operative Central Banks, 13 Co-operative Central Banks in the State are being assisted with long term loans, share capital contribution to improve their operational efficiency with particular reference to collection of overdues and streamlining the loaning policies. Under State Plan Schemes a provision of Rs. 100 lakh (Rs. 66.67 lakhs loan, Rs. 33.33 lakhs subsidy) is proposed for Fifth Plan to assist the weak Co-operative Central Banks.

Since 1971-72 a scheme for award of prizes to the Co-operative Central Bank which mobilises deposits in large measure is under implementation. A provision of Rs. 1.00 lakh subsidy is proposed for this purpose in Fifth Plan.

From 1973-74 onwards, the scheme for creation of common cadres of key personnel of Co-operative Central Banks is proposed to be implemented. A provision of Rs. 10 lakhs subsidy to the Andhra Pradesh State Co-operative Bank in Fifth Plan is proposed for implementing this Scheme.

(d) Co-operative Societies for Weaker Sections and Educated Unemployed, Skilled Artisans etc.,

Employment oriented co-operatives have been organised to ameliorate the socio-economic standards of living of the poorer sections by creating self-employment potential. Taxi and Auto Ricksha Drivers, Cycle Ricksha Pullers, Barbers, Washermen, Printers, Binders, skilled workers, educated unemployed are a few among many such economically backward people who are being assisted under the Co-operative-Development Schemes. The nationalised banks are also providing 85% of the cost. While the State Government is providing 10% of the cost, 5% of the cost is being met by the member to whom the vehicle is being allotted on hire purchase system through co-operatives. The following schemes for settling about 60,000 persons in self-employment jobs by organising 1,775 societies during Fifth Plan period are proposed.

(i) 1,110 taxi drivers are proposed to be assisted with Rs. 27 lakhs as share capital contribution towards 10% cost of 1,110 taxis. 5% cost will be met by the driver members and 85% cost by Nationalised Banks. The societies organised will have to be provided Rs. 10 lakhs as subsidy.

(ii) 1,800 Auto Rickshaw Drivers are proposed to be assisted with Rs. 13 lakhs as share capital contribution towards 10% cost of 1,800 Auto Rickshaws. 5% cost will be met by the Driver members and 85% by Nationalised Banks. The societies organised will have to be provided with Rs. 10 lakhs as subsidy.

(iii) 8,750 Rickshaw Pullers are proposed to be assisted with Rs. 70 lakhs share capital contribution for purchase of Rickshaws at Rs. 800 each. The societies organised will have to be assisted with Rs. 3 lakhs as subsidy.

(iv) It is proposed to assist washermen Co-operatives through share capital contribution at Rs. 200 each for purchase of Iron and other washing materials or to start laundries by a group of them. Similarly it is proposed to assist barbers also at Rs. 200 each for opening saloons by a group of them. For these purposes, Rs. 48 lakhs is provided as share capital participation and Rs. 6 lakhs as subsidy.

(v) It is proposed to organise 45 societies for printers, binders, etc. These societies are proposed to be assisted with Rs. 22.50 lakhs, share capital contribution for purchase of printing machinery at Rs. 50,000 each. These societies are also proposed to be assisted with Rs. 4.50 lakhs subsidy.

(vi) It is proposed to organise 275 Societies for destitute women deserted wives, disabled and poor ladies so as to provide them with gainful employment like sewing, embroidery, dairying, poultry, canteens, etc. It is proposed to assist these societies with Rs. 45 lakhs share capital contribution and Rs. 1.50 lakhs as subsidy during Fifth Plan period.

(vii) It is proposed to organise 60 societies for unemployed engineers, graduates, etc., and assist them with Rs. 52.50 lakhs as share capital contribution and Rs. 1.50 lakhs as subsidy. In order to provide employment to Doctors, Nurses, Compounders, etc., 115 poly

clinics are proposed to be organised. It is proposed to assist them with Rs. 50 lakhs share capital contribution and Rs. 1.50 lakhs subsidy. It is estimated that each clinic will provide employment to 2 Doctors, 2 Compounders, One Nurse and 3 or 4 manual labourers with 5 to 10 beds.

(viii) The workers in the transport trade are not able to enjoy the full share of fruits of their labour. To provide them self employment, it is proposed to organise 70 motor transport societies and assist them with Rs. 70 lakhs share capital contribution towards 10% cost of vehicles. 85% cost of the vehicles will be provided by the Nationalised Banks and 5% by the Worker members. These societies are proposed to be assisted with Rs. 1.50 lakhs subsidy.

(ix) In order to supply agricultural machinery at reasonable hire charges to the cultivators and to provide employment to Engineers, Graduates in Agriculture and other technical/skilled/unskilled persons it is proposed to organise 160 Agro Service Centres during Fifth Plan period. It is proposed to assist these societies with Rs. 50 lakhs share capital contribution and Rs. 3.75 lakhs subsidy during the Fifth Plan period.

(x) It is proposed to assist 250 Labour Contract-Co-operative Societies during the Fifth Plan period with assistance of Rs. 46.20 lakhs. This scheme is intended for replacement of the contract system gradually in the execution of public works and to ensure adequate wages to the Labourers. There are at present 499 labour contract societies in the State with a membership of 33,100 and paid up share capital of Rs. 5.67 lakhs. Financial assistance is provided under Fourth Plan towards working capital, share capital, managerial subsidy, etc. This scheme is proposed to be continued during Fifth Plan at a cost of Rs. 46.20 lakhs.

(xi) There are 2,860 Toddy Tappers and palm Jaggery Co-operative Societies in the State. To solve the problems of the Tappers community and to provide them with gainful employment, it is proposed to assist them through 2,200 societies with the financial assistance of Rs. 68.60 lakhs.

(e) *Co-operative Farming :*

In the Fourth Plan, the emphasis has been more on consolidation rather than expansion of Co-operative Farming Societies. During Fifth Plan, there is need for organisation of Co-operative Farming Societies in view of the assignment of large areas of Government waste land and in view of the distribution of surplus land obtained by the Government under the land ceiling laws besides continuing the consolidation and revitalisation programmes taken up during Fourth Plan period.

The Co-operative Farming Societies have not made much headway due to various reasons. Schemes of dairy farming, poultry farming, cottage and Small Agricultural Industrial Societies have not made any impact on the agricultural community due to inadequate financial assistance provided to them. Lack of adequate and effective departmental supervision has also contributed for the weak position of the farming societies. To study the working of the farming societies and to suggest remedial measures, Government have in G.O.Ms. No. 218

Planning and Co-operation Department, dated 26th March 1971 constituted a Committee under the Chairmanship of Sri G. Siviah Ex-M.L.A. The following Schemes are proposed for implementation during Fifth Plan period.

(i) The Uppal Committee Farming Scheme is under implementation since 1964-65. During Fifth Plan it is proposed to settle 1,000 families and to reclaim 10,000 acres of cultivable waste lands. According to the pattern of assistance Rs. 300 (Rs. 150 loan, and Rs. 150 subsidy) per acre will be given towards reclamation charges and resettlement charges at Rs. 750 (3/4th subsidy and 1/4th loan) per family.

Services of one Senior Inspector for over 8 to 10 societies to improve the working of the societies formed under this Uppal Committee Scheme and to safeguard the funds of the Government are necessary. So far 37 societies were provided with financial assistance and 8 more societies are proposed to be assisted, 7 Senior Inspectors are required for these societies at a cost of Rs. 1.65 lakhs for the Fifth Plan period.

(ii) A Master Plan for organisation of 200 Collective Farming Societies in Konaseema area of East Godavari district has been in implementation since 1966-67. So far 141 Co-operative Collective Farming Societies have been functioning and it is proposed to ensure that 59 more societies are registered during the Fifth Plan period. Each society is eligible for an assistance of Rs. 39,100. The total financial assistance required under this scheme for the Fifth Plan period is Rs. 19.55 lakhs.

A provision of Rs. 8.20 lakhs is estimated for continuance of the departmental staff under this scheme during Fifth Plan period.

(iii) A Master Plan for organisation of 400 Collective Farming Societies by winding up the existing field labour Co-operative Societies in Diviseema (Krishna District) is under implementation since 1968-69. So far 213 societies have been registered. It is proposed to complete the scheme by organising 69 more societies. During Fifth Plan it is proposed to assist 100 societies (69 New, 31 existing) with an amount of Rs. 48.76 lakhs. This is inclusive of Rs. 9.66 lakhs for cost of staff to be continued during the Fifth Plan period.

(iv) There are 741 Co-operative Farming Societies in the State. In the context of surplus lands under land ceiling legislation, it is proposed to form 500 new societies during the Fifth Plan period at the rate of 2 societies in every Panchayat Samithi for the benefit of landless agricultural labourers who will get surplus lands. These societies are to be assisted with financial assistance of Rs. 195.50 lakhs at the rate of Rs. 39,100 per each society. It is proposed to appoint departmental staff for supervision of these societies at a cost of Rs. 20 lakhs for the Fifth Plan period.

(v) A total number of 100 Gramdan and Bhoodan Societies in Cuddapah, West Godavari and Kurnool Districts which are not functioning well will be taken up during the Fifth Plan period for re-organisation into collective farming societies. It is proposed to assist each society with Rs. 26,000 loan and Rs. 9,000 subsidy. The total assistance for all the 100 societies proposed is Rs. 35 lakhs for the Fifth Plan period.

(f) *Marketing, Processing and Storage : (including Co-operative Sugar Factories).*

Agricultural Marketing including supply of Agricultural Production requisites and processing will continue to be assigned a central position in the strategy of Co-operative Development.

The following schemes are proposed in the Fifth Plan :

- (i) Managerial subsidy to processing units provided during Fourth Plan period on graded pattern will be continued during the Fifth Plan period also with a provision of Rs. 1.00 lakh subsidy.
- (ii) Modernisation of rice mills will be taken up at a cost of Rs. 75,000 each during the Fifth Plan period. A provision of Rs. 80 lakhs towards share capital is proposed.
- (iii) The Central sector scheme for installation of new processing units which commenced during 1972-73 will be continued during 1973-74. According to the pattern of assistance 20% to 30% shall be met by the State Government as share capital contribution, while 70% to 80% shall be provided as a loan by the National Co-operative Development Corporation outside the State Plan ceiling. A provision of Rs. 120 lakhs is required during Fifth Plan, out of which Rs. 30 lakhs as Share Capital Contribution is proposed under State Plan under this scheme, small and medium sized agricultural processing units in co-operative sector such as rice mills, oil mills, cotton ginneries, groundnut complex coconut processing complex, fruits processing units etc. are proposed to be setup.

A Special Cadre Deputy Registrar is proposed to be appointed in the Maize Starch Factory in Karimnagar district for a period of 3 years during the Fifth Plan period at a cost of Rs. 40,000.

Out of the total storage requirements of 4.85 lakhs tonnes approximately, the storage capacity available in co-operative sector at the end of Fourth Plan will be 3.65 lakhs tonnes including the storage capacity available with co-operative rice mills and the deficit will be 1.20 lakhs tonnes. Out of the 1.20 lakhs tonnes deficit, it is proposed to take up construction of fresh godowns with a capacity of 80,000 tonnes during the Fifth Plan period availing the assistance of National Co-operative Development Corporation under the central sector scheme. The estimated cost of construction of 80,000 tonnes storage capacity is Rs. 120 lakhs at the rate of Rs. 150 per ton. Out of this, the State Government have to provide Rs. 45 lakhs subsidy under State Plan.

It is proposed to implement the scheme for creation of common cadres of key personnel of marketing societies during the Fifth Plan period. It is proposed to assist the Andhra Pradesh Co-operative Marketing Federation with a subsidy of Rs. 10 lakhs in the Fifth Plan period.

It is proposed to establish technical cells in District Co-operative Marketing Societies during the Fifth Plan period as in the case of Andhra Pradesh Co-operative Marketing Federation due to the increased promotional and servicing activity. The following staff is proposed for appointment in the technical cell.

1. Civil Engineer.
2. Mechanical Engineer.
3. Godowns Incharge.
4. Agronomist.
5. Market Supervisor.

The total cost estimated is Rs. 3.08 lakhs for the Fifth Plan period.

(g) *Co-operative Sugar Factories :*

18 Sugar Factories are proposed to be organised during the Fifth Plan period. The cost of each factory is estimated at Rs. 300 lakhs during Fifth Plan period and State Government have to provide Rs. 60 lakhs share capital to each of the Sugar Factories. In backward districts Government share capital contribution will be Rs. 80 lakhs in each factory. Out of the 18 factories proposed 9 factories will be organised in the backward districts. Thus Rs. 1,260 lakhs share capital contribution is required for the organisation of 18 new factories during Fifth Plan. This amount of Rs. 1,260 lakhs is proposed under Central Sector Scheme to be financed by N.C.D.C. outside State Plan ceiling. In case the N.C.D.C. does not finance this amount outside State Plan ceiling it is proposed to establish under the State Plan, 4 factories (2 factories in backward districts and 2 factories in other districts) with Government share capital contribution of Rs. 280 lakhs. In respect of 4 factories spill-over contribution of Rs. 250 lakhs is also proposed under State Plan.

The 18 Co-operative Sugar Factories proposed for organisation in Fifth Plan will be located in :

- Madanapalli or Punganur, (Chittoor District),
- Medak , Kamareddy (Nizamabad District),
- Narasampeta (Warangal District),
- Hindupur (Anantapur District),
- Buchireddypalem (Nellore District),
- Nandyal (Kurnool District),
- Darsi (Prakasam District)
- Huzurnagar or Kodad (Nalgonda District),
- Kottakota and Bimili (Visakhapatnam District),
- Burugupudi and D. Gannavaram East Godavari District),
- Vattigudipadu and Ibrahimpatnam (Krishna District),
- Khanapur and Mutnur (Adilabad District),
- Tenali (Guntur District.).

(h) Consumers' Co-operatives :

The following programmes will be taken up during Fifth Plan period for expansion and revitalisation of the Consumers' Stores structure.

- (i) 10 large sized retail units will be set up with Rs. 30,000 assistance for each unit at a total cost of Rs. 3 lakhs. for the Fifth Plan. These units will be set up by the existing Central Stores.
- (ii) The scheme for creation of common cadres will be implemented and a subsidy of Rs. 10 lakhs is proposed to be given to the consumers' federation for implementing the scheme.
- (iii) A consultancy cell will be created in the State Consumers Federation. A subsidy of Rs. 5 lakhs is proposed to be given to the Federation for this purpose.
- (iv) As cover against the possible loss in the operation of buffer stocking of agriculturally based consumer industries, agricultural commodities inventory losses fund will be created at the level of the State Consumers' Federation. The State Government is to contribute up to 2 per cent. of the total purchase made by the Federation. A provision of Rs. 3 lakhs is proposed for this scheme.
- (v) The existing central stores are proposed to be strengthened with additional share capital contribution to an extent of Rs. 13 lakhs, under State Plan Schemes.
- (vi) For running consumers industries the State Consumers Federation is proposed to be assisted with Rs. 10 lakhs share capital contribution.
- (vii) 56 Central Stores will be organised in all 56 towns which are having a population between 20,000 to 49,999. 9 Central Stores will be organised in all the 9 towns whose population exceeded 50,000. In all 65 Central Stores are proposed to be organised with an assistance of Rs. 3.10 lakhs for each store. The total provision required will be Rs. 201.50 lakhs. Of this an amount of Rs. 63,700 lakhs is proposed under State's Plan.
- (viii) 42 branches of central stores are proposed to be set up at district head-quarters for government hospitals and colleges for supplying their requirements. Rs.6,000 as assistance is proposed for each branch. The total provision proposed is Rs. 2.52 lakhs under State's Fifth Plan for this scheme.
- (ix) By the organisation of Central Stores in all the towns exceeding 20,000 population, there will be 3 to 4 Central stores in each of the districts. To look after the proper functioning of these stores there is need for departmental supervision by a Co-operative Sub-Registrar in each of the 21 districts. The annual cost of the Co-operative Sub-Registrars will be Rs. 2 lakhs. Thus a total cost of Rs. 10 lakhs is proposed to be provided in the Fifth Plan.

- (x) It is proposed to cover all the 187 taluks in the State with primary consumer stores by strengthening the existing and organising stores in Taluks which are not having stores. The total financial requirement under the scheme for Fifth Plan period works out to Rs. 255.64 lakhs. Out of this a provision of Rs. 50.27 lakhs is proposed under State's Fifth Plan.

(i) *Co-operative Training and Education :*

There are 4 training Centres at Hyderabad, Rajahmundry, Vijayawada and Anantapur for imparting training in the principles of Co-operation to 520 Institutional candidates and 80 freshers every year. In addition to these the Central Co-operative Institute at Hyderabad provides training to the Departmental staff. In all the 5 Institutes, 5 Deputy Registrar/Principals and 30 Co-operative Sub-Registrars/Lecturers are working. The cost of this staff is met by Government. A provision of Rs. 3.00 lakhs per year is proposed for continuance of the teaching staff during the Fifth Plan period (including subsidy of Rs. 30,000 per year to the Andhra Pradesh State Co-operative Union for running the Central Co-operative Institute). The non-official trainees are paid stipend at Rs. 40 per month during their training period and T. A. at Rs. 20 per month during practical training period. A provision of Rs. 1.72 lakhs per year is proposed for this purpose during the Fifth Plan period. The total cost of this works out to Rs. 23.60 lakhs in the Fifth Plan for training 30,000 candidates.

(j) *Administration :*

During the Fifth Plan period it is proposed to organise 1775 employment oriented co-operatives for weaker sections. About 60,000 persons are expected to be settled in gainfull employment. To supervise and guide these societies, one Deputy Registrar of Co-operative Societies for each district is proposed to be appointed. It is also proposed to give free services of Senior Inspector to assist these societies in maintenance of Accounts etc. The total cost of this staff proposed for weaker sections societies and Taluk-set up scheme is estimated at Rs. 52 lakhs for the Fifth Plan period. This provision has been made in the Fifth Plan.

12. COMMUNITY DEVELOPMENT AND PANCHAYATI RAJ.

The Community Development Programme was launched in the country on October 2, 1952 with a view to initiating a process of integrated development of the rural areas. It was felt that there should be an interegrated approach to solve the rural problems which were inter-related and could not be tackled in isolation. The know-how, credit and supplies had to be synchronised to produce fruitful results. This organisation aimed at conveying the message from the research stations and the laboratories to the cultivators' fields. It also aimed at arousing community consciousness among the rural people so that their energies could be generated for common good in an integrated manner. The extension service is in the nature of a common service centre where field workers of the development departments function as a team.

REVIEW :

The Panchayati Raj Institutions have been made fully responsible for the over all development of the rural areas. By the end of the Fourth Plan, all the 324 Blocks in the State would enter into the Post Stage-II. As such they are not eligible for any financial assistance. The State Government have been providing financial assistance to the Panchayati Raj Institutions for various developmental programmes and this assistance has increased from Rs. 13 Crores in 1960-61 to Rs. 66.69 crores 1972-73. But even this assistance has been found to be inadequate for the effective implmentation of the various programmes and for effective maintenance of the institutions transferred to the Panchayati Raj bodies. The Government have, therefore, appointed a High Power Committee under the Chairmanship of Sri C. Narasimham to make specific recommendations to improve their financial position, keeping in view their important role in the Fifth Plan period. This Committee has made several recommendations which are under the consideration of the Government.

PROGRAMME DETAILS :

An outlay of Rs. 13.25 crores is allotted for Community Development Programme in the Fifth Plan. The schemes proposed to be taken up with this outlay are indicated below :—

<i>Scheme</i>	<i>Outlay (Rs. in lakhs)</i>
(a) Community Development	1,050.75
(b) Applied Nutrition Programme	145.24
(c) Composite Programme for Women and Pre-school Children	27.26
(d) Panchayati Raj Journal	0.75
(e) Prize award to :	
(i) best Village Development Officers	2.00
(ii) best Panchayats	5.00

<i>Scheme</i>	<i>Out lay</i> (<i>Rs. in lakhs.</i>)
(f) Incentive grants to Mahila Mandals and Youth Clubs	8.00
(g) Financial assistance to Gram Panchayats ..	25.00
(h) Financial assistance to Panchayats to purchase carts	60.00
(e) others	1.00
Total	1,325.00

(a) *Community Development :*

By the end of Fourth Plan period, all the 324 Blocks in the State will enter Post-Stage II and as such are not eligible for any financial assistance from the Government under the Schematic Budget. The Government of India have on the recommendations of the Madras Conference agreed to provide each Block an assistance of Rs. 40,000. In the State's Fifth Plan an outlay of Rs. 10.51 crores has been made to enable the Panchayati Raj institutions to continue implementation of special programmes according to local requirements.

(b) *Applied Nutrition Programme :*

The salient features of the Applied Nutrition Programme are (i) supplemental feeding of pre-school children, and expectant and lactating mothers with nutritive and protective foods that are grown or produced locally with a view to correcting the deficiencies in their diet (ii) nutrition education through demonstration feeding, and (iii) developing production components of the programme, namely school gardens-kitchen gardens, and block gardens where cereals, pulses, vegetables and fruits are grown for supplying to the balwadies, block and village poultry units in villages and Block headquarters for producing eggs to feed pre-school children and expectant and lactating mothers and fisheries for breeding and supplying fish to children and women in the balwadies.

Of the three production components of Applied Nutrition Programme only one, namely, poultry can be said to have been a success. The school gardens, kitchen gardens and block gardens have not been quite successful. This is mainly due to operational and organisational defects and deficiencies, lack of system and inefficient financial management. The fisheries could not be developed to the extent required for the same reasons mentioned above. The result has been that the State Government has been forced to introduce balahar supplied free by CARE into the supplemental feeding of pre-school children. Apart from certain operational problems connected with CARE food like transportation and storage introduction of CARE food is a material deviation from the objectives and strategy of Applied Nutrition Programme as conceived and visualised in the Master Plan of Operation. In that an important objective like nutrition education has become a casualty and balwadis have virtually been reduced to mere feeding centres.

At the end of the Fourth Plan period Applied Nutrition Programme will be covering a total number of 75,000 beneficiaries consisting of pre-school children and lactating mothers in 78 select Blocks in the State.

A true National Nutrition Programme should take care of every child until it becomes a healthy, responsible and capable citizen. But it is common knowledge that the resources are limited. Hence, the National Nutrition Programme should embrace all children from among the weaker and vulnerable sections of the population in urban, rural and tribal areas progressively increasing the coverage from year to year. There should be a package of services, comprising supplemental feeding, medical care of child and mother, personal house-hold and social hygiene and immunization measures. An outlay of Rs. 145.24 lakhs has been made in the Plan for this purpose.

(c) *Composite Programme for Women and Pre-school Children :*

This programme is implemented in Non-Applied Nutrition Programme Blocks and its main objective is to develop nutrition education. This programme is proposed to be continued in the Fifth Plan as an integrated approach on nutrition. A provision of Rs. 27.26 lakhs is made in the plan.

(d) *Panchayati Raj Journal :*

The State Chamber of Panchayati Raj, publishes Panchayati Raj Journal in the regional language and supplies them to all Gram Panchayats and Panchayati Raj Institutions. The major portion of this journal is devoted to matters of interest to rural people in general and to Panchayati Raj Institutions in particular. During the Fourth Plan period an assistance of Rs. 15,000 per annum has been given to the State Chamber of Panchayati Raj for publishing the above journal. It is proposed to continue this subsidy during the Fifth Plan also. A provision of Rs. 0.75 lakhs is therefore proposed in the plan.

(e) *Prize award for best Panchayat and Village Development Officer :*

The performance of the Panchayati Raj bodies in the matter of agricultural production, loans, family planning, realisation of people's contribution, primary education, development of resources, sanitation efforts, are made in communications, rural water supply, electrification and for uplifting the weaker sections, women welfare and national savings deserves encouragement by providing incentives to tone-up the efficiency, progress and competition in the local bodies. The above scheme was implemented during the year 1962-63 and 1963-64. But on account of paucity of resources, this scheme could not be renewed during the subsequent years. It has now been proposed to revive this scheme. A provision of Rs. 5.00 lakhs is made for this scheme. Another scheme for providing prize awards to the Village Development Officers has also been included in the Plan. A provision of Rs. 2.00 lakhs is made.

(f) *Incentive Grants for Mahila Mandals & Youth Clubs :*

As per the recommendations of the Central Working Group on Community Development a scheme for giving incentive grants to Mahila Mandals has been included in the plan. A provision of Rs. 8.00 lakhs is made in the Plan.

(g) *Financial Assistance to Gram Panchayats :*

Under this scheme such of the Gram Panchayats which require financial assistance for executing works like construction of office buildings, formation of internal roads and approach roads, construction of drains, public latrines and improvements to remunerative enterprises like markets and carts and bus stands will be provided. A provision of Rs. 25.00 lakhs is made in the plan.

(h) *Financial Assistance to the Gram Panchayat to purchase Carts :*

To avoid the practice of the scavengers carrying night soil as head load and with a view to improving the working conditions of the sweepers and scavengers, a provision of Rs. 60 lakhs has been made in the plan. This amount will be made available by way of Grants-in-aid to the Gram Panchayats in a phased manner for purchasing push carts and wheel barrows.

13. IRRIGATION.

The Approach Paper on Irrigation prepared by the Planning Commission while embodying a substantial increase in the creation of Irrigation potential also contemplates irrigation projects continuing to subserve the national objective of generating direct employment in the construction phase and indirect employment thereafter through improvements in and stabilisation of the agricultural economy in general.

In the guidelines for the Fifth Five-Year Plan given by the Planning Commission emphasis was laid on the consolidation of Plan schemes initiated in the past and on accelerating progress on all continuing schemes. Emphasis was also to be laid on the efficiency of water use through lining of distribution system, controlled application of irrigation water and more efficient land use. In regard to new projects a proper mix of major and medium irrigation projects with priority for chronically drought affected, backward and tribal areas was contemplated. The utilisation of irrigation potential through appropriate measures of ayacut development was considered a priority item. In addition drainage, flood control and the research and organisational aspects were also to be attended to.

Andhra Pradesh is well endowed in regard to irrigation potential and its exploitation so far might also appear to be better than most of other States. However, it is often overlooked that the State has a wide variation in this regard and 150 lakhs of its population and 1.31 lakhs of sq. kms of its area are in chronically drought affected areas. Inter-State comparisons are therefore, likely to be misleading if this peculiar feature is not taken into account. Because of the State being predominantly agriculture oriented and because of large parts of it being drought affected, backward or tribal, priority has still to be given to Irrigation with special emphasis on removal of requisite disparities in this regard.

Priority has necessarily to continue to be given to the completion of spillover irrigation projects. In addition selection of medium irrigation projects particularly in chronically drought affected and backward areas, initiation of measures for controlled water management, systematic groundwater survey and finally emphasis on ayacut development, are some of the more important measures that would have to be given priority.

REVIEW

The total expenditure on the Irrigation sector during the period 1950-71 amounted to Rs. 336.26 crores accounting for 32.56% of the expenditure in the State Plans. In the Fourth Five-Year Plan the outlay anticipated was Rs. 132.88 crores on major and medium irrigation and Rs. 25.67 crores under minor irrigation in a total outlay of Rs. 530 crores. However, due to financial stringency and reduced Plan outlay the actual expenditure is expected to be only Rs. 98.18 crores under major and medium irrigation and Rs. 19.70 crores under

minor irrigation. Correspondingly the actual achievement is likely to be 5.49 lakh acres under major and medium irrigation and 4.31 lakhs acres under minor irrigation making a total of 9.80 lakh acres. The position regarding major and medium irrigation is shown in Annexure-I.

The spill-over commitment of the Fourth Plan projects for the major and medium irrigation sector is itself anticipated to be Rs. 158 crores and for minor irrigation (PWD) about Rs. 4 crores. Hence the emphasis during the Fifth Plan will have to continue to be on spillover commitments.

TOTAL DIMENSIONS :

It has been estimated by the Irrigation Commission (Vol.-III p. 7 of the report) that the ultimate irrigation potential of the State is 103 lakh hectares or 260 lakh acres including 65 lakh hectares under major and medium irrigation projects, 20 lakh hectares under minor irrigation and 18 lakh hectares under groundwater. The area brought under irrigation by the end of the Fourth Plan would be about 34 lakh hectares or 33% of the ultimate potential. Even if the proposals now formulated for the Fifth Plan are gone through the potential exploited will be only 43 lakh hectares leaving about 58% still unexploited.

OBJECTIVES:

The objectives of the programme under Irrigation may be summarised as follows :—

- (a) to ensure maximum utilisation of irrigation potential already created ;
- (b) completion of major spillover projects, such as Nagarjunasagar, Pochampad, Tungabhadra High Level Canal and Vamsadhara during the plan period ;
- (c) completion of spillover medium projects within the Plan ;
- (d) to take up a few medium projects in chronically drought affected and backward areas with a view to correcting regional imbalances;
- (e) to give increased emphasis to problems of modernisation improvements to the existing irrigation projects as well as lining of canals and drainage problems;
- (f) as discussed earlier in the minor irrigation sector the objectives are -
 - (i) a scientific well-sinking programme based on adequate ground water data in order to provide supplemental irrigation in respect of areas already irrigated and particularly for the provision of irrigation facilities in scarcity areas ;
 - (ii) provision of minor irrigation facilities in the upland taluks of coastal Andhra and drought affected taluks of Rayalaseema and Telangana;

- (iii) introduction of new techniques such as sprinkler/drip irrigation, construction of seepage tanks, measures to raise water levels, etc., particularly in the drought affected areas.

STRATEGY:

In evolving a strategy the need to take an integrated view of the problem of irrigation has to be recognised. Major, medium and minor irrigation have to be considered; surface irrigation and groundwater have to be integrated and finally the uses of water for irrigation industries and drinking have to be coordinated.

The programme for minor irrigation has necessarily to be coordinated with the programme for major and medium irrigation with a view to remove regional imbalances. More minor irrigation works are proposed to be taken up accordingly in areas where there is no scope for taking up major and medium irrigation projects during the Fifth Plan period or in areas which are not covered by major and medium irrigation projects now under execution. Special attention will have to be given to hilly areas e.g., agency areas, in which lift irrigation may be the only possible means to bringing land under cultivation. In urban areas and in areas with special problems water requirements for industries and for drinking purposes have to be coordinated with surface irrigation projects. It will also be necessary to provide for taking up of a sufficient number of new works in order to ensure continuity into the Sixth Plan. Keeping all these aspects in view the detailed programme of works to be taken up during the Fifth Plan period has been worked out.

PROGRAMMEE DETAILS :

Spillover :

Completion of schemes on hand, which in fact, are continuing since Second and Third Plans is treated as a first charge on irrigation plan.

The following spillover works costing Rs. 158.67 crores are proposed to be completed in Fifth Plan.

(Rupees in Crores.)

project.	Revised cost.	Expenditure.	
		Expenditure to end of Fourth Plan.	Spillover into Fifth Plan.
1. Nagarjunasagar ..	253.40	191.50	61.90
Add for maintenance during Fifth Plan ..			2.30
2. Pochampad ..	120.00	58.00	62.00
Add for maintenance during Fifth Plan ..			2.00
3. Vamsadhara ..	10.40	3.03	7.37
4. Tungabhadra Low Level Canal, High Levels Canal Stage I & II ..	21.64	10.20	10.73
Add amount available under drought relief and D.P.A.P. ..	..	0.71	..
5. (i) Other Spill-over Medium schemes ..	22.59	9.80	12.37
(ii) Allotment under drought ..	..	0.42	..
Total ..	428.03	273.66	158.67

New Schemes :

The following new schemes are proposed having due regard to limitation of resources and keeping in mind the necessity to improve some existing schemes for better control over water distribution as well as maintaining continuity of development activities and creation of adequate additional potential particularly in backward areas during the Fifth Plan period with a reasonable spillover into the Sixth Plan.

(Rs. in Crores.)

Scheme.	Outlay in Fifth Plan.
1. Improvements to Godavari Delta ..	12.00
2. Somasila Project ..	6.00

(Rs. in crores)

Scheme	Outlay in Fifth Plan
3. Medium schemes which can be completed during Fifth Plan in Coastal Andhra	4.00
4. Remodelling and lining of canals in Krishna Delta	1.00
5. Medium schemes which can be completed during Fifth Plan in Rayalaseema	3.68
6. Seepage and drainage problems in Kurnool Cuddapha Canal, Tungabhadra Low Level and High level Canals etc.	1.50
7. New scheme in Manjira basin	3.00
8. Singoor Project	4.00
9. Medium schemes which can be completed during Fifth Plan in Telangana	2.00
Total	37.18

Advance action for Fifth Plan:

Apart from the above projects it is proposed to start work on some important projects during the closing years of the Fifth Plan so that they could be taken up and completed during the Sixth Plan period.

<i>Scheme</i>	<i>(Outlay Rs. in Crores)</i>
1. Polavaram Barrage	0.30
2. Vamsadhara-II Stage	0.50
3. Medium schemes in Coastal Andhra	0.30
4. Medium schemes in Rayalaseema	0.30
5. Pochampad II Stage.	0.20
6. Peddavagu Project	0.20
7. Medium schemes in Telangana	0.35
Total	2.15

Potential to be created :

By completion of the spillover medium and major projects as mentioned above, and also the new projects proposed, the following additional potential is expected to be created during the Fifth Plan:—

<i>Project</i>	<i>Potential</i> <i>(Lakh Acres)</i>
<i>Spill-over</i>	
Nagarjunasagar	10.34
Pochampad	5.30
Vamsadhara	1.48
T. B. H. L. C. Stage-II	0.60
Other Medium Schemes	1.83
<i>New Schemes.</i>	
Medium schemes to be completed (tentative)	1.57
Total	21.12

Investigation :

During the Fourth Plan there is already a scheme of Central assistance for investigation of major and medium projects. It is anticipated that this would continue during the Fifth Plan and the provision may be fixed at Rs. 20 lakhs per year totalling to Rs. 1.00 crore for the entire Plan period.

Research :

As far as engineering research is concerned there can be no doubt that special importance will have to be given to this particularly as there has been rapid development of modern techniques in design and construction. There is also need to undertake intensive research on problems of storage and transmission losses, optimisation of water use, quality control, operation research etc. A provision of Rs. 1.00 crore for the Plan period at Rs. 2000 lakhs per year is accordingly suggested.

Drainage and Flood Control :

Drainage problems, particularly in Krishna—Godavari Delta has assumed very serious proportions in recent year. The Mitra Committee estimated the annual loss on account of recurring floods in the Krishna-Godavari Delta at Rs. 8.00 crores. An ambitious Programme for improvement of drains in the Krishna-Godavari

Delta has been taken up during the Fourth Plan period. The programme was originally contemplated to be financed by collection of drainage cess from the beneficiaries. The total amount drainage cess realisable is now estimated to be around Rs. 20.00 crores. However, the total cost of the drainage schemes in Krishna-Godavari Delta which was originally estimated to cost Rs. 28.00 crores has now gone up to Rs. 70.00 crores. Expenditure on the programme that has been incurred upto 31st March 1973 comes to almost Rs. 15.00 crores. Cess collections so far amount to Rs. 9.00 crores. It can be seen that even if the balance realisable amount of Rs. 11.00 crores is collected and spent on works during the Fifth Plan period by 1974-75 there will be a balance of as much as Rs. 44.00 crores worth of work to be done. It is obviously necessary for the State and Central Governments to provide a substantial contribution towards the cost of the completion of these schemes. In fact the Ministers' Committee on Drainage and Flood Control has suggested that the cost of drainage and Flood Control should be borne 1/3 each by the beneficiaries, State and Central Governments. However, in the absence of adequate funds in the irrigation sector of Plan no provision has been suggested for this during the Fifth Plan. This will have to be further reviewed if adequate Central assistance is forthcoming. Similarly, there are certain areas of the State which are subject to annual floods. While there is every necessity to make some provision for flood control as well as installation of flood warning systems, it is again found that the funds position does not permit any specific allotment for this purpose for the present. However the whole question requires detailed examination.

Summing up :

The proposals of the Working Group for major and medium irrigation sector of Fifth Plan involve a total expenditure of Rs. 200.00 crores as shown below :

<i>Scheme</i>	<i>Outlay in Fifth Plan (Rs. in crores)</i>
1. Spillover schemes	158.67
2. New Schemes to be completed in the Plan period.	37.18
3. New Schemes to be started during the Fifth Plan to spillover into the Sixth Plan.	2.15
4. Investigation of major and medium projects.	1.00
5. Engineering Research	1.00
Total	200.00

It may be mentioned here that in Minor Irrigation sector (as discussed earlier) an allocation of Rs. 43.50 crores was proposed as shown below :—

S. No.	Schemes.	Amount (Rs. in crores)	Ayacut (in lakh acres).
1.	Minor Irrigation —P.W.D. ..	22.00	1.72
2.	Minor Irrigation—Panchayati Raj Department.	4.00	1.00 (Stabilisa- tion).
<i>Ground Water</i>			
3.	Ground Water Department ..	5.00	} 62,500 Sq. K.Ms. of Survey.
4.	Registrar of Co-operative Socie- ties.	12.50	3.00
Total ..		43.50	

CO-ORDINATION ;

Appropriate co-ordination between the departments of Agriculture, Animal Husbandry, Co-operation and Irrigation for purpose of Ayacut Development is extremely important. The existing arrangements for the purposes of co-ordination will have to be analysed and where necessary strengthened apart from ensuring adequate finances for ayacut development. Further, the role of institutional and semi-autonomous bodies, particularly, the L.M.Bs. is appreciated, both in the context of ground water development and financing ayacut development. Greater co-ordination particularly, at the field level is to be ensured through requisite administrative measures. In addition, the possibility of the Commercial Banks entering a programme of Irrigation development in a big way is to be explored. For this purpose, a more meaningful effort is suggested at the time of the formulation of District Plans.

SPECIAL FEATURES :

Social Justice :

The two important problems that have to be kept in view are the problem of regional imbalances and the uplift of weaker sections. In taking up the minor irrigation programmes, every effort is made to ensure that these are taken up in areas which do not benefit under Major and Medium Irrigation Programmes. Secondly, the Ground Water Department will have to keep in view the twin objectives of quick exploitation in the resource regions and controlled

but optimum exploitation in drought affected areas. While irrigation sector alone cannot provide an answer for regional imbalances, it is proposed to introduce an element of dispersal of irrigation facilities, as an insurance against famine and as an infra-structure for development of backward areas, through appropriate mixture of major, medium irrigation, surface minor irrigation and ground water development over the different areas. In regard to the uplift of weaker sections, it is proposed that (a) In localising the Ayacut under the various projects where there is a choice, the small farmers would be given priority (b) In structuring the projects, labour intensive techniques will be adopted.

Man Power :

It is expected that substantial employment would be created as a result of the works programme involved in providing surface irrigation facilities. For surface irrigation facilities alone, the employment to be generated during the Fifth Plan is estimated as follows :

Technical .. .. .	..	..	..	10.6 lakh Mandays.
Non-technical, administrative	..	..	..	4.01 lakh Mandays.
Skilled labour .. .. .	..	..	..	46.84 lakh Mandays.
Non-skilled labour .. .. .	..	..	..	403.76 lakh Mandays.

In addition, about 24 lakh acres are expected to be brought under irrigation involving a more intensive employment to the tune of 720 lakh mandays.

Similarly, by a provision of 75,000 wells involving creation of additional irrigation facilities for about 3 lakh acres additional employment during construction and indirect employment later are anticipated.

CENTRAL SECTOR SCHEMES :

There is a centrally aided scheme which provides employment to unemployed technical persons for investigation of major and medium projects. Similarly, there is a programme for investigation of minor irrigation schemes under Rural Engineering Survey. It is hoped that these would be continued in the Fifth Plan since additional employment likely to be generated cannot cover all the technically qualified persons that would be available during the Fifth Plan. Further, it was indicated in the approach paper of the Planning Commission dealing with the irrigation sector that Central Government would finance the taking up of medium irrigation projects in districts covered by Drought Prone Areas Programme, Small and Marginal Farmers Development Agency areas. It is not clear whether the assistance for these schemes would form part of the Central Assistance to the State Plans. Similarly, there is the Central Drought Prone Areas Programme, contemplated for the Fifth Plan which may cover the Minor Irrigation Programmes. Since, as already indicated, there are a large number of Medium and Minor Irrigation Projects indentified and ready for execution, but are not proposed in this Plan for the simple reason of lack of financial resources, it would be possible to step up

the programme and take up these Central Sector schemes on obtainin a more definite indication of the assistance that is likely to be available. Lastly, the approach paper of the Planning Commission envisages Central assistance for Drainage and Flood Control schemes. As explained earlier, there are several important projects, but none of them have been included in the Plan in anticipation of a definite indication regarding the Central Assistance for drainage and flood control schemes.

However, in regard to irrigation projects in DPAP/MFAL/S.F.D.A. districts and investigation ,the requirements could be indicated.

The districts covered by D. P. A. P.,/M. F. A. L. & S. F. D. A.,are Srikakulam, Visakhapatnam, Ongole, Kurnool, Cuddapah, Chittoor, Anantapur, Mahabubnagar and Nalgonda districts. The following are the Medium Irrigation Projects which can be taken up if Central Assistance is approved under the scheme:

District.	No. of schemes.	Cost. (Rs. in lakhs.)	Ayacut (lakh acres)
Srikakulam	7	1,283.74	0.03 Existing. 2.44 New
Visakhapatnam	5	698.51	0.25 Existing 0.23 New
Cuddapah	2	181.01	0.24 Existing 0.11 New
Chittoor	2	66.30	0.03 Existing 0.02 New
Kurnool	2	536.00	0.50 Existing 0.15 New
Anantapur	1	30.00	0.02 Existing 0.06 New
Total :	19	2,795.56	0.87 Existing 3.01 New

The details are given in Annexure II. Some of the other medium irrigation schemes which can be taken up and completed in Fifth Plan provided funds are also given are shown in Annexure III.

In regard to investigation there are two Investigation circles with head quarters at Guntur and Hyderabad with field staff spread over almost all the districts of the State engaged at present in the

Investigation of Major and Medium Irrigation Schemes. The Government of India have given assistance in the shape of loan from 1969-70 to 1971-72 and grant from 1972-73 in order to intensify the programme of Investigation and to create increased employment opportunities for engineering personnel. The Central assistance approved for 1972-73 is Rs. 47 lakhs and it is hoped that the assistance for 1973-74 also will be at the same level.

The existing investigation staff is not adequate and are not well equipped. Hence, the existing organisation has to be strengthened with additional staff and equipment. It is hoped that the Central assistance @ Rs. 40/- lakhs per year will be forthcoming during the Fifth Plan for the purpose over and above the provisions proposed in the State Sector.

ANNEXURE—I.

Major and Medium Irrigation Schemes—Expenditure and Potential

S. No.	Project.	Estimated cost.	Expenditure upto the beginning of Fourth Plan.	Expenditure during Fourth Plan.	Balance of expenditure spillover to Fifth Plan.	Potential created at the beginning of Fourth Plan.	Potential created during Fourth Plan.	Balance of potential to be created.
(1)	(2)	(Rs. in lakhs)	(Rs. in lakhs)	(Rs. in lakhs)	(Rs. in lakhs)	(in acres)	(in acres)	(in acres)
MAJOR IRRIGATION SCHEMES.								
1.	Nagarjunasagar Project ..	25,574	14,668.00	4,456.00	6,450	7,50,000	2,70,000	10,34,000
2.	Pochampad Project ..	12,000	1,139.00	3000.00	6,400	Nil	1,30,000	5,30,000
3.	Kaddam Project ..	798.36 +38.00	773.09	49.39	Nil	58,560	Nil	6,020
4.	T. B. P. H. L. C. Stage-II ..	2,164		88.93 (AP) 130.02 (Board)	666.91 205.14	1,073	Nil	62,960	60,000
			<u>218.95</u>	<u>872.05</u>				
5.	Vamsadhara Project ..	877.64 1040	Nil	303.00	737	..	..	1,48,228
MEDIUM IRRIGATION SCHEMES.								
6.	Vottigedda Project ..	77.20 230	86.34	103.66	40	Nil	12,000	4,670
7.	Varaha Reservoir ..	111.90	81.07	36.09	Nil	Nil	8,060	Nil
8.	Thandava Reservoir ..	199.4 5150	155.52	149.38	210	Nil	Nil	45,900
			<u>497.14</u>	<u>397.02</u>	Nil	Nil	12,000	Nil

		420.	111.60	71.40	237	Nil	1,900	15,660
12. Gandipalem Project	..	148.63	Nil	13.63	135.00	Nil	Nil	10,000
13. Cazuladinne Project	..	<u>254</u>						
		219.70	Nil	103	216.70	Nil	Nil	35,000
14. Pulivendula Project	..	<u>298.00</u>						
		342.70	Nil	69.00	273.70	Nil	Nil	60,000
15. Bahuda Reservoir	..	46.00	20.94	35.19	Nil	Nil	2,800	Nil
16. Ukachettivagu Project	..	<u>95.20</u>						
		130.00	Nil	89.70	40.30	Nil	..	Nil
17. Swarna Project	..	<u>47.93</u>						
		152.94	54.31	68.29	30.00	Nil	3,530	5,600
18. Nallavagu Project.	..	74.20	62.32	11.45	Nil	4,900	..	Nil
19. Kotipallivagu Project	..	105.00	67.26	32.24	Nil	830	9,150	Nil
20. Lankasagar Project	..	80.15	53.18	19.64	Nil	2,040	3,060	Nil
ADD for other completed projects.	..	..	..	..	54.30	..	..	..
Ayacut for other completed projects.	..	..	..	..	..	..	6,560	..
					158.670	8,16,330	5,49,020	19,55,078

ANNEXURE—II

List of Medium Irrigation Schemes in the districts covered by Drought Prone Areas Programme/Small and Marginal Farmers Development Agency (under investigation)

District/Scheme	Cost (Rs. in lakhs)	Ayacut (Acres)
(1)	(2)	(3)
SRIKAKULAM DISTRICT		
1. Reservoir across Gomukhi and Swarnamukhi ..	202.48	49,000
2. Thotapalli Reservoir across Nagavali ..	482.00	1,18,000
3. Jangavathi anicut ..	57.71	19,000
4. Vonigedda Reservoir near Sirpuram ..	58.36	13,000
5. Sakigedda Reservoir ..	95.77	3,970
6. Reservoir across Swarnamukhi near Madduvalasa ..	355.00	39,000
7. Koruswada Reservoir across Mahendrantanaya river ..	32.42	3,000 (Existing)
		2,150
	1,283.74	2,47,120 New
		3,000 Existing
VISAKHAPATNAM DISTRICT		
1. Reservoir across Champavathi near Andra (v) ..	46.47	8,746 (Existing)
		854
2. Reservoir across Champavathi near Kudipi (v) ..	257.05	6,709 (Existing)
		4,234
3. Raiwada Reservoir Scheme ..	112.88	1,378 (Existing)
		4,300
4. Reservoir across Indesammavanka ..	216.44	7,500
5. Koram Reservoir ..	66.17	8,500 (Existing)
		6,400
	698.51	25,333 (Existing)
		23,288 (New)

(1)	(2)	(3)
CUDDAPAH DISTRICT		
1. Cheyyeru Project ..	139.10	2,500 (Existing) 10,200
2. Kaletivagu Project ..	41.91	1,200 I Crop 1,200 II Crop all wet.
	181.01	3,700 (Existing) 11,400 (New)
CHITTOOR DISTRICT		
1. Annapalli Reservoir Scheme ..	40.04	2,000 (Existing)
2. Thantipendal Reservoir Scheme (Siddeswaram Project) ..	26.26	2,080 (Existing) 2,120
	66.30	4,080 (Existing) 2,120 (New)
KURNOOL DISTRICT		
1. Varadarajaswamy Project ..	206.00	14,700
2. Balancing reservoir for K.C. Canal ..	330.00	50,000 (Existing)
	536.00	14,700 New
		50,000 (Existing)
ANANTAPUR DISTRICT		
1. Maddileru Project near Dorigellu in Kadiri taluk ..	30.00	1,940 (Existing) 6,000 (New)
	30.00	1,940 (Existing) 6,000 (New)

ANNEXURE - III
Medium Irrigation Schemes in other Districts under Investigation.

District/Scheme	Cost (Rs. lakhs)	Ayacut (Acres)
(1)	(2)	(3)
ADILABAD DISTRICT		
1. Suddavagu Project ..	35.80	3,400
2. Satnala Project ..	145.92	6,700
3. Reservoir across Vattivagu ..	52.67	5,500
4. Reservoir across Yepalavagu near Yepallegudem (v) ..	47.72	3,050
5. Reservoir across branch of Peddavagu near Dasnapur ..	111.13	9,000
6. Reservoir on Peddavagu near Karzi (v) ..	55.63	8,000
	448.87	35,650
NIZAMABAD DISTRICT		
1. Upper Kaulavala Project ..	90.00	45,000
KARIMNAGAR DISTRICT		
1. Reservoir across Boggulavagu ..	57.02	3,100
2. Gandhamchekavagu Project ..	80.80	3,000
	137.82	6,100
WARANGAL DISTRICT		
1. Reservoir across Munnervagu near Vungode (v) ..	84.04	10,000
2. Reservoir across Mallovuvagu ..	60.90	4,800
3. Karlapathivagu Project ..	70.94	4,600
	215.88	19,400 (Existing)
KHAMMAM DISTRICT		
1. Peddavagu Project near Gummala- palli (v) ..	106.00	10,050
2. Taliperu Reservoir Scheme ..	247.87	18,500
3. Reservoir across Gundlavagu ..	65.71	2,000
4. Reservoir across local stream near Veerabhadrapuram (v) ..	33.08	1,500
5. Reservoir across Mondikuntavagu near Krishnapuram (v) ..	100.91	8,000
6. Reservoir across Paleruvagu ..	90.40	3,000
7. Reservoir across Akhru near Mulaka- palli (v) ..	137.38	3,900
8. Reservoir across Munneru near Mulkanur ..	177.38	15,000
	967.73	61,950
MEDAK DISTRICT		
1. Haldi Project ..	69.70	2,900

14. POWER.

Power is an essential item of infrastructure necessary for growth in both the industrial and agricultural sectors of the economy. Andhra Pradesh occupied the 18th place among the States in the country in the per capita consumption of power which was 43 KWH compared to the All-India level of 77.88 KWH, or about 55% of the All-India level, in 1968-69. Even among the States in Southern Region, the per capita consumption of power is lowest in Andhra Pradesh. This was the position at the beginning of Fourth Plan and the same position continued during the Fourth Plan period without improvement. The pace of power development in the State has therefore to be so accelerated that the State attains, at least, the national average level in the next decade.

In the guidelines for the preparation of power programmes, given by the Planning Commission the short fall in installed generation capacity is mainly attributed to unrealistic schedules and delays in supply of plant and equipment. In the case of Andhra Pradesh, however, the more important constraint was financial. In regard to the preparation of Fifth Five-Year Plan, the Planning Commission have indicated that the choice of new power generation schemes should be made from the techno-economic angle and that quick yielding new schemes should be preferred. While taking the advance action required for launching the Sixth Plan Schemes, the need for careful planning of the transmission and distribution lines so that the line losses are minimised has been impressed as also the importance of high priority to rural electrification both for agricultural production and as an item in the Minimum Needs Programme.

REVIEW :

The total investments in power sector in plans during the period 1950-1970 is estimated at Rs. 339.76 crores being 32.86% of total State Plan Investments. The consumption of power increased from 98.2 M. KWH to 2,186.2 M. KWH while the number of villages and towns electrified increased from 177 to 8,301 during the corresponding period. The power sector outlay for Fourth Plan was fixed at Rs. 197 crores out of State's plan outlay of Rs. 530 crores (*i. e.*) 37%. In the mid-term revision, the outlay for power sector was raised to Rs. 201 crores in view of inevitable spill-over commitments although the State's Plan outlay was reduced to Rs. 486 crores. The power sector outlay thus formed 41% of the State's plan outlay. The allocation for the power sector, large as it may seem in comparison to the total available resources, however fell far short of the needs. Therefore only a modest generation programme could be chalked out for the Fourth Plan which envisaged increase of the generating capacity by 382.5 MW only over a period of five years from 615 M.W. at the beginning of Fourth Plan. This works out to a growth rate of hardly 10%. In an under-developed State with a small base this annual growth rate of 10% was very meagre specially considering the fact that the

energy consumption in the State grow at a rate of 15.9% in the five year period, 1965-66 to 1970-71. It was therefore feared even at the time of formulation of Fourth Plan that, the State would be heading for a big power deficit which may be of the order of 30 to 35%. However the minimum requirements of the other sectors of development did not permit a larger allocation in the Fourth Plan for the power sector with the result that power shortage has once again become a real problem. The physical targets envisaged for the original Fourth Plan, Mid-term revision and likely achievements are as follows:—

<i>Item</i>	<i>Original Fourth Plan.</i>	<i>Mid-term revision.</i>	<i>Likely achievements.</i>
(1)	(2)	(3)	(4)
Additions to installed capacity (MW) ..	382.5	282.5	282.5
Energy sold (Million KWH)	3,100	3,000	2,550
Village electrified additional (Nos.) ..	5,283	5,243	5,187
Pumpsets energised additional (Nos.) ..	1,51,833	1,36,833	1,32,037

A critical review of the performance in the power sector throws up a few important points for consideration. The additions to installed capacity fell short of original anticipations primarily due to paucity of resources. This resulted in shortages of generating capacity, import of power for a period, and a substantial unfulfilled power demand. Naturally the energy sold fell short of original expectations. While the short fall in villages electrified and pumpsets energised was not considerable, the shortages in power had their effect in terms of short supplies of power and undependability of supply. Thus, by end of 1972-73 only additional generation of 62.5 MW was achieved through Ramagundam Thermal Scheme 'B' Station. The Kothagudem Thermal Station is expected to be commissioned in July 1973 when the first 110 MW unit goes into operation. The second set will be commissioned in a few months thereafter.

The State is, therefore, now facing a very difficult power position. Though the State commenced the Fourth Plan with a comfortable power surplus, the load demands increased at a very rapid rate and the

surplus power was used up in a short period of two years. The power position during the Fourth Plan is indicated in the Statement below :—

Year	Installed Capacity (MW)	Peak demand (MW)	Required Capacity at 1.4 times peak demand (MW)	Surplus (+) Deficit (—) (MW)
(1)	(2)	(3)	(4)	(5)
1967-68	634	356	498	(+) 136
1968-69	613	440	616	(—) 1
FOURTH PLAN :				
1969-70	610	525	735	(—) 125
1970-71	605	562	787	(—) 182
1971-72	668	640	896	(—) 228
1972-73	668	733	1,026	(—) 358
1973-74	888	884	1,238	(—) 350

Thus within a span of 4 years the load demand went up from 356 MW to 640 MW (an annual compound growth rate of 15%) whereas the installed capacity almost remained stagnant. During 1970-71 and 1971-72 the power deficits were met by importing power but subsequently this was not possible since there were shortages in neighbouring States also. The failure of monsoon in Andhra Pradesh has further worsened the crisis. The losses due to power cut in terms of production, lay offs, industrial unrest, loss of revenue to Government would be enormous apart from an estimated loss of Rs. 2 crores to the Electricity Board. In 1973-74, due to the commissioning of Kothagudem Stage III, 220 MW capacity will be added to the grid. But the power demand and energy requirements would also go up and it appears about 25% cut may have to be continued in 1973-74. The energy shortage for industries during 1972-73 and 1973-74 may be roughly assessed at 200 to 250 million units each year.

While the failure of the monsoon and the consequent shortfall in hydro-generation has to some extent resulted in the present shortage, the important reason is the delay caused in completion of the schemes taken up in the Third Plan mainly due to paucity of funds. Lower Sileru and Srisailem Projects were taken up during the Third Plan and yet to be completed. Unless these are expedited at least now the position will become even more acute.

The sale of energy increased from 1,638 Million KWH in 1968-69 to 2,186 Million KWH in 1970-71. The rate of increase in sales dropped down in 1971-72 due to the power shortage in the State and it was possible to achieve a sale figure of 2,330 Million KWH in 1971-72. A power cut averaging to 37.5% is now in force in the State. In view of this cut, the sale anticipated in 1972-73 is only 2,200 Million KWH against a consumption potential of 2576 million KWH and in 1973-74 the sale would be 2,550 Million KWH against a consumption potential of 2,953 Million KWH.

The rural electrification programme was implemented fairly well, the number of villages electrified during the Fourth Plan being 4,926 against 5,757 villages electrified at the beginning of the Plan. Thus the total number of towns and villages electrified will be 10,683 at the end of the Fourth Plan. The number of pumpsets energised increased from 1,23,167 in March, 1969 to 2,12,204 by March, 1972. The number of pumpsets increased by 72%. The sale in the agricultural sector however increased only by 48% from 331 Million KWH in 1968-69 to 489 Million KWH in 1971-72.

PERSPECTIVE :

For purposes of projecting long term power demand it is usual to adopt a percentage growth rate based on previous experience and the growth rates observed in other States with different levels of development. It is but natural that as the base increases, the percentage growth comes down. Based on the growth rate in Fourth Plan which is 15% per annum, a 13% growth is assumed for Fifth Plan, 10% for Sixth plan and beyond. Based on the above assumptions, the following will be the levels of maximum demand upto 1988-89 :—

Year	.. 1973-74	1978-79	1983-84	1988-89
Maximum demand (MW)	884	1,640	2,640	4,250

To meet a demand of 4250 MW, a capacity of 5.5 to 6 million KW. will have to be built up in the next fifteen years or so. The short term plans should devetail into this long term objective. It will be possible to build up the required capacity by 1988-89 by programming 2 million KW. by hydro-generation on completion of the projects already on hand and their extensions and about 3.5 to 4 million KW in 3 or 4 super thermal stations and a nuclear station. The thermal stations can come up near the coal fields, viz., Kothagudem and Ramagundam and at a suitable load centre like Vijayawada for balanced development. Besides, considering the large gestation period of nuclear stations, a nuclear station also must be taken up in the Fifth Plan so that benefits are available in the middle or the end of the Sixth Plan period.

OBJECTIVES :

The objectives of power sector may briefly be summarised as follows :

(a) Sufficient generating capacity should be available to meet the power demand and energy requirements of the loads in the Fifth plan period.

(b) The transmission and distribution arrangements should be sufficient to ensure that reliable and dependable electric supply is made available to consumers. The energy losses in transmission and distribution system should be brought down to reasonable limits.

(c) Rural electrification with priority for backward, tribal and drought affected areas; ensuring coverage of Harijan colonies in villages.

PROGRAMME DETAILS :

Generation :

By the end of Fourth Plan the installed capacity will be 888 MW 268 MW Hydro and 620 MW Thermal and gas. After retirement of obsolete thermal and gas sets the capacity will be 858 MW. According to the estimates of the Seventh annual electric power survey report, the peak load demand in the State in 1973-74 is expected to be 884 MW. During the Fourth Plan period, the load demand is increasing from 442 MW. to 884 MW., i.e., a growth rate of 15% per annum. However, as explained in the perspective a rate of 13% may be reasonable for the future sustained growth. At this rate of 13% annual compound growth rate, the peak demand by 1978-79 will be 1640 MW. It is also possible to visualise the generation of power from the side of actual demand projections. During the Fifth Plan period the prospects of establishing major and medium industries in the State are very bright. The major industries expected are steel plant at Visakhapatnam, zinc smelter plant at Fertilizer Factory at Ramagundam, International ore and Fertilizer factory at Visakhapatnam. Naval Wharf at Visakhapatnam, Cable factory at Hyderabad, expansion of Andhra Sugars at Kovvur, Cement factories etc. Establishment of medium industries such as tyres factory at Hyderabad, Electrides manufacture at Vizag etc., and many other agro industries are also envisaged. Also more industries are expected to be established in Andhra Pradesh in view of its industrial backwardness and as the present policy is to favour setting up of industries in the backward areas of the country. In 1978-79, the last year of Fifth Plan, HT and LT industries are expected to consume more than 3000 million units. Special consumers are expected to account for more than 1000 million units by 1978-79. These are Zinc Smelter Visakhapatnam 175 (million units) Steel Plant, Visakhapatnam (125) Fertiliser Factory, Ramagundam (355) Railway Electrification, Vijayawada-Madras and D. B. K.—Vizag (250) Ferro Silicon (Hyderabad) (70) and special Tools Hyderabad (55). In view of the industrial development anticipated and the agricultural services envisaged for Fifth Plan the sale of 5600 million units in 1978-79 seems reasonable involving an assumed load demand of 1640 MW. by 1978-79. To meet this demand, the installed capacity of the system has to be of the order of 2300 MW. at 1.4 times the peak demand. This means that about 1350 M.W. of additional generating capacity has to be added to the system during the Fifth Plan period. Statement-A indicates the programme of adding generation capacity during the Fifth Plan to match the peak load demand. If this programme can be achieved, there will be small surplus at the end of Fifth Plan, which will be useful during adverse hydro conditions consequent to failure of monsoons.

In regard to interse priorities among generation schemes continuing generation schemes should be given top priority so that the benefits are realised from these schemes quickly. There are two major continuing schemes namely, Lower Sileru and Srisaïlam Hydro Electric Schemes. The funds required for these two schemes should receive top priority in the scheme-wise outlays of Fifth Plan. According to the latest assessment 400 MW. installed capacity can be added at Lower Sileru and three 110 MW. units can be commissioned at Srisaïlam out of 4 units of the project during the Fifth Plan.

The next priority has to be given for completion of schemes on which advance action is proposed in the Fourth plan with a view to get their benefits in a phased manner during the Fifth Plan so that the power position improves from year to year in the Fifth Plan and the schemes are completed within the Fifth Plan. The following four schemes viz. Kothagudem Stage IV (2 × 110 MW.) Vijayawada Thermal Scheme (2 × 200 MW.) Nagarjunasagar Pumped Storage Scheme (2 × 50 MW.) and Upper Sileru Extensions (2 × 60 MW.) are included in this category.

Besides the above six schemes, if the resources position permits Kothagudem Stage V envisaging installation of 2 Nos. of 200 MW units has to be taken up in Fifth Plan so that one unit is commissioned by the end of the Fifth Plan period i.e., by March 1979. If the above generation programme is implemented as planned, there will be a small surplus at the end of Fifth plan period.

Transmission :

A strong grid network comprising 220 KV. and 132 KV. lines and sub-stations is already covering the whole State. In the Fifth Plan with the increase in power demands as well as commissioning of new generating stations, further 220 KV. network from generating stations to load centres and 132 KV. radial feeders from 220 KV. receiving stations will be required. The transmission system of the State along with those of the other States in Southern region has to be studied on computer, as fully integrated operation of regional system has already come into being. These studies are already underway by the Central Water and Power Commission who are co-ordinating the development in all the States and regions. The transmission system is the operational requirement of the Board to serve the consumers but its benefits are indirect as they are not measurable like those of distribution and rural electrification in terms of numbers. It has to be ensured in the Fifth plan that adequate provision is available for transmission schemes from year to year. The major transmission lines 220 KV. lines to be commissioned during the Fifth plan are (1) Lower Sileru—Bommur (2) Gunadala—Nellore (3) Upper Sileru—Gazuwaka II Circuit (4) Kothagudem—Ramagundam (5) Srisaïlam—Hyderabad (6) Srisaïlam Gazuwaka (7) Srisaïlam—Gooty (8) Srisaïlam—Ongole (9) Cuddapah—Nellore (10) Lower Sileru—Upper Sileru and (11) Lower Sileru—Gazuwaka III Circuit. Further 220 KV. substations are proposed to be commissioned in Fifth Plan at (1) Bommur (2) Nellore (3) Hyderabad (Shapur-nagar) (4) Ramagundam and (5) Extensions at Gunadala and Gazuwaka. Inter-state and inter-system lines are covered under Centrally Sponsored Schemes outside the State Plan and Central loans are given for

these lines. During the Fourth plan, Emmore-Nellore, Gooty-Hampi and Upper Sileru Balimela 220 KV. links are under construction. During the Fifth Plan more such inter connections not only with the States in Southern region but also with Maharashtra and Madhya Pradesh are proposed to be taken up.

Line Losses :

Substantial amount of energy generated in the system is being lost in transmission and distribution network. The line losses in the system were 25.7% in 1968-69. Sustained efforts are underway for the reduction of line losses. In 1971-72 the line losses were 26.55%. It can be stated that the efforts made in this direction have been successful to the extent that the line losses have not increased much in spite of heavy rural electrification programme implemented during the last three years.

The reasons for line losses are:

- (i) The location of generating Stations at far corners of the State.
- (ii) Wide geographic spread and low load density of consuming Centres.
- (iii) Shortage of Installed Capacity.
- (iv) Inadequacy of the transmission and distribution system capacity.
- (v) The consumer pattern with very few high load factor Units

Proposals have been drawn up to improve system voltages and reduce line losses by constructing new 66 KV., 33 KV., and 11 KV. distribution lines and substations, reduction of lengths of lowtension feeders by erecting additional transformers, erection of 11 KV., capacitors to the extent of 50,000 KVA . in various sub-stations at a cost of Rs. 17 crores. The proposals include construction of 90 additional sub-stations of 66 KV., and 33 KV., and construction of 4000 Km. of 33 KV., and 11 KV., lines. When these works are completed, satisfactory voltages can be maintained at consumers premises and line losses reduced. The Planning Commission wanted to have a time bound programme to reduce the line losses to 14%. Such short reduction in the line losses is not possible in the Fifth Plan period even with the provisions now available for improvement works. However additions of bulk high load factor process industries to the system like fertilisers may reduce the proportion of the losses to the sales. The policy during the Fifth Plan in respect of distribution works is to see that priority is given for improving the dependability of power supply, for reduction of line losses and for strengthening distribution system. The release of services for extensive load development in already electrified localities is as important as extending electricity to new areas. The Commissioning of Generating Stations such as Vijayawada and Srisailem in the heart to load centres, will also contribute to the reduction of line losses.

Rural Electrification :

There are 27,084 villages in the State. Of these 9252 villages were electrified by March 1972 and by end of Fourth Plan the number would be about 10,700. The above figures relate to villages as classified in census books and over and above these villages many hamlets were electrified, though there are many more hamlets in electrified villages for whom power supply is yet to be extended. With a plan outlay of Rs. 100 crores for distribution and rural electrification and a minimum of Rs. 25 crores anticipated from Rural Electrification Corporation and others, about 6000 villages may be programmed to be electrified and about 2 lakhs agricultural services may be released. Tentatively it is proposed in the State Plan to ensure advance of Rs. 17 crores to 47,000 farmers for purchase of pumpsets during the Fifth Plan period. By the end of Fifth plan, 62% of villages will get electrified and the total number of agricultural services in the State will be about 4.5 lakhs.

In the actual determination of programmes under rural electrification it is anticipated that in drought affected areas the percentage of villages electrified would be about 80%.

Summing Up :

It is now possible to present in a summary fashion the physical targets and financial implications of power plan involving Rs. 450 crores emanating out of the detailed proposals made. To sum-up, therefore, the physical targets for Fifth Plan (including some assistance from Centre) are as follows :

<i>Item</i>	<i>Target</i>
Additions to Installed capacity (MW)	1,550
Energy sold (by 1978-79) (Million KWH)	5,600
Villages electrified (additional Nos)	6,000
Pumpsets energised (additional Nos)	2,00,000

The financial implications of the programme are as follows :

<i>Scheme</i>	<i>Outlay</i> (Rs. in crores)
<i>Generation :</i>	
Spillover	124.31
New	174.69
<i>Transmission</i>	
Spill over	28.34
New	26.66
Distribution and Rural Electrification.	100.00
Investigation and Miscellaneous	1.00
Total ..	450.00

The yearly phasing and scheme-wise allocation are indicated in Statements C and D.

Materials :

The programme of manufacture of generating equipment be Bharat Heavy Electricals Ltd., Heavy Electricals (I) Ltd., has to be closely coordinated with the generation programme of the States. The capacity of Bharat Heavy Electricals Limited, Tiruchi for supply of boiler plant for Thermal Stations and B. H. E. Ltd., Hyderabad and Hardware for supply of turbines and generators, has to be carefully looked into and appropriate measures taken to ensure that the generation programme goes through according to the plan. The Government of India have constituted a Committee of Ministers to study this aspect for the Fifth Plan power Programme. Orders have to be placed as early as possible (i.e.) in 1973-74 itself together with advance payments on B. H. E. Ltd. for Vijayawada and Kothagudam stage IV thermal sets so that the sets are supplied and commissioned according to the schedule. For the 3rd and 4th sets of Lower Sileru advance payments have to be made to B. H. E. L. in 1973-74. In respect of Srisailem Project, orders were already placed with B. H. E. L. and advance payments have already been made. For Nagarjunasagar scheme it is proposed that the equipment for the two generating sets should be allowed to be imported to expedite the project as indigenous manufacturers have yet to acquire the know-how for manufacture of pump-turbine units and the project will be delayed if tied up with them. The sets for Upper Sileru extensions have to be ordered with H. E. (I) L. and are likely to be supplied in about 4 years. Requirements of other items like cement, steel and aluminium are given below. Cement requirements can be adequately met from local factories.

<i>Scheme</i>	<i>Cement (Tonnes)</i>	<i>Steel (Tonnes)</i>
1. Lower Sileru Project	1,40,000	11,000
2. Srisailem Project	1,94,000	15,000
3. Nagarjunasagar P. S. H. E. Scheme	29,800	1,685
4. Upper Sileru extensions	4,000	6,000
5. Kothagudem Thermal Station Stage-IV.	35,000	16,000
6. Vijayawada Thermal Scheme	70,000	24,000
7. Transmission works	9,800	24,000
8. Distribution and Rural Electrification	1,20,000	10,000
Total	6,02,600	1,97,685

Regarding aluminium approximately 41,000 Tonnes are required for Transmission, Distribution and Rural Electrification works as shown below :—

	<i>Quantity (Tonnes)</i>
220 MV Lines	4,000
132 KV Lines	1,100
33 KV Lines	1,500
11 KV Lines	7,500
L.T. Lines	27,000
Total ..	41,100

Manpower Requirement :

The total employment potential in the Electricity Board (excluding contract labour) at the end of Fourth Plan in all categories is likely to be 55,000. The annual employment growth rate is likely to be between 6% to 7% per annum and over a 5-year period about 35%. So the total employment in the Board is likely to rise to about 75,000 employees by the end of the Fifth Plan. The likely increase in employment potential in various categories is given below :

1. Graduate Engineers and promoted diploma holders ..	1,000
2. Diploma holders, skilled and semi-skilled	8,000
3. Ministerial staff including Accountants, etc. ..	3,500
4. Unskilled	7,500
Total	20,000

The employment potential may be arrived at by adding a annual attrition of 1% by retirement, resignations and other causes or 5% over a five-year period. The total employment potential of the Board may be taken as 23,000.

Contract labour who are not considered as Board employees is not included in the above figures.

Organisation :

The Electricity Board has built sufficient expertise and adequate organisational capabilities to take up a programme of the magnitude envisaged. In regard to coordination with other sectoral plans the estimates of power demand have been arrived at on the basis of preliminary consultations. Field coordination will continue to be ensured,

CENTRAL SECTOR SCHEMES :

At the end of Fifth Plan it is anticipated that the percapita consumption of power would be about 120 kwh. in the State against while the All India level of 180 kwh. Accelerated growth rates will have to be planned if the State is to make up the gap and this would be beyond the financial capacity of the State. The Govt. of India should establish a nuclear power station in the State in their programme for Fifth Plan so that its benefits will be available in Sixth Plan. Similarly establishment of super thermal station under Central sector is essential. These will promote accelerated development of power sector in the State so that at least during Sixth plan period the State will attain national average level in respect of power consumption.

Ramagundam Super Thermal Station :

The Government of India have proposed to set up large Thermal Stations of 2000 MW. capacity each in some of the States and one such station is proposed at Ramagundam in Andhra Pradesh. To study the feasibility of establishing these large thermal stations, the Government of India have appointed a Site Selection Committee. All the preliminary data pertaining to the Ramagundam site has been forwarded to the Site Selection Committee. Civil investigations for the proposed sites for the power house as well as the reservoir for water supply to the power station are completed and the data forwarded to the Site Selection Committee. The Site Selection Committee after necessary studies will be submitting its recommendations to the Government of India on the feasibility of establishing the power station at various places.

The cost of the 2,000 MW. Station at Ramagundam will be about Rs. 350 crores. About 800 to 1,000 MW. will be the share of power for the Andhra Pradesh State in this Central Generating Station.

Establishment of Atomic Power Station in Andhra Pradesh :

The Government of India have appointed a Site Selection Committee to select suitable sites in Northern, Western and Southern regions for locating atomic power stations to be set up in future. In Andhra Pradesh, the Committee inspected certain sites. The detailed information required by the Committee regarding these sites was also furnished. Determined efforts have to be made to secure the location of the next atomic station in Southern region in Andhra Pradesh. Without the help of these Central Generating Stations, Andhra Pradesh will not be in position to catch up with the power development of other States in Southern region. The approximate cost of a 4,500 MW. atomic station will be of the order of Rs. 150 crores. A part of this expenditure has to be incurred during Fifth Plan. After a decision is taken to establish Atomic Station, it takes about 7 to 8 years to construct it. Hence only by about end of Sixth Plan this station will give benefits. For taking up works on the above two projects, a sum of Rs. 70 to 80 crores is proposed to Fifth Plan in Central Sector.

Inter State and Inter system lines are covered under Centrally sponsored schemes outside the State Plan and Central loans are given

for these lines. It is expected that a large number of such inter connections would have to be taken up and financed by Central.

Inter-State Links :

It is proposed to have an inter-State 400 KV. transmission line from Ramagundam in Andhra Pradesh to Chandrapur in Maharashtra during the Fifth Plan period. The total length of the line is about 144km of which 108 km. lies in the Andhra Pradesh territory. The cost of the scheme (Lines and Extensions) is estimated at Rs. 559 lakhs of which Rs. 366 lakhs amounts to the Andhra Pradesh portion. A draft scheme report for this scheme has recently been prepared by the Maharashtra State Electricity Board and this report has yet to be forwarded to the Government of India for approval.

Further proposals for other inter State links for Fifth Plan and inter regional links are being formulated.

If Ramagundam Super Thermal Station is sanctioned, then 400 K. V. lines from Ramagundam to the Tamilnadu and Mysore States will have to be planned. More Central assistance should also be forthcoming to strengthen the transmission and distribution sector to stimulate rapid growth in power consumption simultaneously with the availability of power.

In regard to rural Electrification, financing by Rural Electrification Corporation is essential. The policy of Rural Electrification Corporation in Fifth Plan requires elaboration. It needs to be mentioned that the loaning programme for tribal areas and Harijan cheries should involve an element of subsidy to the Board since they are not commercially viable schemes.

Loan Assistance from Rural Electrification Corporation :

The experience has been that about 18 schemes can be get sanctioned per year from the Rural Electrification Corporation. These 18 schemes on the average may be taken to electrify about 40 villages per scheme or 750 villages per annum. The cost per scheme roughly works out to Rs. 40 lakhs per scheme and these include energisation of about 400 pumpsets per scheme. On this basis on an average, about Rs. 5 crores per annum can be received in the form of loan assistance for rural Electrification or system improvement from Rural Electrification Corporation, New Delhi.

Electric Co-operatives :

However since the outlay in the Fifth Plan is expressed to be double that in the Fourth Plan the assistance in the Fifth Plan period can be anticipated to be double this i.e., Rs. 10 crores per annum.

Andhra Pradesh State Electricity Board Power Position During Fifth Plan 1974-79

Year	Anticipated maximum demand (M.W.)	Required installed capacity (M.W.)	Installed capacity at the beginning of the year (M.W.)	Additions to installed capacity during the year (M.W.)	Installed capacity by the end of the year (M.W.)	Surplus (+) or Deficit (-) in installed capacity (M.W.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1974-75	1,008	1,411	858	L.S. unit No. 1	100	(-)-453
					100	
1975-76	1,140	1,596	958	L. S. II Unit No. II	100	(-)-538
					100	
1976-77	1,285	1,799	1,058	L.S. Unit No. III	100	(-)-431
				L.S. Unit No. IV	100	
				K.T.P.S. Stg. IV Unit No. 1	110	
					310	
1977-78	1,450	2,030	1,368	Nagarjuna Sagar P.S.H.E.	100	(-)-82
				Vijayawada Unit No. 1	200	
				K.T.P.S. IV Stg. Unit No. II	110	
				U.S. Unit No. 1	60	
				Srisaïlam	110	
1978-79	1,640	22,96	1,948	Vijayawada Unit No. II	200 580	(+)-132
				U.S. Unit No. 2	60	
				Srisaïlam 2 & 3	220	
					480	

STATEMENT 'B'

Spillover to the Fifth Plan.

(Rs. in lakhs).

Name of the Scheme	Total cost		Expenditure upto 1968-69	Fourth plan approved outlay	Expenditure			Approved revised estimate for 1972-73	Approved provision in Budget estimate for 1973-74	Total for five years 1969-74	Spill over into Fifth plan
	Estimated earlier.	Revised if any.			1969-70	1970-71	1971-72				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1. Kothagudem Thermal Scheme Stage-III.	4300.00	4800.00 (Anticipated cost).	45.12	4217.59	736.01	549.58	1034.77	1150.00	800.00	4270.36	484.52
2. Lower Sileru H.E. Scheme	4990.00	7800.00	635.00	3628.63	217.45	293.18	607.90	800.00	800.00	2718.53	4446.47
3. N'Sagar Pumped Storage H.E. Scheme.	939.00	Not revised.	Nil	101.00	Nil	Nil	Nil	1.00	100.00	101.00	838.00
4. Upper Sileru Extensions	1194.00	1194.00 (to be approved by Planning Commission).	Nil	..	Nil	Nil	Nil	Nil	60.00	60.00	1134.00
5. Fourth Plan Transmission Scheme and Railway Electrification.	3571.00	3955.00	149.18	1528.23	277.68	225.55	183.93	160.00	625.00	1472.16	2333.66
6. Kothagudem Thermal Scheme Stage-IV.	4230.00	4230.00 (to be approved by Plng. Commn).	Nil	155.00	Nil	Nil	Nil	Nil	Nil	Nil	4230.00
7. Vijayawada Thermal Scheme	6660.00	Do.	Nil	155.00	Nil	Nil	Nil	Nil	Nil	Nil	6660.00
8. Srisaillam H.E.	7470.00	11700.00 (Tentative)	2208.96	2200.00	350.00	350.00	420.00	420.00	420.00	1960.00	7531.04

Statement showing yearly phasing of funds proposed for Fifth Plan in Rs. 450 Crores Plan.

(Rs. in Crores).

Sl. No.	Name of the Scheme	1974-75	1975-76	1976-77	1977-78	1978-79	Total
1.	Kothagudem Stage-III	4	0.85	..	..	..	4.85
2.	Kothagudem Stage-IV	4	7	13	14	4.30	42.30
3.	Kothagudem Stage-V	..	3	6	13	18	40.00
4.	Vijayawada Thermal Scheme	5	8	10	17	20	60.00
5.	Lower Sileru	14	13	10	6	1.46	44.46
6.	Upper Sileru	1	1	2	3	4.34	11.34
7.	N'Sagar Pumped Storage Scheme	2	2	2	2.38	..	8.38
8.	Srisaïlam	12	14	16	17	16	75.00
9.	Balimela	..	1	..	1	2	4.00
10.	Advance action on Sixth Plan Schemes and investigations	0.2	0.2	0.2	3.2	5.87	9.67
	Sub-total	42.2	50.05	59.20	76.58	71.97	300.00
11.	Transmission	8	10	10	10	12	50.00
12.	Distribution and Rural Electrification	15	16	20	23	26	100.00
	Grand Total	65.20	76.05	82.20	109.58	109.97	450.00

STATEMENT 'D'

Scheme-wise allocations for alternative Fifth Plan.

Sl. No.	Name of the Scheme	Scheme-wise outlay (Rs. in crores.)	Benefits in Fifth Plan (M.W.)
(1)	(2)	(3)	(4)
<i>A. Spill-Over Schemes :</i>			
1.	Lower Sileru H.E. Scheme ..	44.46	400
2.	Kothagudem Stage-III ..	4.85	..
3.	Srisaïlam H.E. Project ..	75.00	110
4.	Fourth Plan Transmission Scheme	23.34	..
<i>B. Approved New Schemes :</i>			
5.	Nagarjuuasagar Pumped Storage H.E. Scheme.	8.38	100
<i>C. New Schemes :</i>			
6.	Kothagudem Stage-IV ..	42.30	220
7.	Vijayawada Thermal Scheme ..	60.00	400
8.	Upper Sileru extensions ..	11.34	120
9.	Kothagudem Stage-V ..	40.00	200
10.	A.P. Power House at Balimela ..	4.00	..
11.	Advance action on new schemes for Sixth Plan.	8.67	..
12.	Fifth Plan Transmission scheme ..	26.66	..
13.	Distribution and Rural Electrification.	100.00	..
14.	Investigation and balance works of other Government works.	1.00	..
Total ..		450.00	1,550

15. LARGE AND MEDIUM INDUSTRIES.

The role of the State Government in the promotion of Large and Medium Industries is largely that of providing infrastructure and incentives and promotion through Andhra Pradesh Industrial Development Corporation and Andhra Pradesh State Financial Corporation.

REVIEW :

An important programme taken up by the State Government for encouraging the location of industries in the State was the establishment of Industrial Development Areas. The aim of this scheme is to acquire and develop large areas of land at selected growth centres in the State. In the Fourth Plan period, Industrial Development Areas were taken up for establishment in (a) Jeedimetla- Kukatpalli, (b) Balanagar, (c) Dowleshwaram, (d) Cuddapah, (e) Kathedan and (f) Visakhapatnam besides continuing the development of Industrial Development Areas at Nacharam and Uppal. The physical facilities being created on the Industrial Development Areas comprise roads, water lines, storm water drains etc. An extent of 992 acres have so far been utilised from these Industrial Development Areas and an expenditure of Rs. 269.27 lakhs has been incurred from 1969-70 to 1971-72 on them.

With a view to attracting the location of more industries in the State and also to encourage the local entrepreneurs to set up various industries in the State, the Government proposed to give incentives such as sale tax relief, power subsidy, exemption from payment of water rate etc., An amount of Rs. 0.19 lakh in 1970-71, Rs. 35.96 lakhs in 1971-72 and Rs. 20.58 lakhs during 1972-73 was disbursed to the eligible Industrial units.

With a view to organising and promoting industrial development in the State, the Andhra Pradesh Industrial Development Corporation was established in 1960 to render financial assistance to industries set up in the State and also to promote directly selected industries in the public, private and joint sectors. The Corporation has so far rendered financial assistance to 47 manufacturing units by way of direct participation, under-writing, guarantee of deferred payments, and temporary loans aggregating to Rs. 9.07 crores. As a result of these activities of the Corporation, new investments of about Rs. 120 crores have been generated in the State during the period 1961-71. The direct employment generated as a result of investment made by the Corporation in assisted schemes is estimated at around 11,000 persons. Consequently, employment opportunities created in the secondary, and tertiary sectors may be of the order of 35,000 persons. The Corporation has also established a few projects in the State's sector such as Republic Forge Co., with a capital outlay of Rs. 4.50 crores and Indo Nippon Precision Bearings Ltd., with an investment of Rs. 3.37 crores. The Corporation is also endeavouring to fulfil its share of responsibilities under the district industries programme. Under this programme a series of composite complexes of selected medium and small industrial units are being set up in suitable district towns particularly for stepping up the employment opportunities for educated boys and girls.

OBJECTIVES :

The State's Industrial policy has to sub-serve the National Plan objectives of creating increased employment opportunities, provision of basic minimum needs, income distribution, regional balance and self reliance. These National objectives entail (a) expansion of large, medium and small scale industries to provide direct and indirect employment, (b) production of goods and services required for the provision of Minimum Needs Programme, (c) Production of mass consumption goods to meet the increased demand for them following income redistribution, (d) promotion of industries in relatively backward areas to ensure balanced development of the region in the State and lastly (e) promote production oriented to achieve import substitution and export promotion.

PROGRAMME DETAILS :

In the Fifth Plan of the State an allotment of Rs. 33.10 crores has been made for Large & Medium Industries as against Rs. 11.26 crores anticipated to be spent in the Fourth Plan period. Of this Rs. 8.30 crores is for the Department of Industries and Rs. 24.80 crores is for Andhra Pradesh Industrial Development Corporation.

DIRECTOR OF INDUSTRIES:

Out of an amount of Rs. 8.30 crores Rs. 2.84 crores is for Industrial Development Areas and Rs. 5.46 crores for Incentives to Industries.

At present there are 7 Industrial Development Areas in the State. They comprise 3,500 acres of land including area covered by roads water lines etc. The estimated cost of the area is Rs. 3.00 crores after development. Out of 3,500 acres, the net area after deducting the area covered by roads, drains, water lines, hillocks etc., would be about 2,300 acres. 1,300 acres has been allotted to 170 parties at a cost of about Rs. 1.00 crore by the end of 1972-73. The plots are sold at cost price. Besides the above, there are also lands extending to about 4,550 acres which have already been acquired or under acquisition in 10 places of the State, for the purpose of setting up Industrial Development Areas. These areas are yet to be developed.

State Infrastructure Development Corporation of Andhra Pradesh;

The programme of development of infrastructure facilities proposed in the Fifth Plan will be implemented by the State Infrastructure Development Corporation (SIDC) which will be set up shortly. The Industrial Development Areas and the Industrial Estates programme proposed for the Fifth Plan period will be implemented through this Corporation.

Incentives to Industries :

In the classification announced by the Planning Commission, Andhra Pradesh has been listed as a Backward State. Further 14 out of the 21 districts of the State have been designated as backward. Central financial institutions offer incentives for new investment in

these districts. In addition, 41 Panchayat Samithis and Municipalities constitute subsidy tract. Capital investment upto Rs. 1 crore will be entitled to a Government subsidy of 15% from the Central Government.

The State Government has also in operation a set of incentives for industrial units set up after 1st January, 1969. It is now proposed to liberalise the incentives in conjunction with the frame work of Central incentives and subsidies.

These incentives will cover rebate on sales tax, subsidies on power and water rates and provision of developed lands. Special incentives are also contemplated for backward and tribal areas.

An amount of Rs. 5.46 crores is provided towards incentives during the Fifth Plan at Rs. 109 lakhs per annum.

Materials Depots :

At present the entrepreneurs are finding difficulty in procuring the building materials such as Iron & Steel, Cement and Teak Wood etc.,. In order to facilitate adequate and steady supply of such construction materials it is proposed to establish industrial construction materials depots at three places, namely, Vijayawada for Andhra, Hyderabad for Telangana and Cuddapah for Rayalaseema. A provision of Rs. 30 lakhs has been made for the establishment of the above 3 depots.

ANDHRA PRADESH STATE FINANCIAL CORPORATION

During the Fifth Plan period commencing from 1974-75 the Corporation expects to sanction financial assistance to the tune of Rs. 5,400 lakhs and disbursement of loans to the extent of Rs. 3,750 lakhs. As the total borrowings of the Corporation are limited to 10 times the paid up capital and as it cannot borrow further to meet the demand for funds, an amount of Rs. 196 lakhs is provided in the plan for investment as share capital. This capital would help to increase refinance limit by 3 times. The Corporation also intends to borrow by way of bonds Rs. 1,450 lakhs (net). The increase in capital together with borrowings would enable it to generate necessary funds to meet the commitments. By the end of the Fifth Plan period the total sanctions would reach Rs. 8,760 lakhs and the disbursements are expected to be Rs. 6,082 lakhs. The paid up capital would increase to Rs. 450 lakhs, reserves to Rs. 199 lakhs., refinance outstanding would become Rs. 1,271 lakhs and the bonds would go up to Rs. 2,361 lakhs. The requirements for the Fifth Plan work out to a total of Rs. 7,001 lakhs.

ANDHRA PRADESH STATE TRADING CORPORATION

As the Corporation has had the experience of only one full working year in export, import and internal trading activities, it has not been possible to prepare any set schemes indicating definite expenditure during the next Plan. It has been experience so far that the Corporation is required to take up internal trading in new items like boiled rice in 1972-73 and cotton yarn during the current year 1973-74, which

require investment of funds owned by the Corporation often at high levels, in order to raise required balance resources from the Banks. It is expected that the Corporation would continue to export items like Ananto seeds, Sandalwood oil, Handloom, Handicrafts, Carpets, Myrobolaom etc., The Corporation also proposes to introduce in the foreign markets on some new items of light engineering goods, castor oil, turmeric, spices, minerals and forest produce.

Similar on the import side, in addition to the items like Iodine, Soda ash and Graphite which are on the current list, it is also proposed to continuously increase the items ultimately to cover all the items required by small scale industry in the State. As against the business of Rs. 16 lakhs for the year 1971-72, the turn over of the Corporation was about Rs. 250 lakhs in the year 1972-73 and the current indications are that the volume of business may even exceed this during the year 1973-74. During the Fifth Plan period, a total investment of Rs. 30 lakhs as share capital is proposed from Government at the rate of Rs. 6 lakhs per annum. It will be appreciated that for achieving a volume of business of about Rs. 2.5 crores per annum amounting to over Rs. 12 crores for the period, this order of investment by the State Government in the Corporation is essential.

ANDHRA PRADESH INDUSTRIAL DEVELOPMENT CORPORATION LIMITED REVIEW :

In regard to the development of large and medium scale industries in the State an important step taken by the Government has been the establishment of the Andhra Pradesh Industrial Development Corporation to serve as a special instrument for planned industrialisation of the State. The functions of the Corporation are rendering financial aid to industries and promotion of selected industries in the large/joint and private sectors. As a result of these activities of the Corporation new investment of the order of Rs. 120 crores has been generated in the State during 1961-71 constituting nearly 85% of the total investment in the organised sector.

During the first 4 years of the Fourth Plan period the Corporation has extended assistance to as many as 22 units in the State which contributed to a total investment in the State of the order of Rs. 37 crores. The Corporation's share in this investment was of the order of Rs. 3 crores of which nearly Rs. 2 crores went to joint sector ventures, Rs. 56 lakhs as assistance to units by way of share capital participation and Rs. 48 lakhs, by way of loan assistance to companies. The availability of limited resources has been a restricting factor in the promotional activities of the Corporation. There is little doubt that with greater resource mobilisation from the Corporation side, a major fillip to the industries in the State could be given and larger investments drawn into the industries sector. The total resources of the Corporation during the first 4 years of the Fourth Plan have only been of the order of Rs. 3.4 crores of which nearly Rs. 3 crores were contributed by the Government as share capital for the Corporation and loans and the rest have been the net internal resources of the Corporation available for investments.

Resource Mobilisation :

In the formulation and implementation of the proposals in the Fifth Five Year Plan, a major role is envisaged for Andhra Pradesh Industrial Development Corporation. It will be seen that the Plan visualises a total outlay from the Corporation of Rs. 24.80 crores during the Fifth Plan period reflecting an average investment level of around Rs. 5 to 6 crores per year. The outlays planned by the Corporation during the Fifth Five Year Plan represent a significant step up from its Fourth Plan performance not only because of the increased emphasis being placed on industries in general to generate a higher growth rate but also by reason of the complementary role that the medium and large scale industries sector will have to play with the small scale sector in expanding avenues of production and employment. Needless to emphasise that for creating wide spread employment potential in the State the basic raw materials must be produced in abundance and properly distributed, and the large and medium scale sector takes a major role in making available these essential raw materials and intermediary goods that could sustain a diversified consumer oriented production activity through out the State. Thus, a major emphasis on the medium and large scale sector is essential to guide the economy into the channels of developmental activity visualised by the Planning Commission.

While the major share of the proposed outlay during the Fifth Plan would necessarily have to come from the Government, the Corporation also expects a significant step up of its internal resources from the Fourth Plan period. During the Fifth Plan these are expected to be of the order of Rs. 70 lakhs after taxation.

The Corporation is also keeping in view the possibility of rotating its funds from established units and using the resources for promoting newer ventures. It should never the less be borne in mind that most of the medium and large scale industries have fairly large construction and gestation periods during which Corporation's investments do not fetch adequate returns. Therefore investments from such units can only be withdrawn after sufficient time if losses are to be avoided.

ORGANISATIONAL FRAME WORK :

Considering the magnitude of the outlays envisaged as also the number of schemes for which the Corporation is responsible a major re-structuring of the Corporation is imperative. It will also be seen that the activities of the Corporation over the years have expanded many fold from financial appraisal and assistance to project formulation and execution and the trend is likely to intensify during the Fifth Five Year Plan period. In order to meet the enlarging responsibilities, the Corporation has plans to strengthen its technical, financial and industrial services wings adequately with qualified specialists in the various fields. It may be mentioned that the Corporation has already formed a separate projects wing to take care of the projects which are in an advanced stage and also the financial wing has been strengthened. Plans for expanding these wings further are under way. Proposals are also under way to develop the Corporation into a holding company

to look after not only the projects being promoted by the Corporation but also the investments of the State Government in the various industrial ventures. A competent group for providing technical and consultancy services to medium scale entrepreneurs and a separate wing to take care of the science and technology needs of the industries coming under the aegis of the Corporation are also under consideration. Detailed proposals in regard to the expansion of the technical wings of the Corporation and a phase-wise development during the Fifth Plan period will be formulated in due course and submitted to the Government.

PROGRAMME DETAILS :

Keeping in view the available resources level of Rs. 62 crores for the industries sector, the anticipated outlay by Andhra Pradesh Industrial Development Corporation in the Fifth Five Year Plan in terms of the envisaged core plan is assessed at around Rs. 24.8 crores. This outlay from Andhra Pradesh Industrial Development Corporation is expected to generate a total investment of about Rs. 231 crores in the Medium and Large Scale Industries. The enclosed Annexure-I gives a detailed list of the schemes proposed under this core plan and the year-wise phasing of the investment for each scheme both in regard to the total investment as well as the Corporation's share.

For convenience the schemes have been divided into two broad groups. The first group covers the committed schemes representing proposals for which commitments have been made to some extent and some expenditure has already been incurred in the Fourth Five Year Plan. It may be mentioned here that much of the Corporation's investment during the Fourth Plan has been on industrial units which have already come into existence. There are no schemes at present which are in the process of implementation and as such represent spill over schemes in the real sense. In formulating its core plan which represents a significant step down from the original plan of Rs. 42 crores the Corporation has taken care to drop all such schemes for which firm commitments either in regard to the co-promotional agreement or technical collaboration arrangements have not been made.

The second group comprises new schemes which are proposed to be taken up afresh in the Fifth Plan and have been selected mainly to match the criteria guidelines prescribed by the Planning Commission.

The schemes are also divided region-wise i.e., Coastal Andhra, Rayalaseema and Telangana to reflect the magnitude of investment planned for each region. While the committed schemes by and large represent major schemes of State-wide significance, new schemes proposed have been bifurcated into major schemes of State-wide significance and schemes that can be developed as part of the district industries programme. In preparing these details the guidelines and formats given by the Planning Commission for the medium and large scale industries have been adhered to.

Annexure-II gives the details in regard to each project/scheme as required in the format given by the Planning Commission with their guidelines for the formulation of Fifth Plan for medium and large scale industries.

Creation of State Bureau of Public Enterprises :

This State Government have set up four industrial promotional and Financial Corporations, one Trading Corporation and five Government Companies. In addition, there are 41 companies in which the Government have made large investments. The total investments of the Government in these Corporations and Companies add up to more than Rs. 85 crores and loans add up to more than Rs. 7 crores. Apart from these, there are 9 co-operative sugar factories and Co-operative Spinning Mills, in which Government have made matching share contribution and for which Govt. have under-written Block loans and are providing officers for top-level management. The number of co-operative sugar factories is steadily increasing.

With the large number of industrial units which have come into existence in the public sector and industrial units in which Government have financial and managerial interests, it is necessary to create an organisation in the Department of Industries and Commerce, similar to, though smaller than Bureau of Public Enterprises at the Centre, to watch and analyse the progress and development of these units, standardise procedures and advise the Government and also Government Directors in all financial matters relating to the problems of the development of the above categories of industries in the State and to safeguard the investments made by the Government from time to time and help get reasonable returns from these investments. This will be the main instrument for monitoring of performance and for advising the Government on policy making and planning in respect of State enterprises and other enterprises in which Government have interests. The need for a Bureau of this type is obvious from the fact that with their limitations of managerial personnel, experience and continuity, State enterprises do not have the advantage that comparable private units have with their functional full-time Directors and underpinned as they are by the policy making and planning organisation in the head offices of their groups.

The estimated cost on the scheme works out to Rs. 14,66,000 on recurring items and Rs. 4,39,000 on non-recurring items for the entire 5 year period.

Additional Investment in Government Companies :

The following are the State Government companies in this state (excluding promotional organisations) ;

1. Singareni Collieries Company Ltd.,
2. Hyderabad Chemicals and Fertilisers Ltd.,
3. Nizam Sugar Factory Ltd.,
4. Republic Forge Company Ltd.,

In addition, Hyderabad Allwyn Metal Works Ltd., though not a Government company, is a company in which the State Government hold the majority of the shares and is under Government management.

The Government will have to make additional investments from time to time in order to improve the working of these companies and

meeting essential additional production targets. For this purpose, a provision of Rs. 83.00 lakhs is made in the Fifth Plan.

State Government Contribution to Sick Mills :

Six sick/closed spinning mills in this State have been taken over by the Government of India under the Industries (Development and Regulation) Act, 1951, with the National Textiles Corporation as authorised controller. According to the all-India pattern laid down, the State Government have to contribute 49 percent of the expenditure required for running these mills as well as for modernising/expanding them. For meeting this expenditure, a provision of Rs. 30 lakhs is provided in the Fifth Plan.

ANNEXURE-I

Statement showing the extent of land proposed to be developed in the growth centres.

Sl. No.	Region/District.	Area to be developed (Acres.)	Cost (Rs. in lakhs.)	Employment. (Persons)
(1)	(2)	(3)	(4)	(5)
I. Rayalaseema				
1.	Anantapur	67	6.75	675
2.	Cuddapah	201	8.78	2,025
3.	Chittoor	268	24.31	2,700
4.	Kurnool	134	12.16	1,350
	Total	670	52.00	6,750
II. Telangana				
1.	Adilabad	57	3.89	565
2.	Medak	56	5.65	565
3.	Nizamabad	56	5.65	565
4.	Nalgonda	57	3.96	560
5.	Mahabubnagar	57	3.99	565
6.	Karimnagar	283	11.88	2,820
7.	Khammam	113	4.52	1,130
8.	Warangal	56	5.65	565
9.	Hyderabad	565	23.91	5,655
	Total	1,300	78.00	13,000
III. Coastal Andhra.				
1.	Prakasam	57	5.62	550
2.	Nellore	57	5.62	550
3.	Guntur	196	16.30	2,000
4.	Krishna	57	7.87	550
5.	East Godavari	112	13.74	1,125
6.	West Godavari	57	7.87	565
7.	Visakhapatnam	422	39.91	4,200
8.	Srikakulam	57	5.07	560
	Total	1,015	102.00	10,100
ABSTRACT				
	Rayalaseema	670	52.00	6,750
	Telangana	1,300	78.00	13,000
	Coastal Andhra	1,015	102.00	10,100
	Total	2,985	232.00	29,850

NAME AND CAPACITY OF THE PROJECT

Serial Number	Name of the Project	Location	Nature of the Project New/Expansion	Product/Output Capacity	Whether feasibility Study/DPR/prepared
(1)	(2)	(3)	(4)	(5)	(6)
1.	Typewriters and Calculators.	Coastal Andhra.	New.	(1) Manual type writers. (2) Electric calculators- 12000 Nos. (S) 600 Nos. (P).	Yes.
2.	Tyres and Tubes.	Do.	Do.	4 laks Nos. each/year.	Yes.
3.	P.V.C.	Do.	Do.	30,000 TPA	Yes.
4.	Soda Ash.	Do.	Do.	73,000 T.P.A.	Yes.
5.	Caustic Soda.	Do.	Do.	36,500 T.P.A.	Yes.
6.	Caluned Petroleum Coke	Do.	Do.	Caluned Petroleum coke	
7.	Nylon Filament Yarn.	Rayalaseema	New	10-240 denier 2100 TPY	Yes.
8.	Capacitors.	Do.	Do.	10-m. No. P.a. 5-m.m.p.a	Yes.
9.	G. L. S. Lamps.	Do.	Do.	12.m.nos.pa.	Yes.
10.	Sodium Triply Phosphate (STPP).	Do.	Do.	17,000 tp.	No.
11.	Nitrocellulose.	Do.	Do.	Nitrocollulose	
12.	Printing machinery.	Do.	Do.	250 nos. 250 } 2,000.	Yes.
13.	T. V. Picture Tubes	Telangana	New.	6 } 10 } 10 Nos.	Yes.
14.	Ms. and HC. Steel Billets	Do.	Do.	30,000 T.P.A. 20,000T.P. A.	Yes.
15.	Semi conductor Devices	Do.	Do.	12 m. Nos./p.a.	Yes.
16.	Scotors.	Do.	Do.	24,000 Nos. /p.a.	Yes.

II

SCHEDULE OF IMPLEMENTATION.						PROJECT	
By whom	Present status-whether approved, submitted for approval, etc.	Nature of foreign collaboration required (Technical/financial)	Date of start of construction	Date of Commencement of Production	Achievement of rated Capacity likely date	(i) Land	Buildings and Civil works
(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
APIDC	Not yet.	Tech.	1973	1975	1977	20	160
APIDC	.. Not.	.. Tech. and Fine.	1975	1977	1978	10	100
APIDC.	.. Not.	.. Yes. ..	1976	1978	1979	10	40
APIDC.	.. Not.	.. Yes. ..	1975	1977	1978	15	130
APIDC.	.. Not.	.. Yes. ..	1976	1978	1979	5	45
..	..	.. Yes. ..	1976	1977	1978	5	10
APIDC.	.. Not.	.. Yes. ..	1973	1975	1976	10	60
APIDC.	..	.. Yes. ..	1974	1976	1977	2	8
APIDC.	.. Not.	No. ..	1976	1978	1979	2	13
..	Not.	.. Yes. ..	1976	1978	1980	15	75
..	..	.. Yes. ..	1976	1978	1979	5	15
APIDC.	.. Not	.. Yes U.K. ..	1975	1977	1978	5	15
APIDC.	..	.. Yes. ..	1975	1977	1978	1	12
APIDC.	..	.. No. ..	1974	1976	1977	10	60
APIDC.	.. No.	.. No. ..	1976	1977	1978	2	18
APIDC.	.. No.	.. No. ..	1975	1976	1977	5	25

EXPENDITURE RUFEEES IN LAKHS.			FINANCING & EXECUTION OF THE PROJECT				
	(iii) Machinery and equipment.	(iv) Others.	(i) Name of the executing agency	(ii) Arrangements for Financing.	(iii) Source & extent of institutional finance envisaged		
	(15)	(16)	(17)	(18)	(19)		
1. Typewriters and Calculators.	40	..	A New Public Limited Company.	Joint Sector project.	Two third of the cost of the Project.		
2. Tyres and Tubes.	800	290	Do.	Do.	Do.		
3. P.V.C.	1'100	150	Do.	Do.	Do.		
4. Soda Ash.	555	100	Do.	Do.	Do.		
5. Caustic Soda.	650	150	Do.	Do.	Do.		
6. Caluned Petroleum Coke	60	25	Do.	Do.	Do.		
7. Nylon Filament Yarn.	1,100	255	Do.	Do.	Do.		
8. Capacitors.	40	10	Do.	Do.	Do.		
9. G. L. S. Lamps.	90	30	Do.	Do.	Do.		
10. Sodium Triply Phosphate (STPP).	615	60	Do.	Do.	Do.		
11. Nitrocellulose.	110	20	Do.	Do.	Do.		
12. Printing machinery.	200	..	Do.	Do.	Do.		
13. T. V. Picture Tubes.	152	85	Do.	Do.	Do.		
14. Ms. and HC. Steel Billets.	547	100	Do.	Do.	Do.		
15. Semi conductor Devices.	85	15	Do.	Do.	Do.		
16. Scooters.	200	50	Do.	Do.	Do.		

I—(Contd.)

<small>(1947) 10th WHEAT CATCH</small> internal resources of the Co./ corpn. are to be deployed.	MATERIAL REQUIREMENTS.			EMPLOYMENT POTENTIAL IN NOS.				
	Steel (in Tonnes.)	Cement (in Tonnes.)	During Construction	AFTER CONSTRUCTION.				
				(a) Managerial.	(b) Technical Engineers & Super Supervisory.	(c) Clerical.	(d) Skilled Workmen.	(e) Unskilled Workmen.
(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
Not applicable	335	1,900	100	5	15	25	205	100
Do.	5,600	10,000	400	40	100	80	540	200
Do.	7,300	12,000	..	25	75	50	200	150
Do.	5,000	8,500	400	20	40	40	300	500
Do.	4,600	8,000	..	..	25	75	250	150
Do.	330	1,000	..	..	25	25	125	75
Do.	7,700	13,000	160	10	20	40	100	256
Do.	370	550	40	2	12	15	50	20
Do.	490	720	100	5	..	15	140	37
Do.	4,500	7,000	200	25	40	50	100	125
Do.	320	1,300	80	10	20	20	120	30
Do.	1,400	2,200	200	25	50	20	250	500
Do.	100	1,100	100	5	25	20	100	10
Do.	5,500	10,000	200	30	30	50	250	50
Do.	480	730	50	5	15	20	30	40
Do.	1,160	1,800	250	10	65	75	300	150

(1)	(2)	(3)	(4)	(5)	(6)
17.	Connectors.	Telangana	New.	5, 4, 3, 4 lac. nos. per.a.	Yes.
18.	Tape recorders.	Do.	Do.	10,000 nos. p.a.	.. Yes.
19.	Paper cones and spiders	Do.	Do.	2 m. p.a. ..	.. Yes.
20.	Sponge irons.	Do.	Do.	100 P.T.D. ..	.. Yes.
21.	Synthetic Detergents.	Do.	Do.	10,000 T.P.A.	.. Yes.
22.	Graphite Crucibles.	Do.	Do.	Graphite Crucibles.	.. Yes.
23.	Fibre Glass.	Do.	Do.	1,000 T. ..	.. Yes.
24.	Castor complex.	Do.	Do.	..	.. Yes.
24.	Potentometers Trucks.	Carbon Do.	Do.	1.0+5 M. Nos. p.a.a	.. Yes.
26.	Maches pieces.	Do.	Do.	3+1.2 0.3+0.2	.. Yes.
27.	Polypropylene	Coastal Andhra.	New.	..	.. No.

(7)	(8)	(9)		(10)	(11)	(12)	(13)	(14)
APIDC.	..	.. Yes.	..	1974	1976	1977	2	8
APIDC.	..	..	..	1974	1976	1977	1	5
APIDC.	..	.. Yes.	..	1974	1975	1978	0.15	1.5
APIDC and Dastur and Co.		.. Yes.	..	1974	1977	1978	5	25
APIDC.	.. Net.	.. No.	..	1974	1975	1976	1	15
APIDC.	..	.. No.	..	1976	1977	1978	1	6
APIDC.	.. Net.	.. Yes.	..	1975	1977	1978	10	40
APIDC.	.. Net.	.. Yes.	..	1975	1977	1978	20	50
APIDC.	..	.. No.	..	1974	1975	1977	1	6
APIDC.	..	.. Yes.	..	1976	1978	1979	5	25
..		.. Tech.	..	1975-76	1977-78	1978-79	15	100

(1)	(2)	(15)	(16)	(17)	(18)	(19)
17.	Connectors.	95	75	A New Public Limited Co.	Joint Sector Project.	Two third of the cost of the Project.
18.	Tape recorders.	36	12	Do.	Do.	Do.
19.	Paper cones and spiders.	8.0	0.35	Do.	Do.	Do.
20.	Sponge irons.	250	20	Do.	Do.	Do.
21.	Synthetic Detergents	40	4	Do.	Do.	Do.
22.	Graphite Crucibles.	53	10	Do.	Do.	Do.
23.	Fibre Glass.	260	40	Do.	Do.	Do.
24.	Castor complex.	350	80	Do.	Do.	Do.
24.	Potentometers Carbon Trucks.	68	10	Do.	Do.	Do.
26.	Mtches pieces.	350	50	Do.	Do.	Do.
27.	Polypropylene	900	185	Do.	Do.	Do.

(1)	(2)	(3)	(4)	(5)	(6)
1.	Furfural ..	Coastal Andhra.	New	6000 TPA	Profile is ready
2.	Auto Ancillaries ..	Do.	Do.	Shock Absorbors.	..
3.	Jute Mills ..	Do.	Do.	50 tonnes	..
4.	Textile Mills ..	Do.	Do.	..	..
5.	Tobacco Processing Machine.	Coastal Guntur.	Do.	500 TPA	..
6.	Jute Mill ..	Do.	Do.	50 T	..
7.	Plastic Working Machines.	Do.	Do.	..	..
8.	Steel Structurals ..	Do.	Do.	6000 p.a.	..
9.	Conveying Equipment ..	Do.	Do.	..	..
10.	Graphite Electrodes ..	Do.	Do.	..	..
11.	Deep Sea Fishing ..	Do.	Do.	..	Profile ready.
12.	Salt and Marine Complex.	Do.	Do.	..	Do.
13.	Coconut Complex ..	Do.	Do.	..	..
14.	Plywood ..	Do.	Do.	..	Profile ready.
15.	Shoddy Mill ..	Do.	Do.	..	..
16.	Nuxvomica Plant ..	Do.	Do.	..	..
17.	Engineering Plastic Goods.	Do.	Do.	50 tonnes	..
18.	Particle Board (Rice Husk).	Do.	Do.	..	..
19.	Solvent Extraction ..	Do.	Do.	50 tonnes/Day	Yes
20.	Agricultural, Rural Wooden.	Do.	Do.	..	..
21.	Tolbutamide ..	Do.	Do.	..	..
22.	Phenel Butozone ..	Do.	Do.	..	..
23.	Storage Batteries ..	Do.	Do.	50,000 nos. per annum	Profile ready.
24.	Particle Board ..	Do.	Do.	..	Do.
25.	Baby Food Based on ..	Do.	Do.	..	No.
26.	Bread and Biscuits ..	Do.	Do.	..	..

(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
APIDC	..	Yes	1976	1978	1979	2	8
..	..	Yes	1976	1978	1979	5	15
..	..	No.	1976	1978	1979	5	20
..	1976	1978	1979	2	8
APIDC	..	Yes	1976	1978	1979	5	15
..	..	No	1976	1978	1979	5	20
No	1977	1979	1980	1	9
..	..	No.	1977	1978	1979	2	13
..	..	No	1977	1978	1979	5	25
..	1975	1977	1978	5	25
APIDC	..	Yes	1974	1976	1977	2	8
APIDC	Not yet	No	1975	1976	1977	20	10
No	..	No	1976	1977	1978	10	110
APIDC	..	No	1975	1976	1977	1	4
..	..	No.	1977	1978	1979	2	5
..	1977	1978	1978	0.3	0.3
..	Not yet	No	1977	1978	1979	1	4
..	..	No	1978	1979	1979	0.2	0.8
APIDC	Not yet	No	1976	1978	1979	1	2
..	..	No	1975	1976	1976	0.2	0.8
..	..	Yes	1975	1976	1977	1	5
..	1977	1978	1979	2	5
APIDC	1975	1976	1977	1	4
..	1977	1979	1980	1	4
..	..	Not	1977	1978	1979	1	9
..	1978	1979	1980	0.5	2.5

(1)	(2)	(15)	(16)	(17)	(18)	(19)
1. Furfural	85	15	New Public Company. Limited	Joint Sector Project.	Two third of the cost of the Project.
2. Auto Ancillaries	..	180	50	Do.	Do.	Do. ..
3. Jute Misl	180	45	Do.	Do.	Do. ..
4. Textile Mills	..	80	10	Do.	Do. ..	Do. ..
5. Tobacco Processing Machine.		180	50	Do.	Do. ..	Do.
6. Jute Mill	180	45	Do.	Do.	Do. ..
7. Plastic Working Machines.		80	10	Do.	Do. ..	Do.
8. Steel Structural	..	70	10	Do.	Do. ..	Do. ..
9. Conveying Equipment ..		150	20	Do.	Do. ..	Do. ..
10. Graphite Electrodes	..	320	70	Do.	Do. ..	Do. ..
11. Deep Sea Fishing	..	80	10	Do.	Do. ..	Do.
12. Salt and Marine Complex.		50	20	Do.	Do.	Do.
13. Coconut Complex	..	35	5	Do.	Do. ..	Do.
14. Plywood	35	5	Do.	Do. ..	Do.
15. Shoddy Mill	..	20	8	Do.	Do. ..	Do. ..
16. Vuxvomica Plant	..	10	3.5	Do.	Do. ..	Do. ..
17. Engineering Plastic Goods.		20	5	Do.	Do.	Do.
18. Partial Board (Rice Husk).		9	..	Do.	Do. ..	Do. ..
19. Solvent Extraction	..	20	2	Do.	Do.	Do.
20. Agricultural, Rural Wooden.		70,000	Nil.	Do.	Do. ..	Do. ..
21. Tolbutamide	..	40	4	Do.	Do. ..	Do. ..
22. Phenel Butozone	..	65	8	Do.	Do. ..	Do. ..
23. Storage Batteries	..	20	5	Do.	Do. ..	Do.
24. Particle Board	..	60	10	Do.	Do. ..	Do. ..
25. Baby Food Based on	..	35	5	Do.	Do. ..	Do. ..
26. Bread and Biscuits	..	20	2	Do.	Do.	Do.

(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
Nil.	630	1,000	150	10	40	50	200	50
N.A.	1,130	1,800	200	10	40	50	250	100
Do.	1,870	2,200	800	20	80	100	600	1,200
Do.	580	900	800	20	80	100	600	1,200
Nil.	1,130	1,800	250	10	40	50	300	150
N.A.	1,130	1,800	800	10	40	50	250	100
Do.	450	210	180	10	30	30	90	140
Do.	460	720	120	5	15	30	150	100
Do.	933	1,500	200	10	20	30	200	120
Do.	2,316	5,400	600	20	80	100	600	400
Do.	390	600	400	5	20	50	225	500
Do.	500	1,000	400	25	50	25	300	400
Do.	100	550	100	10	20	10	75	125
Do.	224	240	150	5	20	25	150	150
Do.	190	350	..	10	25	15	75	125
Do.	78	135	80	1	2	12	30	20
Do.	140	280	75	5	30	15	50	50
Do.	55	90	40	1	4	10	40	45
Do.	137	730	60	5	10	5	40	60
Do.	29	66	100	1	14	10	175	400
Do.	270	450	..	2	18	15	125	90
Do.	450	750	200	25	50	25	125	175
Do.	160	270	100	3	12	10	150	75
Do.	410	675	45	5	10	15	20	25
Do.	244	450	80	2	8	20	80	50
Do.	140	225	60	5	5	10	30	50

(1)	(2)	(3)	(4)	(5)	(6)
27.	Vanaspati ..	Coastal Andhra.	New	TPD	Yes
28.	Granulated Mixed Fertilizer.	Do.	Do.	45,000 TPA	Yes
29.	Textile Processing ..	Do.	Do.	25,000 spindles	No
30.	Agricultural Implements	Do.	Do.	..	Profile ready.
31.	Protein Foods ..	Do.	Do.	..	..
32.	Dischromatics ..	Do.	Do.	5 TPD	Do.
33.	Cashew Nut Shell Liquid.	Do.	Do.	..	..
34.	Rolls and Calendars ..	Do.	Do.	..	No.
35.	Textile Mills ..	Do.	Do.	..	No.
36.	Tractors ..	Do.	Do.	..	Yes

(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
..	1977	1979	1980	1.0	4.0
..	1977	1978	1979	0.5	2.5
..	..	Not	1977	1978	1979	1	9
..	..	Not	1977	1978	1979	1	4
..	..	Not	1976	1977	1977	1	4
..	1978	1979	1980	1	5
..	1978	1979	1980	0.5	1.5
..	..	Tech.	1976	1978	1979	5	20
..	..	Not	1976	1977	1978	2	8
APIDC	..	Yes	1977	1978	1979	10	50

(1)	(2)	(15)	(16)	(17)	(18)	(19)	
27.	Vanaspati ..	..	35	10	New Public company Limited	Joint Sector Project	Two third of the cost of the Project
28.	Granulated Mixed Fertilizer.		24	3	Do.	Do.	Do.
29.	Textile Processing	..	45	5	Do.	Do.	Do.
30.	Agricultural Implements		25	..	Do.	Do.	Do.
31.	Protein Foods	..	25	..	Do.	Do.	Do.
32.	Dischromatics	..	35	4	Do.	Do.	Do.
33.	Cashew Nut Shell Liquid.		5	2	Do.	Do.	Do.
34.	Rolls and Calendars	..	300	75	Do.	Do.	Do.
35.	Textile Mills	..	80	10	Do.	Do.	Do.
36.	Tractors ..	..	600	100	Do.	Do.	Do.

(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
N.A.	257	450	150	10	15	25	80	120
Do.	165	270	150	10	15	25	80	120
Do.	572	810	100	5	25	30	100	80
Do.	140	216	60	2	5	18	50	50
Do.	164	270	70	2	8	20	80	40
Do.	246	405	120	10	15	20	65	90
Do.	55	90	25	5	5	5	10	15
Do.	1,900	2,880	1,000	20	80	100	800	1,000
Do.	530	900	800	20	80	100	600	1,200
Do.	3,420	5,400	600	25	150	125	500	200

(1)	(2)	(3)	(4)	(5)	(6)
1.	Asbestos Complex.	Rayalaseema (Cuddapah)	New	30,000 T.P.A.	Yes.
2.	Power-Transformers.	Rayalaseema.	Do.	2.5 miln. K.V.A.	Do.
3.	Medium-size Paper Plant.	Do. Kur- nool)	Do.	Wpg. & Pck. 25 tons day.	Under prpn.
4.	Pulp & Paper mill.	Rayalaseema	Do.	100 T.P.D.	Under consdn.
5.	Leather & footwear.	Do.	Do.	..	..
6.	Phthalates.	Do.	Do.	1,000 T. +250.	Yes.
7.	Propd calcium.	Do.	..	10 T. per day	Under prpn.
8.	Cattle feed.	Do.	New	5 tons/day.	Do.
9	.Oxygen & Acetyline.	Do.	Do.	9,00,000 each.	Yes
10.	Cold rolled staps & box strappings.	Do.	Do.	3,000 tons p.a.	Do.
11.	Nickel cudmium cells.	Do.	Do.	2 mil. nos. +0.5 Do. +0.5 Do. +0.1 Do.	No.
12.	Brake & clutch liners.	Do.	Do.	310 tons +40 Do.	Yes.
13.	Collapsable tubes.	Do.	Do.	10. ml. nos.	Do.
14.	Bread & Biscuits.	Do.	Do.	..	..
15.	Solvent Extraction unit.	Do.	Do.	50 tons day	Yes
16.	Granulated mixed Fer- tilisers	Do.	Do.	45,000 T.P.A.	Yes.
17.	Textile Processing unit.	Do.	Do.	25,000 spindles.	No.
18.	Bicycle tyres and tubes.	Do.	Do.	..	..
19.	Moulded plastic goods.	Do.	Do.	..	..
20.	Razor blades.	Do.	Do.	..	..
21.	Flour Mill	Do.	Do.	..	..
22.	Phthalate Nuhydride.	Rayalaseema.	New	..	No.
23.	Textile Mills.	Do.	New	No.	..
24.	Electric Motors.	Do.	New	50 H.P.200	..
25.	Synthetic Detergents.	Do.	Do.	.. 10,000 T.I.A.	Yes
26.	H. T. & L. T. Insu- lators.	Do.	Do.	..	Do
27.	Shoddy Mill.	Do.	Do.	..	..
28.	Steel Furnitures.	Do.	Do.	..	..
29.	Street light Fittings.	Do.	Do.	No.	.
30.	Gypsum Board.	Do.	Do.	..	

(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
P.I.D.C.	..	Yes Tech.	1976	1978	1979	5.0	25.0
Do.	..	Do.	1976	1978	1979	5.0	20.0
Do.	Not yet	Not yet.	1976	1978	1979	5.0	15.0
..	..	No.	1976	1977	1979	..	100.00
..	..	No.	1977	1978	1979	2.0	8.0
P.I.D.C.	Not yet.	No.	1976	1977	1978	0.05	3.0
Do.	Do.	No.	1976	1977	1978	1.0	8.0
Do.	Do.	No.	1976	1977	1978	0.5	7.5
Do.	..	No.	1975	1976	1977	1.0	4.0
Do.	..	Yes (T)	1978	1978	1979	2.0	3.0
..	..	Yes	1977	1978	1979	2.0	8.0
I.D.C.	..	Yes (T)	1976	1978	1979	1.0	8.0
Do.	..	No.	1976	1977	1979	1.0	4.0
..	..	..	1978	1979	1980	0.5	2.5
I.D.C. ..	..	No.	1976	1977	1978	1.0	2.0
I.D.C.	..	..	1977	1978	1979	0.5	2.5
..	..	No.	1976	1977	1978	1.0	9.0
..	..	..	1977	1979	1980	0.5	2.5
..	..	..	1978	1979	1980	0.5	1.5
..	..	Yes (T)	1977	1978	1979	1.0	4.0
..	..	..	1978	1979	1980	0.5	2.5
..	Not	Not	1976	1977	1978	2	13
..	..	Not	1976	1978	1979	4	16
..	..	Yes	1975	1976	1977	5	35
I.D.C.	Not.	Not.	1977	1978	1979	1	15
I.D.C.	..	Yes	1976	1977	1978	2	23
..	..	..	1977	1978	1979	2	5
..	..	No.	1977	1978	1979	1	3
..	..	..	1975	1977	1978	0.25	1.0
..	No.	No.	1977	1978	1978	0.5	1.5

(1)	(2)	(15)	(16)	(17)	(18)	(19)
1.	Asbestos Complex.	70.0	50.0	A new public ltd. co.,	Joint Sector project	Two third of cost of the project
2.	Power-Transformers.	200.0	75.0	Do.	Do.	Do.
3.	Medium-size Paper Plant	150.0	30.0	Do.	Do.	Do.
4.	Pulp & Paper mill.	1,500.0	400.0	Do.	Do.	Do.
5.	Leather & footwear.	80.0	10.0	Do.	Do.	Do.
6.	Phthalates.	24.0	2.5	Do.	Do.	Do.
7.	Propd calcium.	45.0	6.0	Do.	Do.	Do.
8.	Cattle feed.	45.0	2.0	Do.	Do.	Do.
9.	Oxygen & Acetyline.	18.0	2.0	Do.	Do.	Do.
10.	Cold rolled straps & box strappings.	30.0	5.0	Do.	Do .	Do.
11.	Nickel cudmim cells.	45.0	5.0	Do.	Do.	Do.
12.	Brake & clutch liners.	51.0	30.0	Do.	Do.	Do.
13.	Collapsable tubes.	90.0	5.0	Do.	Do.	Do.
14.	Bread & Biscuits.	20.0	2.0	Do.	Do.	Do.
15.	Solvent Extraction unit.	20.0	2.0	Do.	Do.	Do.
16.	Granulated mixed Fer- tilisers.	24.0	3.0	Do.	Do.	Do.
17.	Textile Processing unit.	45.0	5.0	Do.	Do.	Do.
18.	Bicycle tyres and tubes.	20.0	2.0	Do.	Do.	Do.
19.	Moulded plastic goods.	21.0	2.0	Do.	Do.	Do.
20.	Razor blades.	20.0	5.0	Do.	Do.	Do.
21.	Flour Mill	10.0	2.0	Do.	Do.	Do.
22.	Phthalate Nnhydride.	120.0	15.0	Do.	Do.	Do.
23.	Textile Mills.	160.0	20.0	Do.	Do.	Do.
24.	Electric Motors.	120.0	40.0	Do.	Do.	Do.
25.	Synthetic Detergents.	40.0	4.0	Do.	Do.	Do.
26.	H. T. & L. T. Insu- lators.	75.0	50.0	Do.	Do.	Do.
27.	Shoddy Mill.	20.0	8.0	Do.	Do.	Do.
28.	Steel Furnitures.	20.0	1.0	Do.	Do.	Do.
29.	Street light Fittings.	8.75	..	Do.	Do.	Do.
30.	Gypsum Board.	7.0	1.0	Do.	Do.	Do.

(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
N.A.	Tons 320	Tons 1,350	400	5	20	25	250	600
Do.	1,064	1,500	200	4	46	40	180	100
Do.	1,100	1,900	200	25	50	25	125	175
Do.	20,400	33,750	1,000	20	80	100	800	1,500
Do.	540	900	100	5	10	25	100	80
Do.	165	300	60	5	15	10	40	50
Do.	140	550	80	5	15	10	50	100
Do.	305	500	80	5	15	10	70	80
Do.	136	225	40	2	15	8	40	10
Do.	190	300	100	5	10	15	140	50
Do.	330	180	250	10	30	10	150	100
Do.	422	850	40	2	7	10	50	15
Do.	140	230	40	5	15	10	20	50
Do.	140	225	60	5	5	10	30	50
Do.	137	230	60	5	10	5	40	60
Do.	165	270	150	10	15	25	80	120
Do.	572	810	100	5	25	30	100	80
Do.	113	180	25	5	5	5	10	15
Do.	113	180	15	2	3	5	7	8
Do.	140	216	30	2	3	5	30	10
Do.	85	135	40	5	5	5	20	30
Do.	750	1,350	150	10	40	25	125	50
Do.	1,060	1,800	1,500	40	160	200	1,200	2,400
Do.	1,100	1,800	400	10	40	50	300	200
Do.	330	550	80	10	20	50	50	75
Do.	820	1,350	500	15	60	75	450	300
Do.	190	350	100	10	25	15	75	125
Do.	136	225	75	5	10	20	40	50
Do.	55	90	25	1	4	10	25	10
Do.	45	70	20	2	4	4	10	10

(1)	(2)	(3)	(4)	(5)	(6)
					(Rs. in lakhs)
1.	Forged Rand Tools.	Telangana	New	500 tpa	Profile ready
2.	Al. foils & extruded sections.	Do.	Do.	1,000 ton.	No.
3.	Printed circuits.	Do.	Do.	..	..
4.	Medium size Paper Plant.	Do.	Do.	25 tpd	Yes
5.	Composite wollen mill.	Do.	Do.	..	..
6.	Textile mill.	Do.	Do.	..	..
7.	Memory planes and stacks.	Do.	Do.	..	No.
8.	Straw Paper products.	Do.	Do.	20 tpd	No.
9.	Vanaspati.	Do.	Do.	50 tpd.	Yes
10.	Permanent magnets.	Do.	Do.	100 tpa	Yes
11.	Bicycle parts.	Do.	Do.	500 tons	No
12.	Pressure die castings.	Do.	Do.	600 tpa	Yes
13.	Hacksaw Blades.	Do.	Do.	250 tpa	No
14.	Granulated Mixed fertilisers.	Do.	Do.	45,000 tpa	Yes
15.	Leaf spinings & coils.	Do.	Do.	100 tpa	No
16.	Reclaimed rubber.	Do.	Do.	1,000 tpa	No
17.	Mechanised brick making plant.	Telangana	New	10 mil. bricks para.	No
18.	Benefication of Kayanite.	Do.	Do.	..	No
19.	Dimethyl formal dehyde.	Do.	Do.	2250 tpa	Yes
20.	No Carbon paper.	Do.	Do.	..	No
21.	Sorbitol.	Do.	Do.	..	No
22.	Di-methyl Chloro-Tetra cycline.	Do.	Do.	..	No
23.	Vaccum Metulising unit.	Do.	Do.	100 tpa	Yes
24.	Export Oriented Moulded Furniture.	Do.	Do.	..	No
25.	Cattle Feed.	Do.	Do.	5 tpa	Yes
26.	Solvent extraction.	Do.	Do.	50 tpd	Yes
27.	Textile processing unit.	Do.	Do.	25,000 spindles	No
28.	Shoddy mill.	Do.	Do.	..	No

(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
APIDC	No	No	1977	1978	1979	2	13
..	No	No	1977	1979	1980	5	10
..	No	(T)	1975	1977	1978	5	20
..	..	..	1978	1980	1981	2	15
..	No	..	1977-78	1978-79	1979-80	2	10
..	No	No	1976	1978	1979	2	8
..	..	(T)	1976	1977	1978	1	9
..	No	No	1977	1979	1980	5	10
APIDC	..	No	1977	1978	1979	1	5
..	..	No	1975	1976	1977	1	5
..	..	Ni	1977	1978	1979	1	6
APIDC	..	No	1977	1978	1979	1	4
..	No	No	1976	1978	1979	2	13
..	..	No	1978	1979	1979	1	2
..	..	No	..	..	..	1	4
APIDC	..	No	1977	1978	1979	1	5
..	..	(T)	1977	1978	1979	1	5
..	..	Yes	1977	1978	1979	1	6
..	..	No	1978	1979	1980	1	9
APIDC	..	(T)	1975	1977	1978	2	18
..	..	No	..	..	..	1	4
APIDC	..	No	1976	1977	1978	0.5	7.5
APIDC	..	No	1976	1977	1978	1	2
..	..	No	1976	1977	1978	1	9
..	..	No	1977	1978	1979	2	5
APIDC	..	No	1976	1977	1978	1	4
..	..	No	1978	1979	1980	0.5	2.5
..	..	No	1976-77	1977-78	1978-79	2	8

(1)	(2)	(15)	(16)	(17)	(18)	(19)
		Rs. in lakhs	Rs. in lakhs	New Public Ltd. Co.	Joint Sector Project	Two. third of the cost of the project.
1.	Forged Rand Tools.	70	15	Do.	Do.	Do,
2.	Al. foils & extruded sections.	250	35	Do.	Do.	Do.
3.	Printed circuits.	80	15	Do.	Do.	Do.
4.	Medium size Paper Plant.	270	13	Do.	Do.	Do.
5.	Composite wollen mill.	275	13	Do.	Do.	Do.
6.	Textile mill.	80	10	Do.	Do.	Do.
7.	Memory planes and stacks.	60	10	Do.	Do.	Do.
8.	Straw Paper products.	70	10	Do.	Do.	Do.
9.	Vanaspati.	40	4	Do.	Do.	Do.
10.	Permanent magnets.	30	4	Do.	Do.	Do.
11.	Bicycle parts.	33	10	Do.	Do.	Do.
12.	Pressure die eastings.	20	5	Do.	Do.	Do.
13.	Hacksaw Blades.	70	10	Do.	Do.	Do.
14.	Granulated Mixed fertilisers.	20	2	Do.	Do.	Do.
15.	Leaf spinings & coils.	20	5	Do.	Do.	Do.
16.	Reclaimed rubber.	13	2	Do.	Do.	Do.
17.	Mechanised brick making plant.	12		Do.	Do.	Do.
18.	Benefication of Kayanite.	40	5	Do.	Do.	Do.
19.	Diemthyl for mal dehyde.	30	4	Do.	Do.	Do.
20.	No Carbon paper.	34	10	Do.	Do.	Do.
21.	Sorbitol.	40	3	Do.	Do.	Do.
22.	Di-methyl Chloro-Tetra cycline.	80	10	Do.	Do.	Do.
23.	Vaccun Metulising unit.	30	15	Do.	Do.	Do.
24.	Export Oriented Moulded Furniture.	25	..	Do.	Do.	Do.
25.	Cattle Feed.	45	2	Do.	Do.	Do.
26.	Solvent extraction.	20	2	Do.	Do.	Do.
27.	Textile processing unit.	45	5	Do.	Do.	Do.
28.	Shoddy mill.	20	8	Do.	Do.	Do.

(20)	(21)	(22)	(28)	(24)	(25)	(26)	(27)	(28)
N.A.	720 ton.	470 ton.	400	5	25	50	600	200
Do.	1,400 ton	230 ton	400	20	80	50	250	400
Do.	480	775	200	5	20	25	250	100
Do.	1,640	2,700	220	15	25	30	130	156
Do.	1,640	2,700	1,100	100	150	150	600	800
Do.	550	900	800	20	80	100	600	1,200
Do.	290	450	300	10	40	50	500	100
Do.	550	820	150	5	40	15	125	175
Do.	275	470	120	10	50	15	75	100
Do.	150	216	30	2	8	10	40	10
Do.	190	300	30	2	8	10	45	10
Do.	140	230	30	5	10	5	25	15
Do.	420	720	150	5	15	20	210	50
Do.	140	130	130	15	45	25	75	100
Do.	140	225	40	2	8	10	60	20
Do.	100	185	50	5	10	5	30	50
Do.	74	120	30	2	5	8	35	15
Do.	250	410	40	5	15	10	30	40
Do.	220	370	50	5	15	10	40	30
Do.	150	279	60	5	10	10	100	25
Do.	250	410	100	5	35	10	125	75
Do.	580	950	200	10	70	20	250	150
Do.	232	324	100	5	20	25	140	50
Do.	100	160	50	5	10	15	60	30
Do.	305	500	80	5	15	10	70	80
Do.	137	230	60	5	10	5	40	60
Do.	512	810	100	5	25	30	100	80
Do.	190	850	100	10	25	15	75	125

(1)	(2)	(3)	(4)	(5)	(6)
29.	Agricultural implements.	Telengana	New	..	Yes
30.	Machine tool accessories	Do.	Do.	..	No
31.	Footwear and leather goods.	Do.	Do.	..	No
32.	Tool & Allow Steel.	Do.	Do.	..	No
33.	Chemical & Pharmaceuticals.	Do.	Do.	..	No.
34.	Textile Mills ..	Do.	Do.	..	No.
35.	Gears	Do.	Do.	..	No.
36.	Electric Home Appliances.	Do.	Do.	..	No.
37.	Cellulor Concrete ..	Do.	Do.	..	No.

(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
APIDC	..	No	1976	1977	1978	1	7
..	..	(T)	1976	1978	1979	1	4
..	..	No	1977	1978	1979	1	4
Do.	No	No.	1977	1978	1979	10	40.0
..	..	Yes	1977	1978	1979	2	18.0
..	..	No	1977	1978	1979	2	8
..	1975	1976	1977	3	27
..	..	No	1975	1976	1977	0.50	4.50
..	..	No	1977	1978	1979	0.05	2.5

(1)	(2)	(15)	(16)	(17)	(18)	(19)
29.	Agricultural implements	Lakhs. 25	Lakhs. ..	New Public Ltd. Co. Do.	Joint Sector Project. Do.	Two third of the cost of the project.
30.	Machine tool accessories.	45	2	Do.	Do.	Do.
31.	Footwear and leather goods.	80	10	Do.	Do.	Do.
32.	Tool and Allow Steel.	400	50	Do.	Do.	Do.
33.	Chemical and Pharma- ceuticals	150	30	Do.	Do.	Do.
34.	Textile Mills.	80	10	Do.	Do.	Do.
35.	Gears.	270	..	Do.	Do.	Do.
36.	Electric Home Appliances.	20	..	Do.	Do.	Do.
37.	Cellulor Concrete.	35	2	Do.	Do.	Do.

(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
N.A.	Tons.	Tons.						
Do.	140	216	60	2	5	13	50	50
Do.	226	360	60	5	5	10	40	40
Do.	540	900	100	5	10	25	100	80
Do.	2,800	5,800	400	20	40	40	035	450
Do.	1,100	1,900	350	25	45	80	150	200
Do.	530	900	800	20	80	100	600	1,200
Do.	1,664	2,700	150	10	40	50	150	50
Do.	112	180	60	2	5	18	75	25
Do.	120	500	150	10	20	30	60	80

16. MINERAL DEVELOPMENT.

Andhra Pradesh ranks sixth in mineral production in the country. In terms of higher trends in mineral production anticipated by 1979-80, the total value of mineral production has steadily grown upto Rs. 7.71 crores in 1971-72. The anticipated value of mineral output by 1979-80 is estimated to be Rs. 25 crores.

Mineral Department is being dealt both by the Department of Mines and Geology and the Andhra Pradesh Mining Corporation.

DEPARTMENT OF MINES & GEOLOGY

REVIEW :

The department of Mines and Geology carries out basic surveys of mineral belts, the objective being to throw light on resource potential. During the Fourth Plan period a good bit of ground was covered, and one of the achievements was bringing to light the bauxite belt of Visakhapatnam District. Detailed work conducted so far by this Department as well as by the Geological Survey of India indicates a reserve of the order of 20 million tonnes of bauxite. This could form the basis for industrialisation of this belt as would promote the development of backward region (tribal belt) in the agency areas, when an alumina/aluminium plant is established.

Detailed investigations are in progress for the estimation of reserves of high grade limestone belts of Kurnool District and the clay deposits of Cuddapah District, graphite deposits in the agency tracts of Khammam, West and East Godavari, Visakhapatnam and Srikakulam districts. Portions of Khammam, East and West Godavari districts have been covered so far. It is interesting to mention in this connection the association of wolframite with the graphite, a mineral that is in extreme short supply, as an alloying metal. Some investigations were carried out on the beneficiation of kyanite from Khammam district. The estimation of the reserves is of the order of 25 million tonnes of kyanite bearing schists and more investigations are necessary to establish its grade by intensive beneficiation studies. Detailed mapping of the Mangampeta barytes belt has been carried out and has to be pursued by drilling.

Intensive programme for proving reserves of iron ore for the Sponge Iron Plant proposed to be located in Khammam district is being carried out. Drilling is being carried out for dolomite and limestone in different parts of the State for the proposed steel plant at Visakhapatnam.

Statement

PROGRAMME DETAILS :

During Fifth Plan schemes costing Rs. 136.50 lakhs are Contem Plated, the details of which are given blow :

S. No.	Schemes	Cost (Rs. in lakhs.)
1.	Exploratory Mining	42
2.	Intensification of drilling work	6
3.	Prospecting and regional survey	30
4.	Expansion of laboratory, library etc.	8
5.	Organisation :	
	(a) Strengthening of Head Office and Regional Office	23
	(b) Vehicles	5
	(c) Accommodation	7.5
6.	Feeder Roads	15
	Total	136.5

A brief description of the above schemes is given below:

(1). *Exploratory Mining (Asbestos, Bauxite, Steatite & Graphite)*

Three units are proposed for carrying out exploratory mining for bauxite, steatite, slate, graphite and asbestos, the purpose of the scheme being to provide basic data about the behaviour of the ore body as indicated by drilling and prospecting. This will go to confirm the results of prospecting done earlier and pave the way for actual mining. It is expected that one unit will be able to carry out the exploratory mining for bauxite in Raktakonda, the same redeployed for the mining of steatite in Anantapur District. It will be necessary to station the unit in steatite field for some time in order to open up the new deposits expected to be the continuation of the present workings. This is essential since it is a raw material which is sought after by the Defence Metallurgical Research Laboratory, and they are experiencing some difficulties in meeting their requirements.

Asbestos mapping has been carried out in detail in the Valasala area, Kurnool District. This will be followed by a few shallow drill holes and proving of the deposits will be continued by exploratory mining. It is proposed to cover the entire belt that is likely to be asbestos bearing in Kurnool, Anantapur and Cuddaph districts, wherever there are no existing mines. One exploratory mining unit will be tied up in with absestos explorations.

The third unit for exploratory mining will be deployed for opening up slate deposits. Detailed assessment of the slate belt over a considerable extent has already been completed and it is proposed to open up a model mine so as to facilitate private parties to follows scientific methods of mining. This will prevent wastage in workings

and conserve the deposits reducing hazards to mine labour to the minimum. After conclusion of exploratory mining of slate, the prospects being proved for graphite in Telangana and Coastal Andhra Regions will be opened up by the deployment of this unit for extensive explorations.

These units would cost a capital outlay of 12 lakhs at 4 lakhs per unit and running costs including pay and allowances would cost 2 lakhs per annum per unit *i.e.*, 30 lakhs for 5 years. The total outlay towards three exploratory mining units would be Rs. 42 lakhs.

(2) *Intensification of drilling work :*

In the areas where mineral potentiality has to be proved by exploratory drilling a considerable amount of drilling is being carried out by the Department at present. To fulfil additional targets of drilling it is proposed to run the existing drills of the Department on two shifts to avoid unnecessary purchase of extra drills. It is also proposed to purchase two trucks so that each drill unit can be shifted independently without depending upon public transport system. Besides, these vehicles will be useful for obtaining supplies, repairs etc. This would involve an additional expenditure of Rs. 6.00 lakhs for five years.

(3) *Prospecting and Regional Survey :*

Andhra Pradesh has vast reserves of limestone accounting for about 35% of India's total potential. While a few areas are being mined, there are considerable areas about which hardly any data are available of their variation in quality. Emphasis should be to cover maximum possible extents covered by the limestone basins of Cuddpah, Kurnool, Anantapur, Nalgonda, Khammam, Warangal, Adilabad and Hyderabad by intensive sampling, with a few strategically located drill holes to supplement data that has already been obtained from various sources.

Needless to say that since most of the easily accessible deposits have already been tapped, the discovery of any new deposits depends upon utilisation of sophisticated techniques involved, more equipment and man power.

A resurvey of the byrates belt has been included in the future programme of this Department so that we have a more realistic and up-to-date estimate of the reserves.

It is proposed to take up regional survey for phosphorite to provide the basic data about the sedimentary basin, its associated limestones, and possibly phosphorites bearing phosphorus that could be assessed. This would involve an employment of 46 post Graduates in geology and is expected to cost Rs. 30 lakhs.

(4) *Expansion of Laboratory :*

It is also proposed to take up regional geo-chemical studies to locate the base metal and wolframite. This would involve analysis of several thousand soil and water samples. To complete the assignments

on hand, the Department Laboratory will have to be strengthened both in the geophysics and the chemistry wings. Also museum and library will have to be expanded suitably to afford necessary consultative facilities. This would involve an employment of 5 Post Graduates in chemistry, one in geophysics and one in ore dressing. This scheme is expected to cost Rs. 8 lakhs.

(5) *Organisational set up:*

Two new regional offices have been proposed in Telangana and Rayalaseema Regions with corresponding supervisory officers. There will be a corresponding increase in the administrative staff as well to handle additional work-load of head office and regional offices of the Department at a cost of Rs. 23 lakhs. It is proposed to purchase four pick up vans and two jeeps for the movement of the officers. This would cost Rs. 5 lakhs. All this, would require additional accommodation. Provision of Rs. 7.5 lakhs is proposed to accommodate the additional officers, staff and laboratory etc.

(6) *Feeder Roads :*

A provision of Rs. 15 lakhs has also to be made for infrastructural development of intensive mining areas by necessary provision towards feeder roads in the dearth of which transport of minerals is very much hampered.

With the implementation of the said schemes there will be a direct employment potential of 291 persons. This including 68 persons with post graduate Electrifications in Geology and Chemistry, 8 with post graduate qualification in Mining and ore Dressing, 30 Diploma holders in Engineering, 21 Industrial Engineering Institution Certificate holders and 169 other categories.

ANDHRA PRADESH MINING CORPORATION.

REVIEW :

During the Fourth Plan period a provision of Rs. 37.69 lakhs was made by the Government for investment in the equity capital of the Corporation. In addition an amount of Rs. 5.00 lakhs was separately released for investment in a joint venture for manufacture of graphite crucibles. An amount of Rs. 7.00 lakhs is also proposed for release from the special Rayalaseema Development Funds during 1973-74.

The activities of the Corporation during Fourth Plan period can be said to have laid stress on consolidation of the spill over schemes with opening up of new mines in a limited way. Mining for asbestos which has been an important activity of the Corporation was continued, and as against one mine at the beginning of the plan period, three mines are under operation towards the end of the Plan period. The asbestos production which was standing at 100 tonnes in the beginning of the Plan period is expected to reach 350 tonnes by the end of the Plan period. It may be mentioned that asbestos mining has led to considerable saving of foreign exchange as this mineral is being imported to subserve the requirement of the end users.

The Corporation also continued the operation of its quartz mine and glass and processing unit in the Mahabubnagar district continued as spill over schemes during the Fourth Plan. The Corporation successfully met the requirements of high tension and low tension insulator manufacturers in Tamil Nadu and Mysore States and glazed tile manufacturers in Maharashtra. It also met the requirements of the graphite crucible manufacturers in Andhra Pradesh. A new fire clay mine was opened in East Godavari district and the Corporation met the requirements of refractory glass manufacturers in Andhra Pradesh and Tamil Nadu States.

Apart from the above mineral production projects preliminary work on promotion of mineral based industries, particularly graphite crucibles, titania, refractories, fibre glass and asbestos based products was taken up.

A joint venture promoted by the Corporation for mining and processing of marble in Khammam district continued to operate during the plan period. A promotional agreement covering a joint venture with a private industrialist for mining and beneficiation of graphite was also entered into and significant progress is expected to be made by the end of 1973-74. This project is primarily oriented to make the country self-sufficient for its requirements of crucible grade graphite.

The Corporation experienced many difficulties during the Plan period. Firstly due to financial constraints the pace of development work in the mine, which is necessary before any mine becomes productive could not be stepped up. Secondly, the acute power shortage which became prevalent from about the middle of 1972-73 had serious effect on some of the operations of the Corporation where essential mine operations like de-watering in underground mines were entirely dependent on power availability. The Corporation, however, partly over-come the difficulty by procuring diesel generating sets from other governmental agencies. This, however, meant additional investment which further strained the meagre resources of the Corporation. Thirdly, the work of the Corporation was also restrained to some extent by the investigation work not being completed.

OBJECTIVES :

Broadly, the objectives of the Corporation can be summed up as follows :

- (a) to undertake investigation of minerals of importance to the economy of the State ;
- (b) to take up projects which will lead to economic exploitation of major minerals which are of crucial importance to the State's economy ;
- (c) to produce the raw material minerals which are of importance to Government and Government sponsored undertakings ;
- (d) to promote industries based on minerals in collaboration with the APIDC and the private sector ;

- (e) to provide facilities for the education of the mine-owners in proper and systematic mining techniques ;
- (f) to make available essential mining equipment and laboratory facilities for testing etc., as custom service to such mine-owners ;
- (g) to organise research and development relating to mining.

In achieving these objectives the prime importance of providing employment would be borne in mind and employment-oriented projects would be given special preference. These objectives are spelt out in greater detail in the following paragraphs.

The Andhra Pradesh Mining Corporation has been planning its projects essentially on the basis of investigation reports and exploration results of the Geological Survey of India and the State Department of Mines and Geology. It will be conceded that any project of the Andhra Pradesh Mining Corporation for exploitation of the minerals will have to be inevitably and necessarily based on proper investigation reports of the reserve. Minerals do not behave to order and will exhibit eccentricities and singularities that Nature has ordained. The element of risk attendant with mining operation can never be over-emphasised, and if the Public Exchequer has to be properly and intelligently invested in mining operations, investigation reports of a fairly high quality are a 'must'. It has been the experience of the Corporation that the programme of investigation for minerals of the Geological Survey of India has not been generally in tune with the priorities of the Corporation. It is, therefore, proposed to set up an exploration wing for the Mining Corporation with competent geologists and technical personnel to undertake investigation of minerals of importance to the economy of the State. This activity will, of course, be supplemented by the exploration programmes of the G.S.I. and the State Department of Mines and Geology.

One of the main objectives of the Corporation is to locate major minerals and to take up mining of these after proper investigation. Such items should be generally those which are beyond the financial capacity of private mine-owners. In other words, the minerals should be those which are not only critical from the point of the States economy, but also those which do not lend themselves to facile exploitation without a sizeable investment. The general approach which is sought to be followed in the Fifth Five Year Plan and even later will be to take up projects of fairly big magnitude which will lead to economic exploitation of major and critical minerals and which would help the State's economy to move forward.

The Mining Corporation should also attempt to produce some of the important raw material minerals to cater to the Government undertakings and Government sponsored undertakings entirely. To illustrate, the Mining Corporation proposes to explore quickly, the flux grade limestone and dolomite deposits in Krishna and Khammam districts for supply to the Vizag Steel Plant which will commence drawing its requirements from about 1978-79. Organisation of these mines to enable the Corporation supply large quantities of limestones and dolomite to the steel plant will be one of the major objectives during

the Fifth Plan period. Likewise, the Corporation should take up exploitation of minerals of interest to other public sector undertakings and Government sponsored industrial units.

Mining of minerals and selling the same cannot obviously be an end objective itself. It should be the endeavour of the Corporation to also promote mineral based industries. A.P.M.C. therefore proposes during the Fifth plan, to promote industries based on minerals in collaboration with the A.P. I.D.C. and the private sector, so that the mineral wealth of the State could as far as possible be utilised within the State and at the same time will engender employment.

Optimum return from the mines can be had only through systematic and scientific methods of mining of minerals. It is noticed in the State that many mine-owners for want of technical and financial assistance have not taken to modern methods of mining. Therefore one of the objectives of the Corporation is education of the mine-owners in proper and systematic mining techniques. The necessity for the establishment of a technical cell need not, therefore, be over emphasised. The technical cell that is sought to be formed by the Corporation would have technically competent and experienced officers like Mining Engineers, Geologists and Mineral Processing technicians who would advise and assist the mine-owners in systematic exploitation of the minerals and adopt better methods of processing and utilisation of minerals. It is also proposed to pool essential mining equipment and make it available for those in need on a rental basis. In addition, a modern testing laboratory will be set up which will be equipped suitably to take up qualitative testing of minerals and to tender counsel for utilisation of the minerals in promotion of industries. The Mining Corporation also proposes to organise a Research and Development Cell to periodically review the methods of mining and processing and to evolve improved methods.

Employment oriented mining activities will be preferred by the Corporation if efficiency will not be sacrificed as a consequence and productivity is maintained at economic levels. It is well known that mechanisation of the mines is generally conducive to better productivity and efficiency. But in view of the nations' approach in this regard it is felt that employment oriented projects should get a special preference.

PROGRAMME DETAILS :

The existing schemes of the Mining Corporation will be continued till the reserves of the minerals are exhausted or till they reach a stage when economic mining of the minerals ceases. The programmes of the Corporation, as already indicated will be constrained by the investigation reports available to the Corporation. The Corporation would endeavour to set up projects on the basis of the investigation reports of the G.S.I. and the State Directorate of Mines and Geology. An indication is given herein below of the specific projects which are likely to be handled by the Corporation during the Fifth Plan period and an outlay of Rs. 3.66 crores is made in the State Plan for this purpose. They include some of the important running projects and the new schemes on the cards of the Corporation. These essentially are patterned on

the objectives of the Corporation. The financial allocations may be summarised as follows :

To sum up the investments proposed under spill-over schemes and new projects are as given below :

<i>Spill-over</i>	<i>Schemes :</i>	<i>outlay</i> (Rs. in lakhs)
1. Brahmanapalle asbestos mine, Cuddapah dist. ..		2.00
2. Ramanuthalapalle asbestos mine Cuddapah dist. ..		12.00
3. Velidandla asbestos mine (Central) Cuddapah dist. ..		10.00
4. Asbestos Processing Plant, Cuddapah dist. ..		10.00
5. Glass sand unit, Elkatta Mahabubnagar dis'. ..		8.00
6. Clay washing plant, D. Tirumala W.G. dist. ..		2.00
	Total :	44.00

New

1. Velidandla asbestos mine, (West) Cuddapah dist. ..	10.00
2. Velidandla asbestos mine (East), Cuddapah dist. ..	10.00
3. Asbestos based products Unit, Cuddapah ..	5.00
4. Flux grade dolomite mining, Khammam dist. ..	25.00
5. Iron ore mining, Khammam dist. ..	20.00
6. Copper mining and preliminary concentration, Khammam district ..	38.00
7. Graphite crucibles, Khammam dist. ..	10.00
8. Bauxite mining and alumina project, Vizag dist. ..	50.00
9. Ilmenite mining, Srikakulam dist. ..	10.00
10. Graphite mining and beneficiation, Srikakulam dist.	10.00
11. Fire Clay refractories, East Godavri dist. ..	30.00
12. Flux Grade limestone, Krishna dist. ..	123.00
13. Technical cell,	15.00
14. Research, Development and Exploration Cell ..	10.00
	Total :
	366.00

SPILL OVER SCHEME :

(1) *Asbestos Project, Brahmanpalle, Cuddapah district :*

The maiden asbestos mining project was taken up by the Corporation during 1965-66 at Brahmanapalle. The mine has reached a production level of 230 tonnes by the end of 1971-72 and is estimated to reach

production level of 300 tonnes by the end of 1972-73. The production is valued at about Rs. 12 lakhs.

The working vertical depth of the mines by 1973-74 is estimated at 350 ft. In addition to the investments proposed till 1973-74, an additional investment Rs. 2 lakhs is proposed for a vertical shaft and for headgear for the hoisting equipment.

(2) *Asbestos mining project, Ramanuthalapalle, Cuddapah district :*

The project was taken up by the Corporation during 1970-71 and is estimated to reach a level of production of 100 tonnes of asbestos by the end of 1973-74. The production is valued at Rs. 3.8 lakhs. In addition to the investment proposed upto the end of 1973-74, a spill-over investment of Rs. 12 lakhs is proposed between 1974-75 and 1975-76 towards additional equipment and civil works. The value of the annual production is estimated to reach Rs. 12 lakhs by 1974-75.

(3) *Asbestos project Velidandla (Central), Cuddapah district :*

The Corporation has commenced exploratory mining operations based on the recommendations of the G.S.I. and the Indian Bureau of Mines during 1972-73. This phase of the programme is estimated to be completed by the end of 1973-74. Thereafter depending on the outcome of the exploratory operations, commercial mining will be taken up. In addition to the investment proposed till the end of 1973-74, a total investment of Rs. 10 lakhs is proposed between 1974-75 and 1975-76 on the project towards equipment and civil works :

(4) *Asbestos processing Unit : Cuddapah district :*

Processing of asbestos is now being done with a set up of improvise mechanical devices, with some of the stages in the processing still being done manually. Though the product is known to be much better than what it was a few years ago when the processing was entirely manual, the need for further improvement and better fabrication of the fibre has been recognised and it is proposed to set up a processing unit perhaps on the lines of the unit designed and set up by M/s. Hyderabad Asbestos Cement Products Ltd., in Roro, Bihar. After taking into account the investment proposed till the end of 1973-74 an additional investment of Rs. 10 lakhs is proposed between 1974-75 and 1975-76.

(5) *Glass sand Unit, Shadnagar, Mahbubnagar district :*

The Corporation has been operating a glass sand unit at Elakatta near Shadnagar, Mahabubnagar district. A review of the operational efficiency of this unit revealed that improvements could be made in maximising the yield of the sand between the limits of mechanical composition suitable to the market. A consultancy organisation is commissioned to give a feasibility report on this. After this is received a more sophisticated unit is proposed to be set up. For this purpose, an amount of Rs. 10 lakhs is proposed as investment during 1974-75.

(6) *Clay levigation unit, Dwaraka Tirumala, West Godavari district :*

The Corporation has been operating a clay washing unit at Dwaraka Tirumala, West Godavari district. It was observed that the washed clay was not conforming to the ISI standards. A consultancy organisation is commissioned to study the existing set up and advise about the modifications necessary. After the report is received the Plant will be suitably modified. An additional investment of Rs. 2 lakhs is proposed for this purpose during 1974-75.

NEW SCHEMES :

(1) *Velidandla Asbestos Project, (West) Cuddapah district :*

The G.S.I. have investigated this area by pitting and drilling. The Indian Bureau of Mines after a study of the data collected by the G.S.I. and after an actual field investigation recommended exploratory mining operations being taken up in this area. The Corporation proposes to take up exploratory mining operations in this area during 1974-75 and based on the results of the same, commercial operations will be taken up. A total investment of Rs. 10 lakhs is proposed for the two phases of operations between 1974-75 and 1976-77.

(2) *Velidandla (East) Asbestos Project, Cuddapah district :*

The G.S.I. conducted investigations by pitting and trenching in this area. During 1973-74 they propose to take up drilling in this area for collection of detailed data on the mineralisation and controls of the mineralisation. This will have to be followed by exploratory mining operations. Based on the exploratory mining operations commercial operations will have to be taken up. The Corporation, proposes to take up exploratory mining operations followed by commercial operations from 1974-75. A total investment of Rs. 10 lakhs is proposed spread over three years commencing from 1974-75.

(3) *Asbestos-based products, Cuddapah district :*

Chrysotile asbestos is produced now only from Andhra Pradesh. Mining for asbestos has formed and still continues to form an important part of the Corporation's programmes. Based on the fibre produced, it is proposed to promote a unit for manufacture of brake-linings. The unit is estimated to have a capacity of 300 tonnes per annum involving a capital investment of Rs. 30 lakhs. The promoters' share capital is taken as Rs. 5 lakhs, which is accordingly shown as requirement against this project during 1974-75.

(4) *Flux grade dolomite mining project, Yellandu, Khammam district :*

The requirements of the Visakhapatnam Steel Plant of flux grade dolomite are estimated at 2.5 lakh tonnes per annum. The Geological Survey of India and the State Department of Mines and Geology have located a deposit with an indicated reserve of 15 million tonnes near Yellandu in Khammam district. The actual consumption of dolomite is expected from 1978-79. However, building up of a production capacity of 2.5 lakh tonnes a year will have to be done in a phased programme. It is, therefore, proposed to take up mining operations commencing from 1976-77. A total investment of Rs. 25 lakhs is proposed between 1976-77 and 1978-79.

(5) *Iron ore Mining, Khammam/Warangal districts :*

The Andhra Pradesh Industrial Development Corporation Ltd., had finalised a project for manufacture of sponge iron. The unit is to be located near Kothagudem. The iron ore requirements of this project are estimated at 60,000 tonnes per annum. The sources for the ore are located in Khammam and Warangal districts. It is desired that the mining and supply of the ore might be taken up by the Andhra Pradesh Mining Corporation. A capital investment of Rs. 20 lakhs is proposed for a two-year period between 1974-75 and 1975-76.

(6) *Copper Mining Project, Mailaram, Khammam district :*

The G.S.I. located and investigated a copper deposit near Mailaram about 25 kilometres from Kothagudem in Khammam district. After concluding the drilling programme, the G.S.I. have taken on hand a programme of exploratory mining. This is expected to be completed by the end of 1973-74. Depending on the results of the exploratory mining operations a commercial project for mining of copper ore and preliminary concentration is proposed. A total investment of Rs. 38 lakhs is proposed between 1974-75 and 1976-77.

(7) *Graphite crucible project (Location not decided) :*

The Corporation included a project for mining and beneficiation of graphite during the Fifth Plan period. Based on the graphite beneficiated it is proposed to promote a graphite crucible unit with a capacity of 2,000 tonnes per annum involving a capital investment of Rs. 70 lakhs. The unit is proposed to be promoted by the A.P.M.C. jointly with the A.P.I.D.C., National Metallurgical Laboratory and the National Research Development Corporation of India. This Corporation proposes to invest Rs. 10 lakhs out of the promoters' share capital.

(8) *Bauxite Mining and Alumina projects, Sunkarimetta, Visakhapatnam district :*

The Geological Survey of India and the State Department of Mines and Geology have located a sizeable bauxite deposit near Sunkarimetta about 60 miles from Visakhapatnam. Detailed investigation by pitting and drilling was undertaken by the two agencies and the work relating to a portion of the area has already been completed. Based on the work, it is reported that the grade of the ore would be suitable for manufacture of alumina and aluminium metal. The Corporation proposes to take up mining of bauxite and promotion of an alumina or aluminium unit based on the deposit. The ultimate output of bauxite is estimated at 1 lakh tonnes per annum.

The bauxite mined is proposed to be utilised for manufacture of alumina to the tune of 50,000 tonnes per annum. The capital investment envisaged is Rs. 5 to 6 crores. Out of the promoters' share capital of Rs. 1 crore, the Corporation proposes to invest Rs. 30 lakhs spread over two years from 1974-75 onwards. The Andhra Pradesh Industrial Development Corporation and the Orissa Mining Corporation are expected to participate to make up the balance of the Promoters' share capital.

(9) *Ilmenite mining project :*

The Corporation has examined some of the ilmenite occurrences along the east coast of the State in Srikakulam, Visakhapatnam, East Godavari and West Godavari districts after collecting some basic data from the Atomic Energy Department of the Government of India and the Indian Rare Earths Ltd., Bombay, a Government of India Undertaking. A proposal for promoting a titania unit based on the ilmenite deposits is under examination on the lines of the plant in existence in Kerala. An optimum unit for manufacture of titania is estimated to have a capacity of 4,800 tonnes per annum. The requirements of ilmenite is estimated at about 12,000 tonnes for annum. The mining operations will be in the nature of dredging for sand in the fore-shore zones of the coast and excavation by scrapers and shovels. The entire range of equipment will be of a portable nature since it would be necessary to shift the equipment from place to place along the coast. A total investment of Rs. 10 lakhs is proposed for this purpose spread over three years from 1975-76.

(10) *Graphite mining and beneficiation project, Khammam district :*

Occurrences of graphite are under detailed examination by the State Department of Mines and Geology. Reserves of considerable magnitude are expected to be proved during the next two years, particularly in Khammam, Visakhapatnam and Srikakulam districts. A project for mining of 10,000 tonnes of ore and to beneficiate the same to recover about 3,000 tonnes of concentrated graphite is under contemplation. The capacities mentioned for mining and beneficiation will be reached over a period of three years. A total investment of Rs. 10 lakhs is proposed between 1975-76 and 1976-77.

(11) *Refractory Products Unit, East Godavari district :*

The Corporation has already commenced mining for refractory fire-clay in East Godavari district. The clay is presently being supplied to manufacturers of fire bricks within and outside the State. With the advent of the steel plant at Visakhapatnam the demand for refractories is estimated to go up. To meet a part of the increased demand it is proposed to promote a unit with annual capacity of 20,000 tonnes. An investment of Rs. 30 lakhs is proposed by the Corporation.

(12) *Flux grade limestone project, Jaggayyapet, Krishna district :*

The requirements of Visakhapatnam Steel Plant of flux grade limestone are estimated at 6 lakh tonnes per annum. The G.S.I investigated an area in Jaggayyapet and proved a firm reserve of over 25 million tonnes. Additional drilling work as recommended by consultants to Visakhapatnam Steel Plant is also expected to be completed by the end of 1973-74. The actual consumption of limestone by the steel plant is expected to commence from about 1978-79. But to build up and stabilise a production capacity of 6 lakh tonnes per year, it would be necessary to develop the mine in a phased programme spread over four years. It is, therefore, proposed to take up mining operations from 1974-75. A total investment of Rs. 123 lakhs is proposed between 1974-75 and 1978-79.

(13) Technical Cell :

There are three important regions where mining activity is concentrated in the State, excluding the area of operation of Singareni Collieries Company Ltd. They are the Cuddapah, Kurnool, Anantapur, Visakhapatnam, Srikakulam and Nellore districts. A technical Cell is proposed to be organised initially located in Hyderabad. Depending on the work-load it develops more cells with regional locations may be considered. The proposed cell will have one Mining Engineer, one Geologist, one Mineral Dressing Engineer or ore Dressing Engineer and one Mines Surveyor with an administrative Office. The Cell will be equipped with essential pool of equipment consisting of portable compressors with accessories, surveying equipment and drilling equipment. A testing laboratory will also be attached to the cell. The laboratory will be manned by a qualified chemist with the requisite experience and other assistants. A capital investment of Rs. 15 lakhs is proposed.

(14) Research and Development and Exploration Wing :

The personnel employed in the technical cell in addition to assisting the private mine-owners can also take up study of the existing methods of mining and the specific case histories of individual mines with the objective of localising the reasons for failure of certain mines. The cell can then undertake evolution of improved methods of mining eliminating the areas of deficiencies noticed in the study.

Regarding exploratory work, a team consisting of three geologists assisted by a technical assistant and a surveyor can be considered. Two diamond drills with capacities of drilling upto 500 feet each manned by a drill Superintendent and assisted by a drill Mechanic each will have to be attached to the prospecting wing. It is estimated that a capital investment of Rs. 10 lakhs is proposed.

SPECIAL FEATURES :

The spill-over programme would continue employment opportunities for about 1,000 unskilled workers, every day in some of the backward districts like Cuddapah and Mahbubnagar in the State. The new projects proposed are expected to create fresh employment potential for about 3,000 unskilled workers every day in the State including some of the backward areas like Khammam and Agency tracts of Visakhapatnam and Srikakulam districts.

17. HANDLOOMS.

The approach to the Fifth Five Year Plan envisages launching of direct attack on the problem of unemployment and under-employment. The essential ingredient on this line of attack is the provision of employment opportunities or reducing unemployment on a large and wide scale to the extent necessary and make the efforts technically and administratively feasible. As far as Handloom industries are Concerned while the chances of appreciable increases in employment opportunities are very remote, reduction in the level of under-employment among the weavers would ensure a minimum level of income to the weavers.

REVIEW :

As against an allotment of Rs. 352.24 lakhs the anticipated expenditure in the Fourth Plan is estimated at Rs. 301.28 lakhs. There are about 5 lakhs of Handlooms in the State. These Handlooms are capable of producing 60 crore meters of cloth and on the basis of an average value of Rs. 2 per metre, the total value of goods to be produced in the State would come to Rs. 120 crores. As against the capacity for producing Rs. 120 crores worth of Handloom goods by the existing societies the actual production by the industry now is production of goods worth Rs. 40 crores. The monthly average earnings of weavers at present is Rs. 60 p.m. But for the prevailing under-employment the Handloom weaver would have earned about Rs. 180 per month. The low level of income clearly reflects the prevailing under-employment in the industry.

One of the reasons for the present plight of this industry is the decentralised nature of the industry. Handlooms are scattered in all the districts covering 50% of the villages in the State. Even at the village level all the looms do not work in one row and is carried on by the weavers in their houses. Therefore, the impact of plan schemes on such programmes is very insignificant. Efforts have been made to organise industries on co-operative lines. By the end of 1971-72 there were 810 primary weavers' co-operative societies in the State with a membership of 2,23,750. There has not been any increase in membership or organisation of societies during the Fourth Plan period. The reason is that assistance has not been made available to any appreciable extent for the organisation of new weavers' co-operative societies.

On the marketing side two important schemes are being implemented. One relates to providing assistance to apex and primary weavers to open sales depots, while the other relates to granting of rebates. Handloom cloth does not always find market at the production centres. Primary Weavers Co-operative Societies are not essentially strong. Therefore the Government have been giving assistance to Weavers Co-operative Societies both Primary and Apex to set up depots at Market centres. As a result of the establishment of the sales depots the sales of finished Handloom goods have increased from Rs. 8.20 crores at the end of 1961-62 to Rs. 10.15 crores at the end of 1971-72.

Another scheme being implemented for marketing of Handloom goods is the rebate scheme. The implementation of this scheme in this State is different from what is being followed in other States. While in other States rebate at 5 to 20% on sales of handloom cloth is allowed throughout the year with special rebate of 10% for 15 days on festival occasions, in Andhra Pradesh special rebate of 10% on sales of Handloom cloth on certain occasions covering a period of 45 days in a year is allowed. While this scheme has one definite advantage in the disposals of handloom cloth as it has the psychological attraction to the consumers to go in for handloom cloth, the result have, however, not been commensurate with the expenditure so far incurred. On an average Rs. 30 to 45 lakhs is being spent annually on this scheme. Still the industry has not yet stabilised itself and the weavers co-operative societies are clamouring for rebate. During the Fourth Plan period an expenditure of Rs. 169.78 lakhs would have been spent on rebate schemes.

One of the Socio-Economic activities undertaken by the department is to ameliorate the conditions of weavers by providing assistance for construction of Residential quarters. So far 25 schemes involving construction of 1337 houses have been sanctioned. These colonies have also been completed. No new scheme has however been taken up during the Fourth Plan period for want of funds.

The department is experiencing difficulties in recovering instalments from the weavers on account of the fact that while the instalment varies from Rs. 14 to 18 p.m. the monthly average income of weavers is only Rs. 60 p.m. In order to ensure loyalty of the members in the society a scheme called Matching Contribution of Thrift Fund to Weavers is taken up. Under this scheme Weaver Member of the Society is expected to remit 6 paise in every one rupee of wage he earns and there would be contribution of 2 paise by the Society and four paise from the Government. This amount is separately kept to be given to the member as a recoverable advance in times of needs, and paid to him ultimately when he becomes disabled or not fit for carrying on his work. The experience of the department has been that the weavers societies are not able to contribute their share under the scheme and therefore the implementation of the scheme is not very effective. An expenditure of Rs. 2.61 lakhs would have been incurred under this scheme during the Fourth Plan period.

The chief material required for the Handloom Weavers is yarn. There are at present six co-operative spinning mills in the State with a capacity to produce 20,000 to 25,000 bales of yarn only as against the requirement of 1 lakh bales for cotton looms in the Co-operative fold.

The working of some of the spinning mills is also not satisfactory because they do not command adequate working capital or margin money. In some cases the machinery installed is old or the machinery has become out dated and required modernisation and expansion. In the Fourth Plan period an amount of Rs. 8.50 lakhs was spent towards State participation in the Co-operative Spinning Mills.

(i) During Fourth Plan period, 12,400 powerlooms were allotted to the State. So far permission for only 4,000 powerlooms were given

If some of the schemes like allotment of powerlooms to educated unemployed materialise, there is scope for the utilisation of the entire allotment. Otherwise, there would still be a portion at least 5,000 looms left unutilised. For establishing 12,400 powerlooms roughly an amount of Rs. 6 crores is required. Since it is not possible to find an outlay of this order arrangements have been made to secure block capital from the financing institutions like commercial banks. The progress in the implementation of this scheme is very slow mainly for want of funds and limiting the activity only to the co-operative sectors. An expenditure of Rs. 34.00 lakhs is likely to be incurred on this programme during the Fourth Plan period.

OBJECTIVES :

The main objectives of the programme during the Fifth Plan under Handloom are :

- (i) to bring 60,000 handlooms under Co-operative fold ;
- (ii) to increase the production of handloom cloth from 40 million metres at the end of the Fourth Plan to 90 million metres at the end of the Fifth Plan period thereby providing fuller employment and creating minimum employment opportunities to the Weavers ;
- (iii) to provide the societies with adequate assistance to acquire all the improved appliances they require ; and
- (iv) to meet in full the yarn demands of the weavers by establishing 8 more spinning mills in the co-operative sector.

PROGRAMME DETAILS :

In the State's draft Fifth Plan an allotment of Rs. 5.92 crores has been made for the development of Handloom industries. Of this a major amount to the tune of Rs. 1 crore is provided towards rebate schemes ; Rs. 1.64 crores towards share-capital contribution to the existing and new spinning mills ; Rs. 75 lakhs towards provision of assistance to the societies for improvement of techniques ; Rs. 45 lakhs towards share-capital to the weavers co-operative societies for admission of new members and Rs. 60 lakhs for powerlooms has been proposed.

By implementing these development programmes it is anticipated that the production of Handloom cloth in the co-operative societies would be increased from 40 million metres in the Fourth Plan to 90 million metres in the Fifth Plan. The production of cloth under powerlooms is expected to increase from 32.4 million metres at the end of Fourth Plan period to 216 million metres at the end of Fifth Plan period.

Scheme for Share Capital loans to Weavers Co-operative Societies :

Nearly, 50% of the looms are now in the co-operative fold. If the benefits of plan schemes are to accrue to the Handloom weavers it is necessary that the remaining looms should also be brought under Co-operative fold. While, it would not be possible to bring all the looms within the Co-operative fold during the Fifth Plan period the

target is to admit atleast 60,000 handlooms now outside the co-operative fold, into-co-operative fold. It is proposed to provide an assistance of Rs. 75 to a weaver to become member of a Weavers' society. An outlay of Rs. 45 lakhs is provided for this purpose.

Scheme for revival of dormant societies:

There are at present 300 dormant societies either on account of the losses sustained by them or due to the mismanagement. Of this, it is assumed that 100 societies will not be fit for revival and they may have to be liquidated. For the remaining 200 societies it is proposed to give grant assistance at the rate of Rs. 5,000. An outlay of Rs. 10.00 lakhs is provided for this purpose.

Subsidy towards cost of staff :

One of the reasons for the societies becoming dormant is that there is no trained managerial staff. It is proposed to post departmental officers to manage the affairs of these societies till they become self-supporting and self-reliant. As the Societies are not able to meet the cost of departmental staff it is proposed to provide assistance to the societies on a sliding scale. An amount of Rs. 16.00 lakhs is made for this purpose.

Opening of Sales Depots :

Under Marketing while there is no need to open many more sales depots, the emphasis in the Fifth Plan will be on streamlining the Marketing Organisation by opening inter-State depots. An outlay of Rs. 5 lakhs is made for this purpose.

Rebate :

Under rebate scheme during the Fifth Plan period, it is proposed to provide assistance only to the apex weavers co-operative societies and to such of the primary weavers societies whose annual turn over will be over Rs. 50 lakhs. By restricting the assistance only to the apex Weaver's co-operative Societies it is expected that the expenditure can be cut down to 50%. It is now expected that expenditure in the Fourth Plan would not be more than Rs. 20 lakhs a year. On this basis, an allotment of Rs. 1 crore is provided in the Plan.

Improvement of Techniques :

Under Technical scheme the present practice of giving a few appliances is not a success. During 1973-74, a package scheme has been taken up. Under this scheme a Society would be given assistance to acquire all the improved appliances it required and to construct a shed, appoint a technical assisatnt to acquire processing units such as Dye-house, Mercerising Plants etc. When such assistance is made available the society can arrange production under one roof which means avoiding swindling of yarns by weavers when they take yarn for completing it into finished goods. By this procedure the present undesirable practice of Weaver taking yarn from the society and giving the finished goods to the Master Weavers or leaving the place with yarn

and wage advance resulting in difficulties to the societies in recovering could be avoided. During the Fifth Plan period it is proposed to provide assistance at the rate of 50,000 to 30 societies in a year. A provision of Rs. 75 lakhs is made in the Plan.

Scheme for subsidising interest on loans to weavers co-operative Societies:

Towards working capital, provision is not required in the plan. The aim should be to obtain a minimum of Rs. 10.00 crores every year from the Reserve Bank of India. For subsidising interest rate on borrowing from Reserve Bank of India, a provision of Rs. 15.00 lakhs is needed at the rate of Rs. 3.00 lakhs every year

Matching contribution to the thrift fund :

Under the above scheme for Weavers a provision of Rs. 10 lakhs towards State's share is provided.

The Andhra Pradesh Co-operative Housing Federation is providing loans to the individual and societies for constructing houses. Weavers could be encouraged to take advantage of this opportunity but as the weavers are not in a position to contribute even minimum share capital required it is proposed to provide loan assistance at the rate of Rs. 400 per weaver. To help atleast 3,000 weavers a provision of Rs. 15.00 lakhs is made in the plan.

Powerlooms :

As far as Powerlooms are concerned provision of block capital is now arranged through nationalised banks. Similarly working capital would also be arranged either from the Reserve Bank of India or by the Nationalised Banks themselves. But powerlooms would only be a success provided there are processing units. Establishment of processing units involving a minimum of Rs. 20 lakhs would be difficult in the private sector. Therefore, arrangements are being made in the Plan for the establishment of atleast 3 processing units with equipment for calendering, bleaching and printing of cloth. A provision of Rs. 60 lakhs is made in the Plan.

Wool Scheme :

A provision of Rs. 5 lakhs is also made in the Plan to provide for working capital loans to the wool weavers co-operative societies. It is also proposed to establish a wool spinning plant in the Rayalaseema Region at a cost of Rs. 5 lakhs. A provision of Rs. 10.00 lakhs is made under the head for Fifth Plan.

Share capital contribution to old spinning mills:

From the angle of demand for yarn this State is a deficit one. Against 6 lakhs of bales of yarn required the production is only 1.5 lakhs of bales. Very often the handloom weavers in the State are put to difficulties in obtaining their yarn requirements. In the recent years cotton production in the State has gone up considerably. While it was 2.5 lakhs of bales annually during the Third Plan period, it has reached a production target of 4 lakhs of bales. The existing spinning

mills would not be requiring all the cotton produced in the State. Therefore the agriculturist is faced with problems of disposal of his produce. In order to meet the twin objectives of meeting the yarn demand as well as finding a market to the cotton grown in the State, thereby helping the agriculturist to increase his income, it is necessary to establish either more number of spinning mills or to increase the spindleage of the existing mills.

At present the spindleage in the State is hardly 5 lakhs. The aim during the Fifth Plan period is to double this spindleage. For the installation of 5 lakhs spindles an investment of the order of Rs. 40 crores is required. Whether it is in the co-operative Sector for which the Government of India is agreeable to issue licences, or the private sector, efforts have to be made to obtain licences and set up new units or to increase the spindleage in the existing units.

The existing co-operative mills either required modernisation of machinery or expansion and for this purpose they would require an outlay of Rs. 1.50 crores for going ahead with the expansion programme. For enabling them to borrow a sum of Rs. 1 crore from institutional financing agencies, a provision of Rs. 50 lakhs is provided in the Plan towards State participation in the share of these existing mills.

Share Capital Contribution to New Spinning Mills.

During the Fifth Plan period it is proposed to set up 8 more co-operative spinning mills and these mills would be requiring an investment of the order of Rs. 6.50 crores. 50% of the investment could be obtained from the institutional financing agencies like the Industrial Finance Corporation. Out of the balance of 50% i.e., Rs. 3.25 crores, about Rs. 2.11 crores would be collected by way of share capital. The balance of Rs. 1.14 crores is provided in the plan towards State's participation in the new spinning mills.

SPECIAL FEATURES :

Employment :

It is expected that fuller employment to 10.44 lakhs of weavers would be provided in the Fifth Plan period. Under Powerlooms, it is expected that employment for 20,000 people are likely to be provided.

HAND LOOMS

*List of Schemes Proposed for Fifth Plan.**(Rs. in Lakhs)*

Sl. No.	Scheme.	Total.	Capital.	Foreign Exchange.
(1)	(2)	(3)	(4)	(5)
1.	Scheme for share capital loans to weavers co-operative societies for admission of weavers as members. ..	45.00	45.00	..
2.	(a) Scheme for revival of dormant societies. ..	10.00	..	..
	(b) Subsidy towards cost of staff ..	16.00	..	..
3.	Marketing Schemes.			
	(a) Opening of sales depots. ..	5.00	..	..
	(b) Rebate on sale of handloom cloth ..	100.00	..	..
4.	Scheme for improvement of techniques. ..	75.00	37.50	..
5.	Scheme for subsidising interest on loans to weavers Co-operative societies. ..	15.00	..	..
6.	Scheme for matching contribution to thrift fund. ..	10.00	..	..
7.	Scheme of loans to weavers Co-operative Societies for contribution to share capital of Housing Federation. ..	15.00	15.00	..
8.	Scheme for establishing processing units for powerlooms ..	60.00	30.00	..
9.	Wool Schemes. ..	10.00	7.50	..
10.	Share capital contribution to old spinning mills ..	50.00	50.00	..
11.	Share capital contribution to new spinning mills. ..	114.00	114.00	..
12.	Sericulture ..	67.00	10.00	..
	Total ..	592.00	309.00	..

18. VILLAGE AND SMALL SCALE INDUSTRIES.

The Small Scale Industries have assumed great significance in the industrial structure of the country. This sector has gained recognition as a potent and effective instrument for preventing the concentration of economic power, for spreading the base of ownership and for creating employment opportunities at lower investment costs per capita. The objective of providing large scale employment could be achieved largely through small scale sector in particular through self employment programme which is based on small entrepreneurs. In the Fifth Plan an allotment of Rs. 8.78 crores has been made for Village and Small Scale Industries excluding Handlooms for which an allotment of Rs. 5.92 crores has been made and Andhra Pradesh Small Scale Industrial Development Corporation for which Rs. 5.30 crores is allocated. The break up of this allotment is shown below :

<i>S. No.</i>	<i>Programme.</i>	<i>Outlay (Rs. in lakhs.)</i>
1.	Small Scale Industries	359.00
2.	Handicrafts	186.00
3.	Coir Industry	19.50
4.	Leather Industry	257.00
5.	Industrial Cooperatives	16.00
6.	Khadi & Village Industries	10.50
7.	State Government contribution to sick mills	30.00
8.	Handlooms	592.00
9.	Andhra Pradesh Small Scale Industrial Development Corporation.	530.00
TOTAL		2,000.00

In the following paragraphs detailed proposals under each of the above programmes are discussed :

SMALL SCALE INDUSTRIES

REVIEW

During the Fourth Plan the objective of the development programme for Small Scale Industries was to improve progressively their production techniques so as to enable them to produce quality goods and make them competitive and self reliant. It was recognised that the operation of industrial licensing system had not been effective in preventing competition from the large industries and the small industries required a degree of initial protection. Greater emphasis has, therefore, been placed on a variety of positive measures of assistance which included reservation of items for exclusive production liberal credit facilities, better supply of scarce raw materials, provision of technical assistance and incentives. Under the ancillary development programme steps were initiated to contact public sector undertaking and large and medium industrial undertakings in the private sector with a view to identifying the components and parts to be allotted to the small scale sector. Due to these efforts a number of small scale industries were benefitted in the State. A craftsmen guild was established in Hyderabad by A.P.S.S-I.D.Co., M/s Hindustan Aeronautics Ltd. had established ancillary industries at Hyderabad. A separate Electronic Industrial Complex is programmed to be established in Hyderabad to take up products ancillary to the Electronic Corporation of India, Hyderabad. To supplement the programme of assistance to the technocrats by the State Bank of India, a Technocrat Estate was set up. Another programme of importance taken up was the scheme of providing self-employment opportunities to educated un-employed. In the short period of 15 months during which this scheme has been in operation the financial institutions have approved over 2,000 cases involving a total investment of Rs. 8.5 crores which when implemented would provide direct and indirect employment for 25,000 persons.

OBJECTIVES AND APPROACH :

The objectives of the Village and Small Scale Industries programme during the Fifth Plan will be :

- (a) to increase the employment opportunities ;
- (b) to create necessary technological competence to make this sector self reliant ;
- (c) to lay emphasis on development of ancillary industries, modernisation of existing small scale industries and improvement of their quality, and
- (d) to provide techno managerial training to entrepreneur.

PROGRAMME DETAILS :

An allotment of Rs. 266 lakhs has been made for the development of Small Scale Industries ;

The break up of the amount is as follows :

<i>Sl. No.</i>	<i>Scheme</i>	<i>Amount</i> <i>(Rs. in lakhs)</i>
1.	Block Loans under S. A. I. Act	26.00
2.	Publicity Materials study tours, etc.	20.00
3.	Tool Room and Composite Service Workshop, Sanathnagar	29.00
4.	Quality Marking Scheme for Ceramics, Rajahmundry	5.00
5.	Quality Marking scheme for Light Engineering, Sanathnagar	6.00
6.	Saw Mill-cum-Timber Seasoning Plant	21.00
7.	Expansion of Ceramic Industry, Dhone,	8.50
8.	Scheme for supply of Power at concessional rate of interest to S.S.I. units	7.50
9.	Provision for S. S. I. D. C.	11.00
10.	Product Orient Scheme O.T.R.I., Anantapur	10.00
 <i>New Schemes :</i>		
1.	Establishment of Industrial Testing and Development Laboratory at Hyderabad	24.00
2.	Development of Karimnagar district through Science and Technology in collaboration with C. S. I. R., New Delhi	8.00
3.	Establishment of Polytechnological clinic at Hyderabad	9.00
4.	Bureau of Industrial Services	25.00
5.	Strengthening of Department at Headquarters and district level	26.00
6.	Setting up of Small Scale Industries in the Growth Centres of Tribal areas	30.00
Total ..		266.00

There are two quality marking centres one at Rajahmundry and another at Sanathnagar. The centre at Rajahmundry has started quality marking of the goods from 1968-69. In 1971-72, the Centre has marked Rs. 49 lakhs worth of ceramic goods. By the end of Fourth Plan the unit is likely to increase the quality and value of quality marking considerably. At the beginning of the Fourth Plan the quality marking centre at Sanathnagar was in the stage of purchase and installation of machinery. However in 1971-72 the unit has quality marked light engineering goods worth Rs. 15 lakhs. In order to meet the increasing demand of the industrialists in the State for tools such as press tools, pressure die casting dies and other precision tools room facilities, a composite servicing workshop has been established in the State. The unit has made a production of Rs. 2 lakhs in 1969-70, Rs. 2.50 lakhs in 1970-71 and Rs. 1.50 lakhs in 1971-72.

NEW SCHEMES :

Establishment of Industrial Testing and Development Laboratories in Hyderabad :

So far no testing and analytical laboratory has been set up in the State. Action is being taken to establish a functional Industrial Estate in Hyderabad at a cost of Rs. 85.25 lakhs exclusively for Chemical Industries, laying greater accent on the development of pharmaceutical industries under that complex. The industries that will come up therein require facilities for getting their raw materials and finished products tested besides certification of the quality of their products in some cases. They also require the help of a consultancy organisation to enable them to have their problems solved. For this purpose a testing laboratory has to be set up. This laboratory will also train chemists in analytical work and will also provide them with Refresher Training. A provision of Rs. 24 lakhs is made for this scheme.

Development of Karimnagar district through the application of Science and Technology :

The Council of Scientific and Industrial Research have suggested a pilot scheme for initiation of a programme of development through the application of Science and Technology in collaboration with the State Government. Karimnagar district in Telangana has been selected for this purpose. This project aims at fuller utilisation of all available industrial resources with the application of science and technology utilising the processes developed in the various research institutions under the control of C. S. I. R. The C. S. I. R. would extend 20% of the cost as Central Government reimbursable loan. An outlay of Rs. 8 lakhs is made for this purpose.

Establishment of Poly-Technological Clinic at Hyderabad :

The C. S. I. R. has a chain of Research Laboratories in the country developing various industrial products and processes on the laboratory and pilot plant scale. These products are offered for commercial exploitation through the N. R. D. C., New Delhi. With the increasing emphasis on Technocrats and young educated unemployed setting up of Small Industries instead of going for jobs the processes developed

by C. S. I. R. Laboratories form worthwhile propositions for them to draw upon and select suitable lines of manufacture. It is difficult to this class of entrepreneurs to obtain the processes developed at the various laboratories and the specialised knowledge and expertise available with them. In order to provide easy access, it is proposed to establish a polytechnological clinic at Hyderabad at a cost of Rs. 9 lakhs.

The Clinic will :

- (a) carry out the needs survey of the industries and in consultation with the managerial personnel of the manufacturing firms, identify the major problems relevant to product improvement, improved efficiency ;
- (b) communicate these problems to the appropriate Scientific/ Engineering institutions in the country for their advice and assistance ;
- (c) invite specialists and experts from C. S. I. R. institutions and elsewhere to visit the clinic and arrange consultancy meetings between the representatives and technical personnel of the industrial firms ;
- (d) maintain information on the processes, design engineering know-how available in the C. S. I. R. Laboratories and the N. R. D. C ;
- (e) assist the entrepreneurs in following up their problems with the C. S. I. R. and N. R. D. C. ; and
- (f) assist in bridging the gap between the industry and the reasearch laboratories.

Establishment of Bureau of Industrial Services for Package of Assistance Programme for Small Industries :

The Policy of the Government has always been to provide maximum possible assistance to the small entrepreneurs to set up Small Industries. While the State Directorate, the S. I. S. I. and the A. P. S. S. I. D. C. provide the necessary guidance to the entrepreneurs, the techno-managerial training facilities are provided by the S. I. E. T. Hyderabad, S. I. S. I. Hyderabad and A. P. Branch of the National Productivity Council. Though these facilities have encouraged the growth of Small Industries in the State, yet it cannot be said that they met fully the equirements of the situation. An attempt has been made to identify the reason for the slow rate of growth and the difficulties involved in implementing the projects by entrepreneurs. The factors responsible for the slow rate of growth are the difficulties involved in the selection of appropriate project or technology by the entrepreneurs, delays in getting necessary clearance from the Government and the financial institutions and inadequacy of training facilities in managerial and technical fields. In order to meet the day to day requirements of the small entrepreneurs on a turn-key basis and to provide the necessary guidance, on a continuing basis it has been proposed to set up a "Bureau of Industrial Services". Under this scheme it is proposed to appoint a Director to be assisted by advisers

in different fields such as business consulting technical services, technical documentation, marketing assistance and product processes and development workshop. This scheme is expected to cost Rs. 25.00 lakhs.

Strengthening of the Industries Department at Directorate and District levels :

Under this scheme it is proposed to strengthen the department both at the Headquarters and in the districts in order to meet the growing responsibilities envisaged under the Fifth Plan. In the first phase of the programme of self employment which is already under implementation the main thrust was confined to the twin cities and to meet that a suitable administrative machinery was devised. This with necessary modifications will have to be extended to the rest of the State. It is also proposed to upgrade the existing construction wing of the department to the level of a circle in order to cope up with the rise of Civil Engineering works. An outlay of Rs. 30 lakhs is made for this scheme.

Setting up of Small Scale Industries in the Growth Centres of the Tribal Areas :

In Andhra Pradesh there are 8 districts where tribals are predominantly living. These districts are :

1. Adilabad
2. Warangal
3. Khammam
4. Mahbubnagar
5. Srikakulam
6. Visakhapatnam
7. East Godavari and
8. West Godavari

Most of the tribals do not have even servicing facilities for agricultural implements and processing industry which are their basic needs for 'Agricultural and Forest produce'.

During the Fifth Plan, it is proposed to provide in a phased manner servicing facilities and provide processing industry to begin with at the rate of Rs. 6.00 lakhs per year. The cost involved would be Rs. 30 lakhs.

INDUSTRIAL ESTATES

In the growth of Small Scale Industries, the Industrial Estates play a very vital role. They provide much needed infrastructure facilities and common services.

REVIEW :

There are 40 industrial estates in the State, out of which 22 are Conventional Estates, 17 Assisted Private Industrial Estates and one Co-operative Industrial Estate. Out of 547 workshops constructed under these Industrial Estates, 523 have been allotted. The annual production from the industries set up in these sheds is expected to be Rs. 74.28 crores providing employment to 7783 persons. Similarly, out of 1047 developed plots, 617 plots have so far been occupied providing employment to 5067 persons. The production from these units is expected to be Rs. 7.76 crores. A programme for disposal of factory sheds and developed plots on hire purchase basis to the entrepreneurs who completed occupation of 5 years has been introduced. Another scheme of infrastructure set up at Vijayawada is the multipurpose Jawahar Autonagar. It provides the setting up of manufacturing units, services units and trading units for dealing in automobile spares. In the Autonagar, so far 173 units have come up with a capital investment of Rs. 35 lakhs providing employment to 1,100 persons. The Autonagar complex will ultimately have a turn over of Rs. 3 crores and will provide employment to nearly 5,000 persons when it is fully developed.

OBJECTIVES AND APPROACH :

The objectives of Industrial Estates programme during the Fifth Plan will be

- (1) to ensure fuller utilisation of the existing accommodation available in the existing Estates besides starting a few functional Industrial Estates ;
- (2) to convert the existing Assisted Private Industrial Estates into conventional Estates in a phased programme ;
- (3) to effect improvements to the existing Estates by providing additional water supply, roads and drainage ;
- (4) to establish functional Estates for fruit and food products at Chittoor and Vijayawada, Functional Estate for Ceramic Industry at Nellore and an ancillary industries Estate for Nizam Sugar Factory at Bodhan.

PROGRAMME DETAILS :

In the draft Fifth Plan an allotment of Rs. 42.00 lakhs has been made for the development of Industrial Estates. This would create employment to nearly 10,000 persons.

Ancillary Estate for the Nizam Sugar Factory, Bodhan :

The Nizam Sugar Factory, Bodhan, is one of the largest Sugar Factories in the Country with a crushing capacity of 4,500 tonnes per day. Besides Sugarcane crushing the factory has an alcohol plant, a rice mill and a 100 ton capacity feed mixing plant. M/s. Hyderabad Chemicals and Fertilisers have set up a fertiliser mixing plant at Bodhan.

The Small Industries Service Institute, Hyderabad with the co-operation of Industries Department has conducted an industrial potential survey of this area with the particular objective of developing ancillary industries to the Nizam Sugar Factory, Bodhan. They suggested the setting up of following manufacturing lines :

- (i) Foundry with machine shop.
- (ii) Ready-made Garments.
- (iii) Washing Soap.
- (iv) Carpentry unit.
- (v) Automobile and tractor servicing-cum-repair shop.
- (vi) Rubber Moulded goods.
- (vii) Tyre retreading.
- (viii) Straw boards.
- (ix) Black bolts and nuts.
- (x) Building bricks.
- (xi) Insecticides,
- (xii) Rice bran oil.
- (xiii) Fabrication Unit.
- (xiv) Oil refining.
- (xv) Cycle carriers, stands and bells.

It is proposed to establish an Industrial Complex around Nizam Sugar Factory. The financial outlay on this ancillary Estates would be Rs. 6.00 lakhs.

Establishment of two Fruit and Food Products Functional Estates.

Andhra Pradesh is an agriculturally advanced State and development of agro-industries should be given priority for proper exploitation of its resources. At present there are only a few processing units utilising fruits.

The State is rich in fruits and a wide range of fruits both tropical and temperate are grown.

Out of the production of fruits in the State only about 4% of the total fruits are utilised in processing and preservation industry, in the State and the bulk of the remaining fruits are exported to other States, mostly to Maharashtra.

Fruit is a very valuable supplement to the food resource of the country and processed and preserved fruits will meet the food requirements of the nation to a great extent. Processed food products also offer a wide export market and they are on the increase from the country. The present level of the export of processed fruits is about 7,000 tonnes and it is expected to reach a level of 20,000 tonnes by 1975-76.

The main fruit growing districts in the State are Visakhapatnam, West Godavari, Krishna, Chittoor and Cuddapah. In order to meet the home demand and cater to the export market, it is proposed to organise two Functional Estates for fruit and food products at Chittoor and Vijayawada in the State. Necessary infrastructure facilities will be provided and a common service centre and a marketing organization centre will be located in these estates particularly aiming to export the processed food and fruits. The financial implications of these two estates will be about Rs. 13.00 lakhs.

Ceramic Industry is perhaps the oldest industry of the world when man began to make use of the Mother earth in making utensils and construct dwelling houses. Today this industry is not only confined to traditional items like pottery, crockery, bricks and tiles but it has seen new horizons in the field of electricity and electronics.

The demand for Ceramics in the Electrical Industry has been a phenomenal growth in the recent period both in quality and quantity. Low tension porcelain used in a wide range of articles like switches junction boxes, connectors, plugs, sockets, fuse holders, lamp holders etc., are in great demand. High temperature insulators used as supports for electric heating element and as vacuum spacers are in good demand while the demand for high frequency ceramic insulators is on the increase.

Ferrites which is a non-metallic but a magnetic ceramic is increasingly used in television receivers, transistors, radios, recording and pick up heads etc.,

Therefore, specialisation in ceramic offers very good demand both for the present and the future of the industry. Wide range of raw materials required in Ceramic industry are available within the State.

A functional industrial estate for ceramics is, therefore, proposed during the Fifth Plan period to be located at Nellore. Necessary infrastructure will be built up and a centre to look after the testing of raw materials, finished goods and assist in marketing will be established. The financial investment for the Estate will be about Rs. 6.50 lakhs.

The number of educated unemployed may increase year after year during Fifth Plan and provision has to be made to meet the increasing requirements during the Fifth Plan.

Necessary provision has been made in the Fifth Plan for meeting the cost of establishment and other contingent expenditure of State under Self Employment schemes.

HANDICRAFTS :**REVIEW :**

The schemes taken up during the Fourth Plan have made it possible to meet the various needs and requirements of craftsmen in respect of financial assistance, training, design assistance quality control and ready market for products. The value of production and sales in the organised units increased from Rs. 9 lakhs during 1961-62 to Rs. 29.84 lakhs during 1972-73.

OBJECTIVES :

The objectives of this programme are

- (1) to lay greater emphasis on the design, diversification and quality, improvement with a view to improving the marketability of the products.
- (2) to effect technical improvements with an accent on utility without impairing artistic value of the products.
- (3) to set up an export cell and starting an Emporium at Bombay besides the establishment of Handicrafts Estate.
- (4) to impart technical training to craftsmen with a view to improve their productivity and have a larger production base to meet expanding market demands.

PROGRAMME DETAILS :

An allotment of Rs. 186.00 lakhs has been made in the Fifth Plan. It is proposed to continue 15 schemes which were already under implementation during the Fourth Plan period and also to start 12 new schemes. The schemes proposed to be taken up are as follows:—

<i>Scheme.</i>	<i>Outlay Rs. in lakhs</i>
(1)	(2)
SPILL-OVER SCHEMES:	
1. Scheme for Research & Designs Institute, Hyderabad including diversification of production wings.	19.88
2. Scheme for Publicity Material on Handicrafts and printing of brochure.	10.45
3. Scheme for Handicrafts Advisory Board ..	0.55
4. Scheme for Emporia outside the State (New Delhi emporium).	9.50
5. Scheme for Emporia (construction of showroom buildings).	12.60
6. Scheme for providing working capital and share capital loans to Handicrafts co-operative societies.	15.80
7. Scheme for providing subsidy for organisation, supervision for Handicrafts co-operatives and Artisans.	6.30

(1)	(2)
8. Scheme for supply of improved tools and equipment to Handicrafts co-operatives and individual artisans.	10.45
9. Schemes for Common Facility Centres ..	10.45
10. Scheme for deputation of craftsmen for training and study to important crafts centres outside the State.	1.04
11. Scheme for employing Master craftsmen from other States for training Handicrafts Artisans.	1.66
12. Scheme for setting up of raw material depots for the benefit of craftsmen including supply of imported materials.	15.00
13. Scheme for quality marking on Handicrafts ..	8.40
14. Scheme for Training craftsmen and conducting refresher course for the benefit of craftsmen ..	12.40
15. Scheme for Pilot Centre for Leather Puppet-cum Dolls at D.C. Palli, Nellore District.	1.04
<i>New Schemes:</i>	
16. Scheme for setting up of Export Cell for promotion of handicrafts (including strengthening of Directorate staff).	7.55
17. Scheme for starting Emporium at Bombay ..	10.90
18. Scheme for development of tribal arts and tribal embroidery.	2.09
19. Scheme for Industrial Estates for Handicrafts. ..	7.45
20. Scheme for starting a Pilot Centre for cutting and polishing of semi precious stones.	4.20
21. Scheme for development, production-cum-training centre in stone carving at Karimnagar.	0.45
22. Scheme for artistic ceramicware, decorative glass and chandeliers.	5.26
23. Scheme for Paithan weaving, Himroo weaving etc.	3.22
24. Scheme for Chrome dye house at Warangal and Eluru.	4.20
25. Scheme for Lacquarware & Lacquarware Furniture	3.22
26. Scheme for production and sale of indigenous perfumes.	1.04
27. Scheme for deputation of trade delegation to foreign countries for promotion of export of handicrafts.	0.90
Total ..	186.00

COIR INDUSTRY :

Coconut is being cultivated extensively in three coastal districts of Andhra area viz. Srikakulam, East Godavari and West Godavari. But the coconut husk is not being exploited to commercial advantage. Apart from the departmentally run coir goods factory at Narsapur in West Godavari district there is no other unit for fully exploiting the bye products of the coconut industry. Providing retting facilities is essential for the growth of coir industry. Hence it is proposed to start retting units and mechanised coir yard spinning and rope making unit in the three districts which form the base for the development of coir industry.

An outlay of Rs. 19.50 lakhs is proposed for taking up the following schemes:—

<i>Continuatinig Schemes.</i>	<i>Outlay</i> (Rs. in lakhs)
1. Scheme for Coir Goods Factory, Narasapur	.. 8.48
<i>New Schemes:</i>	
2. Scheme for establishment of Retting Units	.. 5.51
3. Scheme for Mechanised Coir Yarn Spinning and Rope Making Unit.	5.51
Total	<u>19.50</u>

LEATHER INDUSTRY :

REVIEW:

The following units/schemes are in operation

1. Utility Leather Goods Centre, Musheerabad.
2. Model Leather Goods Manufacturing Unit, Vijayawada.
3. Model Tannery, Guntakal.
4. Hyderabad Tanneries, Hyderabad.
5. Loans to Artisans.
6. Deputation of candidates for training outside the State.
7. Managerial Assistance to Leather Co-operatives.

The Utility Leather Goods Centre at Musheerabad, Hyderabad undertook production of footwear, leather goods of all types, effected sales and provided employment to a large number of persons besides improving in general the quality of footwear manufactured by the local units. The installed production capacity of this unit is of the order of Rs. 5.00 lakhs per year. This capacity could not fully be tapped on account of limited working capital provided, which as per rules cannot be ploughed back. The same is the case of the Model

Leather Goods Manufacturing Unit, Vijayawada. The accommodation difficulty of this unit has been surmounted by construction of an additional wing at a cost of Rs. 40,000/- (approximately). Both the above units are proposed to be reorganised by purchasing balancing machines and equipment and converting them into servicing-cum-production units to be of greater service to the industry and also to function on economically viable basis.

The Model Tannery at Guntakal, while functioning undertook production of leathers for bottom stock of foot-wear and imparted training to 12 candidates each year in the modern methods of fabrication of finished leathers. The passed out candidates are serving in the private units and effecting improvement in the methods of tanning by the knowledge acquired during the training. This unit also suffered working capital difficulty besides funds needed for purchase of additional machines and equipment to make the unit capable of manufacturing all varieties of leathers needed by local footwear industry and for export purposes.

The Hyderabad Tanneries, Hyderabad, which was under voluntary liquidation was re-quired and improvised for recommissioning and fabrication of finished leathers for export to the tune of Rs. 1.00 crore annually, as its installed production capacity is of the order of Rs. 2.00 crores annually. The unit started production of sole leathers in anticipation of full sets of modern machines, for which order was placed with M/s. Trade Craft, Hyderabad representing the Invest Imports, Belgrade, Yugoslavia. For want of funds, the machine ordered could not be imported and production suspended. If this unit is organised on proper lines and a leather complex is set up, it will stand as a backbone to the leather industry in Andhra Pradesh.

Small loans under State Aid to Industries Act have been extended to over 2,700 artisans engaged in various branches of leather industry with a view to providing them with working capital and bettering their economic lot through enhanced production.

With a view to improving the technical efficiency a number of leather technologists working in various units of this department were deputed for refresher training to different leading institutions in the country. In all 24 employees got trained.

For affording technical know-how, do-how and proper function of the leather cooperatives, services of technically qualified managers are being provided to needy cooperatives. During the Fourth Plan period six posts of managers (200-400) were sanctioned.

During the Fourth plan period an expenditure of Rs. 38.09 lakhs is likely to be incurred.

OBJECTIVES :

The objectives under this head are :

(a) to develop the leather industry on sound scientific lines;

- (b) to undertake fabrication of finished leather and leather goods ;
- (c) to undertake export of finished products as per policies laid down by the Government of India; and
- (d) to provide employment to 10,000 persons (direct employment 3080 + 6961 indirect).

PROGRAMME DETAILS :

An outlay of Rs. 257 lakhs has been proposed in the Plan for setting up a wide range of raw-material supply-cum-marketing organisation with a Leather Development Corporation at the apex and leather finishing units at the base. The schemes proposed to be taken up are as follows :

<i>Scheme</i>	<i>Outlay</i>
	<i>(Rs. in lakhs.)</i>
1. Utility Leather goods Centre, Musheerabad ..	20.90
2. Model Leather Goods Manufacturing Unit, Vijayawada ..	20.90
3. Model Tannery, Guntakal	16.20
4. Hyderabad Tanneries, Hyderabad ..	41.60
5. Loans to individual tanners and cobblers ..	4.20
6. Deputation of candidates outside the State ..	0.64
7. Industrial Fund Loans	0.46
8. Managerial assistance to Leather Cooperatives ..	1.40
9. Raw material supply-cum-production units with show rooms.	29.00
10. Leather Development Corporation	121.70
	<hr/>
TOTAL : ..	257.00

The units mentioned at S. Nos. 1 to 9 above will continue to function during the Fifth plan with the provision indicated against each scheme. On the constitution of the Leather Development Corporation with the equity capital of Rs. 121.70 lakhs, the above schemes along with their assets and provision will be transferred to the Corporation for running them on sound commercial lines and building-up exports

INDUSTRIAL CO-OPERATIVES :

Industrial Cooperatives are considered the appropriate agencies to offer to their artisans and other members benefits of subsidised finance, raw materials, marketing, joint production common facility workshops and adoption of technical improvements. There are 2115 industrial cooperatives as on 31-3-1972. Since 70% of the societies are dormant due to either lack of financial assistance or managerial guidance etc. It has been the endeavour of the department during Fourth Plan to reorganise the societies and strengthen the existing ones. Accordingly, a detailed study has been taken up by the department to identify the viable and potentially viable societies and it is expected to complete the above work within 3 months. During the Fifth Plan the potentially viable societies will be given various types of assistance to enable them to become self supporting over a period of time.

Three Schemes under this sector envisaging an outlay of Rs. 16.00 lakhs contemplate giving managerial assistance to select Industrial Cooperatives, providing share capital loans to members of Industrial Cooperatives, and supply of finance through Cooperative Banks at concessional rate of interest.

<i>Scheme</i>	<i>Outlay</i>
	<i>(Rs. in lakhs)</i>
<i>Industrial Cooperatives :</i>	
1. Managerial assistance to select Industrial Cooperatives	5.00
2. Share capital loan to members of Industrial Cooperatives	8.50
3. Concessional rate of interest	2.50
	Total
	16.00
Khadi and Village Industries :	10.50

ANDHRA PRADESH SMALL SCALE INDUSTRIAL
DEVELOPMENT CORPORATION LIMITED

REVIEW :

The Andhra Pradesh Small Scale Industrial Development Corporation Limited was formed in the year 1961 with an authorised share capital of Rs. 50 lakhs, with the object of promoting industries in the small scale sector in the State.

The activities of the Corporation have taken a new turn during the Fourth Plan, as towards the end of 1968 the Corporation decided to take up more and more promotional activities.

The scheme for "participation in the capital structure" of small scale industries which was initiated in 1969, has become very popular. Under this scheme upto the end of March, 1973, the Corporation sanctioned 31 capital participation schemes involving a sum of Rs. 58.25 lakhs. Of those, 18 had already gone into production. The total capital outlay in the 31 companies will be of the order of Rs. 350 lakhs. These companies will provide employment to about 2,400 persons directly and indirectly. During 1973-74 another 15 schemes involving a sum of Rs. 25 lakhs are likely to be sanctioned.

The Corporation prepares or gets prepared feasibility reports and project profiles in a larger number. The Corporation's Technical Cell consisting of experts in mechanical engineering, chemical engineering, food technology, electronics and marketing besides preparing feasibility reports renders advice to the existing industries as also to the prospective entrepreneurs. In addition the Corporation has already got prepared 25 feasibility reports at a cost of Rs. 1.5 lakhs upto the end of March, 1973 by commissioning Technical Consultants outside and from the National Laboratories.

The Technical Cell identifies profitable lines of manufacture and conducts market surveys. The Technical Cell has so far processed and sponsored 225 applications of technocrats with the commercial banks. Out of these, over 105 technocrats' schemes have been sanctioned. Fifty of these technocrats had set up their units in the Corporation's Entrepreneurs Industrial Estate, Balanagar. The Corporation has imparted training in the techniques of production and financial management to 45 of these technocrats.

The Corporation has taken up the marketing programme with a view to solve the marketing problems of Small Scale Industries in the State. Due to paucity of funds, this activity was mainly restricted to marketing the products of technocrats and craftsmen and the Corporation's joint ventures.

With a view to provide employment to technically qualified entrepreneurs, the State Bank of India and other banks are operating a scheme to help these engineers to set up industries. Under this scheme, loans upto Rs. 2 lakhs are granted to each engineer without insisting on any margins. The Corporation after having studied working of the scheme found that most of the technocrats were not able to take advantage of the scheme due to lack of ready made factory sheds. The Corporation has, therefore, constructed one Industrial Estate at a cost of Rs. 31.00 lakhs exclusively for engineer entrepreneurs at Balanagar with a provision of 50 sheds. The total investment in the units established in the Estate is of the order of Rs. 1.00 crore. The units in the Estate are providing employment to about 750 persons. The Corporation is taking up the extension of the Estate with another 50 sheds and is planning to construct a similar Engineer Entrepreneurs Industrial Estate with 65 sheds at Visakhapatnam during 1973-74.

While graduates and diploma holders in engineering, etc., can obtain with relative ease financial assistance for setting up of industries from various institutions under special schemes formulated, it may not at all be easy or possible for craftsmen, skilled workers and Industrial Training Institute trainees to properly represent their case, negotiate with the banks and get the required finances. The banks are also finding it difficult to deal individually with so many very much small ventures because they are scattered over a wide area, the requirements of each unit are small and consequently difficult to service. Therefore, the Corporation drew up a scheme for bringing all such craftsmen together, accommodating 50 to 60 of them under one roof. Accordingly the Corporation constructed one Craftsmen Guild at Mallepally at a cost of Rs. 11.00 lakhs accommodating about 100 small sheds and sponsored the cases of craftsmen so that the banks can extend loan assistance to them. These 100 units in the Guild provide employment to about 600 persons. The total investment of the units in the Guilds is estimated at Rs. 10 lakhs.

During 1973-74 it is proposed to construct 100 more sheds in the Mallepally Guild and also to construct one Guild each at Mahaboobnagar, Warangal and Tirupathi.

The Corporation has implemented a scheme for the supply of machinery on hire purchase basis to educated unemployed persons. During the year 1972-73 the Corporation has already sanctioned 85 applications involving a sum of Rs. 18.00 lakhs while it proposes to supply machinery to educated unemployed persons worth Rs. 30 lakhs during the year 1973-74.

A statement showing the actual expenditure incurred by the Corporation during the year 1969-70 to 1972-73 and the proposed outlay in the year 1973-74 is enclosed (Annexure-A).

The Corporation's Fourth Plan Schemes could not be implemented in full mainly due to paucity of funds. Therefore, keeping in view the minimum financial requirements, a programme of implementation during the Fifth Plan has been drawn up by the Corporation.

OBJECTIVES :

The objectives of programmes proposed to be taken up by the Corporation during the Fifth Plan will be :

- (i) to support and strengthen the capital base of small entrepreneur so as to enable him to raise more and more long term and short term resources from the banks to establish industrial units,
- (ii) to implement special schemes for the industrial development in chronically drought affected areas and backward areas where the capital participation schemes of the Corporation might not be effective,

- (iii) to undertake general promotional programmes :
- (a) by preparation of feasibility reports and identification of industries to be taken up under small scale sector,
 - (b) by rendering technical advice to the prospective entrepreneurs,
- (iv) to promote self-employment schemes for the educated unemployed :
- (a) by constructing Industrial Estates,
 - (b) by constructing Guilds for Craftsmen,
 - (c) by imparting techno-managerial training and by rendering technical advice, and
- (v) to render marketing assistance to small scale industries

PROGRAMME DETAILS :

In the Fifth Plan period an allotment of Rs. 5.80 crores has been made for contribution to the Andhra Pradesh Small Scale Industrial Development Corporation. The schemes proposed to be taken up are furnished below :

<i>Sl. No.</i>	<i>Schemes</i>	<i>Outlay (Rs. in lakhs)</i>
(1)	(2)	(3)
I. (a)	Capital Participation and joint venture Schemes	} 265.00
(b)	Infrastructure and other Programmes ..	
2.	Techno-economic Consultancy Service and Preparation of Feasibility Reports	5.00
3.	Special Schemes for Industrial Development of Backward Areas	40.00
4.	General Promotional Activities	25.00
5.	Marketing Assistance to Small Industries ..	10.00

(1)	(2)	(3)
6.	Technocrats Industrial Estate and Craftsmen Guilds	60.00
7.	Sample Room-cum-Sales Window ..	5.00
8.	Setting up of 2 New Raw Material Servicing Centres	10.00
9.	Hire Purchase Scheme	100.00
10.	Techno-managerial Training	5.00
11.	Reorganisation of Production Units ..	5.00
		530.00
12.	Reorganisation and modernisation of Government Units (Part of the programme of the Industries Department.)	25.00

Capital Participation and Joint Venture Schemes :

The capital participation scheme started in 1969 aims at strengthening the capital base of a small entrepreneur to enable him to raise more long term and short term loans from banks. The joint venture scheme has been successful in inducing the hesitant entrepreneurs, particularly from the backward areas, to come forward and establish industries in partnership with the Corporation which contributes upto 50% of the risk capital.

During the Fifth Plan period, it is estimated that about 120 capital participation schemes would be sanctioned (including joint ventures) involving a total commitment of Rs. 265.00 lakhs to the Corporation. With the background of the experience gained and with the strengthening of Technical Cell comprising of highly experienced technical officers, it is expected that there would be no difficulty in achieving the target during the Fifth Plan period.

The investment of Rs. 265.00 lakhs by the Corporation attracts a matching contribution of atleast Rs. 265.00 lakhs from entrepreneurs and a further sum of Rs. 15.00 crores from financial institutions by way of term loans. These 120 industries are expected to provide employment opportunities to about 10,000 persons.

Techno-economic Consultancy Service and Preparation of Feasibility Reports :

The Corporation has taken up the programme of identifying the profitable lines of manufacture and preparing feasibility reports. Lack of technical consultancy facilities in the State is one of the main

draw-backs in the growth of small scale sectors. It was therefore proposed that the Corporation should prepare or get prepared feasibility reports and project profiles in a large number.

During the Fifth Plan period, it is proposed to get 100 feasibility reports prepared by reputed consultant engineering firms at a cost of Rs. 5.00 lakhs.

Special schemes for industrial development of the backward areas :

According to the criteria adopted by the Planning Commission, 14 out of the 21 districts in the State have been declared as backward and special incentives are being given to the entrepreneurs who set up industrial units in such backward areas. Despite these incentives, entrepreneurs are not always prepared to set up industrial units in such areas. In the Corporation's own experience, despite its preparedness to share the risks involved in the new ventures by participating in the risk capital of the small scale industries, not many entrepreneurs have come forward to set up industries in the backward areas in collaboration with the Corporation. Therefore, the Corporation felt that it would be desirable to adopt a different approach for the development of small scale industrial units in such backward areas. The Corporation, therefore, proposes to set up industries on its own in such backward areas and chronically drought affected areas to serve as nuclei which may help in generating the required momentum for the industrialisation of these areas. The Corporation also envisages giving long term loans to industries set up in those areas at a low rate of interest with a long repayment schedule.

Even though the banks are willing to advance loans to industries set up in rural areas, they are finding it extremely difficult to serve these industries because of their remoteness and wide dispersal. Therefore, the Corporation is sanctioning loans to such of those industries as are set up in backward rural areas, however, not exceeding Rs. 20,000 in each case. During the Fifth Five-Year Plan, provision for a token amount of Rs. 40.00 lakhs is made for advancing loans and for setting up of small scale industries units in the backward areas of the State.

General Promotional Activities :

The Corporation has been acting as a philosopher and guide to the entrepreneurs. At present it is incurring a sum of Rs. 3.00 lakhs every year on general promotional activities.

With the tempo of promotional activities increasing every year, the expenses on account of salaries to Technical Advisers in chemical, electronics, food technology and mechanical engineering and their staff has been on the increase. The total estimated expenditure on this score would be about Rs. 25.00 lakhs during the Fifth Plan period.

The Technical Officers of the Corporation will in addition to helping the Corporation in finalising the schemes under capital participation programme and industrial development programme in chronically drought affected areas and backward areas, will help the technocrats that come forward to set up the industries in various Estates and Guilds that are going to be constructed by the Corporation.

Marketing Assistance to Small Industries :

The Corporation has taken up the marketing programme with a view to solve the marketing problems of small scale industries. Small Scale Industries in Andhra Pradesh to-day are at a great disadvantage due to lack of organised marketing service which is hampering the further growth of the small industries in the State. In certain fields of production, particularly in the processed fruits and vegetable industry, lack of marketing arrangements has not only arrested the further growth of industries but also resulted in the closure of some industries. Marketing assistance includes the export of goods of small industries.

Due to the paucity of funds, the assistance has so far been restricted to the technocrat and craftsmen's units. In order to take up this activity (where discounting of bills is involved), this Corporation needs a sum of Rs. 10.00 lakhs during the Fifth Plan period.

Assistance to Technocrats and Technocrats Industrial Estates :

With a view to provide employment to technically qualified entrepreneurs, the State Bank of India and other banks are operating on a scheme to help these engineers to set up industries. Under this scheme, loans would be made available upto Rs. 2.00 lakhs each without insisting on margins. The Corporation after having studied the working of the scheme, found that an appreciable number of technocrats were not able to make full utilisation of the scheme due to certain drawbacks. The Corporation decided to help the technocrats in assisting them by identifying possible lines of manufacture and sponsoring the applications for bank credit.

One of the main bottlenecks in the implementation of the scheme is the lack of factory accommodation in the Industrial Estate for technocrats particularly in the urban areas. The Corporation has therefore decided to set up Engineer Entrepreneurs' Industrial Estates in cities like Hyderabad, Visakhapatnam, Vijayawada, etc. where the engineers would be provided sheds on rent or allotted on sale-cum-lease basis.

The Corporation proposes to construct Industrial Estates for engineer entrepreneurs at Vijayawada, Guntur and Warangal and at other district headquarters depending upon the number of engineering graduates that come forward to set up industries at such places.

In respect of Industrial Guilds for Craftsmen, the Corporation proposes to construct Industrial Guilds at every district headquarters during the Fifth Plan period. The Corporation proposes to obtain loans from financial institutions such as Banks, Andhra Pradesh State Financial Corporation, Life Insurance Corporation, etc., for this purpose. However, the Government may have to provide margin money to an extent of 25% of the project cost. The margin money required for the above project has been estimated at Rs. 60.00 lakhs during the Fifth Plan period.

In each Industrial Estate there will be provision for 50 factory sheds creating employment opportunities to at least 50 persons and in

each Guild there will be a provision for 100 factory sheds providing employment opportunities to about 600 persons. It may be mentioned here that when an Infrastructure Corporation is set up these Firms will be taken over by that Corporation.

Sample Room-cum-Sales Window :

As a part of the marketing assistance to small industries, the Corporation proposes to set up a Sample Room-cum-Sales Window at a cost of Rs. 5.00 lakhs in the metropolitan city which will not only exhibit all products of the small scale industries but would also exhibit samples of articles which are required by various Governmental agencies like Defence Department, Railways, Public Undertakings, Director-General of Supplies and Disposals, etc.

Setting up of two Raw Material Servicing Centres :

During the Fifth Plan period, it is expected that the number of small scale industries would increase and the demand for raw materials would grow. As such, it is proposed to establish two Raw Material Servicing Centres—one in Rayalascema and the other in Telangana region— at a cost of Rs. 10.00 lakhs during the Fifth Plan period. It is proposed to borrow the balance requirements (estimated at Rs. 40.00 lakhs) from banks.

Hire Purchase :

As the main emphasis of the Fifth Plan is to create maximum employment opportunities to educated unemployed persons, the Corporation proposes to take up the schemes with all its vigour and estimates to supply machinery on hire purchase basis worth Rs. 100.00 lakhs during the Fifth Plan period. This would create employment opportunities to 3,000 persons, both direct and indirect.

Techno-Managerial Training :

An entrepreneur is a class by himself and all the engineers are not borne entrepreneurs. The financial institutions have rightly emphasised the need for providing adequate training to the engineers who want to set up industries particularly in the management of industries, production, financial administration, etc. The training programme is essentially a need-based one. The estimated requirements for imparting the techno-managerial training for engineering entrepreneurs during the Fifth Plan period would of the order of Rs. 5.00 lakhs to train 100 technocrats per year.

Re-organisation of Production Units :

The Corporation is having 11 production units of its own. These units could not achieve the optimum capacity in their working on account of various factors. A Business Committee which was constituted by the Board of Directors of this Corporation to study the working of these units, suggested several measures for proper working among whom the most important ones are modernisation/expansion of certain units in order to stand competition with other small scale units and to obtain self-sufficiency. The estimated requirements of

the Corporation for gearing up of its 11 production units will be of the order of Rs. 5.00 lakhs during the year 1974-75.

Re-organisation and modernisation of Government Units :

In addition to the production units owned by the Corporation, there are 5 Government undertakings under the administrative control of the Corporation. The working of these Government units was also reviewed and it was decided that H. T. Insulators and sophisticated type of sanitary-ware should be manufactured at Government Ceramic Factory, Gudur which requires substantial expansion of the unit involving replacement/addition of certain heavy machinery. For this purpose, the cost of expansion of this unit might involve ultimately a sum of Rs. 47.00 lakhs for establishment of Tunnel Kiln and other allied machinery.

However, during the Fifth Plan period a sum of Rs. 25.00 lakhs would be needed. This provision of Rs. 25.00 lakhs will form a part of the plan of the Department of Industries.

A statement showing the requirements of the Corporation during the Fifth Plan period is enclosed. (Annexure-B).

ANNEXURE—' A '

Fourth Five-Year Plan Actuals for the First Four Years and the Probables for 1973-74.

(Rupees in lakhs.)

Sl. No.	Programmes.	Fourth Plan outlay 1969-74.	Actual expenditure and physical Targets.				Proposed outlay 1973-74.
			1969-70	1970-71	1971-72	1972-73	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
III. (ii) SMALL SCALE INDUSTRIES.							
(4)	1. Capital participation and Joint Ventures	300.00	2.96 3 Nos.	10.4 8 Nos.	3.06 13 Nos.	8.24 7 Nos.	25.00 15 Nos.
	2. Techno-economic Consultancy and Preparation of Feasibility reports.	5.00	..	0.33 7 Nos.	0.90 15 Nos.	0.19 3 Nos.	0.20 5 Nos.
	3. General Promotional activities.	3.00	1.00	3.50	3.00	3.00	4.00
	4. Assistance to Technocrats & Technocrats Industrial Estates.	20.00	..	28.07 (1 Estate 1 Guild).	16.99*	2.62*	24.25* (2 Estates 3 Guilds).

* Spillover expenditure.

Note.—The schemes which were proposed for inclusion in the Fourth Plan but which could not be taken up for implementation due to paucity of funds, have not been included in this statement.

ANDHRA PRADESH SMALL SCALE INDUSTRIAL DEVELOPMENT CORPORATION LIMITED.

*Programme-wise outlay of expenditure during Fifth Five-Year Plan Period.**(Rs. in lakhs)*

Sl. No.	Programmes. - Small Scale Industries.	Requirements during Fifth Plan period.	1974-75	1975-76	1976-77	1977-78	1978-79
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Capital Participation & Joint Ventures schemes.	265.00	35.00	45.00	50.00	65.00	70.00
2.	Techno-Economic consultancy Service and Preparation of Feasibility Reports.	5.00	1.00	1.00	1.00	1.00	1.00
3.	Special Schemes of Industrial Development of the backward areas in Telangana.	40.00	6.00	6.00	8.00	10.00	10.00
4.	General Promotional Activities ..	25.00	5.00	5.00	5.00	5.00	5.00
5.	Marketing assistance to small industries ..	10.00	10.00	..	..	..	..
6.	Technocrats Industrial Estates & Craftsmen Guilds. ..	60.00	12.00	12.00	12.00	12.00	12.00
7.	Sample room-cum-sales Window ..	5.00	5.00	..	..	..	..
8.	Setting up of two New Raw Material Servicing Centres ..	10.00	5.00	5.00	..	..	..
9.	Hire Purchase scheme. ..	100.00	20.00	20.00	20.00	20.00	20.00
10.	Techno-Managerial Training ..	5.00	1.00	1.00	1.00	1.00	1.00
11.	Running of Production units. ..	5.00	5.00	..	..	..	..
	Total ..	580.00	105.00	95.00	97.00	114.00	119.00
12.	For Re-organisation of Govt. Units (Dept. of Industries.) ..	25.00	25.00	..	..	..	..
	Grand Total ..	555.00	180.00	95.00	97.00	114.00	119.00

19. ROADS.

The National Approach to road development aims at providing all-weather roads by the end of Fifth Plan to all villages having a minimum population size of 1,500 or more. In tribal and backward areas where the population is relatively more dispersed, a cluster of villages having population of 1,500 or more is to be taken up for the purpose of providing all-weather link roads. Provision of rural roads on this scale is considered essential for giving further impetus to the development and the improvement of the quality of life in the more backward areas.

So far as other schemes for road development are concerned, the approach lays stress on giving priority to spill-over works of the Fourth Plan subject, however, to thorough scrutiny and screening of such schemes before proposing their continuation so that more important alternative works may be accommodated in their place wherever possible. Priority is to be given to removing the deficiencies in the existing road system by providing for missing links, missing bridges on important river crossings, replacement of existing sub-standard structures such as weak and narrow bridges or weak pavements and development of supplementary facilities through widening of roads to two-lanes, by-passes, replacing busy railway level crossings with over/under bridges etc.

REVIEW :

In the State priorities broadly follow what is set out in the national approach. However stress is laid on area planning approach for road net work in tribal areas, and full advantage being taken of Central sector schemes. Ayacut roads have been discussed separately.

In the Fourth Plan an amount of Rs. 11.25 crores is likely to be spent, out of which Rs. 1.17 crores relates to rural roads and Rs. 10.08 crores to other roads. The smaller size of the provision for State roads as well as the relatively smaller provision for rural roads is attributable to paucity of funds in the light of demands for completing major irrigation and power projects. However, the expenditure on the rural roads has been supplemented in Telangana by works undertaken from the special development funds and special programmes like D.P.A.P. and Crash Programme for Drought Relief financed by Central Government, all of which added upto an outlay of about Rs. 18 crores. The achievements under P.W.D. roads consisted mainly of improvements to existing roads, while under rural roads 5,800 Kms. of new roads have been laid besides metalling 1,950 Kms. At the end of the Fourth Plan, the total road length in the State is expected to rise to about 70,000 Kms. giving a coverage of only 25 Kms. per 100 Sq. Kms. of area as against the existing All India average of 28 Kms. and as much as 40½ Kms. in Tamil Nadu and 30 Kms. in Mysore which may further go up by the end of the Fourth Plan.

TOTAL DIMENSIONS :

Out of a total number of 26,714 inhabited villages in the State, it is expected that by the end of the Fourth Plan only 10,507 villages will be having all weather roads, while 7,517 villages are expected to have fair weather roads leaving a balance of 8,690 villages which do not have any road connections and which are at present having only cart tracks or footpaths. In order to connect all the villages by all-weather roads, it would be necessary to lay about 50,530 Kms. of new roads besides metalling 33,900 kms of existing fair-weather roads which is expected to cost about Rs. 342 crores. In addition, the cost of upgrading the existing P.W.D. roads as estimated at the time of commencement of the Fourth Plan worked out to about Rs. 276 crores which will undergo further upward revision due to inflation of costs and prices. Thus the problem of road development facing the State is of staggering proportions.

OBJECTIVES AND STRATEGY :

The objectives of road development are :

- (a) to provide rural roads to important villages which are unconnected by road ;
- (b) to improve the road links in respect of important villages particularly Service centres and Central villages
- (c) to open up backward tribal areas through a network of roads ;
- (d) to complete the major roads already taken up ; and
- (e) to carry out improvements to important State roads on the basis of the traffic load.

Under the Minimum Needs Programme, it is proposed to form about 4,624 Kms. of new rural roads at a cost of about Rs. 20 crores to connect all 997 villages having a population of 1,500 or more which do not have any road connections by the end of the Fourth Plan. However, the Minimum Needs Programme does not include any scheme for upgrading about 9,950 Kms. of existing fair weather roads connecting 2,259 villages having more than 1,500 population, the cost of surfacing which is estimated at about Rs. 26.50 crores. Thus in the absence of any special assistance, it will not be possible for the State to achieve the objective of providing all weather roads even to all the large villages having more than 1,500 population by the end of Fifth Plan. The strategy of over-all development of the economy requires that at least the larger population settlements should be opened up by providing all-weather roads so that they may be connected by motorable roads facilitating larger flows of traffic and greater decentralisation of productive activity and social services and facilities which may be availed of by a larger proportion of rural population. The backward areas of the State would get special attention as lack of transport is a basic deficiency in the infra-structure in these areas and has to be tackled if the imbalances are to be reduced.

The Planning Commission have allotted Rs. 10 crores for laying of new roads and upgrading existing sub-standard roads in the tribal areas as against about Rs. 25 crores required for the purpose. The development of tribal areas is an acute problem of large dimensions which does not brook delay and cannot wait till the financial position of the State improves. In view of the social stresses and strains involved in neglecting the development of tribal areas and the special obligation of the Central Government in this regard, it is hoped that the programme for the development of tribal roads will be undertaken on a more urgent basis with greater outlays if need be.

PROGRAMME DETAILS :

The Fifth Plan provides for Rs. 37 crores for Road development in the State. The details are as follows :

	Rs. in crores.
(a) Minimum Needs Programme :	
(i) for Rural Roads	20.00
(ii) for Tribal Roads	10.00
(b) Other Rural Roads in State Plan	2.00
(c) Major Roads—(Roads and Buildings Dept.)	25.00
	57.00

(a) The Minimum Needs Programme for road development works out to Rs. 20 crores for rural roads, for laying 4,624 kms. of new all-whether roads of which about 2,000 Kms. will be in black cotton soil areas, 650 Kms. in areas of high density rainfall and 1974 Kms. in other areas. The detailed proposals under this programme are being prepared.

(b) Towards spillover commitments of rural roads already taken-up, an amount of Rs. 2.00 crores is proposed. This will be executed, by Chief Engineer (Panchayati Raj).

(c) Under the Chief Engineer (Roads and Buildings) who operates on major roads as much as Rs. 11.40 crores relates to spill-over schemes and untouched works of Fourth Plan while another Rs.3 crores is for improvements to roads in Nagarjunasagar area. There is also a provision of Rs. 2.33 crores for improving the roads connecting the State capital with District Headquarters and Rs. 1.20 crores for effecting improvements to long distance routes on which the nationalised road transport services are operated. Roads in the delta area are in poor condition and they suffer from numerous deficiencies but a provision of only Rs. 1.80 crores could be made for effecting improvements to the more important delta roads in the Fifth Plan period. The break-up of the programme for P.W.D. roads is given below according to which schemes costing Rs. 40 crores will be taken up in the Fifth Plan period the actual outlay on which will, however, be restricted to Rs. 25 crores.

The details are as follows:

(Rs. in Lakhs.)

<i>Serial No.</i>	<i>Scheme.</i>	<i>Total cost.</i>	<i>Fifth Plan outlay.</i>
(1)	(2)	(3)	(4)
1.	Spill-over schemes from Fourth Plan ..	789.70	789.70
2.	Untouched works of Fourth Plan ..	351.02	351.02
3.	Improvements to roads in Nagarjunasagar ayacut area.	500.00	300.00
4.	Improvements to delta roads ..	300.00	180.00
5.	Improvements to roads connecting State capital with District Headquarters. ..	495.00	233.00
6.	Improvements to long distance routes recommended by A.P.S.R.T.C. ..	435.00	120.28
7.	Important bridges and by-passes. ..	330.45	56.00
8.	New Schemes including unforeseen and urgent works.	398.83	120.00
9.	Tools and Plant.	200.00	150.00
10.	Establishment	200.00	200.00
TOTAL		4,000.00	2,500.00

It is also proposed to provide for research and traffic surveys in Fifth Plan period. Though traffic counts are conducted by the P.W.D. about once in two years, the large volume of data that is gathered could not be processed and analysed systematically. There is, therefore, need for setting up a traffic cell in the office of Chief Engineer (R. & B.) for processing and systematically analysing and interpreting the traffic data and also for further streamlining the collection of data regarding traffic on different roads. It is proposed to take up the survey estimated at a cost of Rs. 50.00 lakhs within the provision made for establishment.

CO-ORDINATION, ADMINISTRATIVE AND ORGANISATIONAL ISSUES :

At present the roads in the State are under the control of different agencies viz., P.W.D., P.R. and Forest Departments. The Public Works Department roads are under the control of Chief Engineer, Roads and Buildings, and the total road length under this agency is about 22,000 Kms., mostly comprising of National Highways (over

2,000 Kms.), State Highways (about 6,000 Kms.) and Major District Roads (13,000 Kms) besides 1,000 Kms. of Other District Roads. The Chief Engineer, Panchayati Raj, has under his control about 21,000 Kms. of roads out of which about 3,000 Kms. are Major District Roads, 12,000 Kms of Other District Roads and 6,000 Kms., of Village Roads. The Panchayat Samithis have about 15,000 Kms. of roads mostly village roads and a small length of other district roads, and these roads are also under the jurisdiction of Chief Engineer (P.R.) in an indirect way. It appears desirable to transfer all the major district roads to the Chief Engineer (R. & B.) to be upgraded to P.W.D standards since most of them are sub-standard roads and some of them are even unsurfaced. The Chief Engineer (P.R.) may have only other district roads and village roads of Zilla Parishads and Panchayat Samithis. The Chief Engineer (P.R.) also deals with other works such as rural water supply. There is need for establishing and developing appropriate linkages between different types of roads like National Highways, State Highways, Major District Roads, Other District Roads and Village Roads administered by different agencies in order to have an efficient and well knit transport system. The proposed traffic cell in the office of Chief Engineer may be entrusted with the task of collecting and maintaining particulars of roads under all the agencies in the State. It may be developed into a Traffic Studies Co-ordination and Road Planning Cell to cover all types of roads under different agencies and the Chief Engineer incharge of Public Works Department Roads may look after Co-ordination.

CENTRAL SECTOR SCHEMES :

(a) National Highways:

So far as the programme of National Highways is concerned which is in the Central sector, the anticipated outlay for the Fourth Plan is estimated at about Rs. 25.43 crores. The Centre approved schemes costing Rs. 37 crores with a plan allocation of Rs. 25 crores which leave a spill-over of Rs.12 crores into the Fifth Plan. Additional proposal have been submitted to the Government of India for an outlay of Rs. 40 crores, thus the aggregate outlay on National Highways in the Fifth Plan period will be Rs. 52 crores as indicated below:

<i>Schemes</i>	<i>Cost.</i> <i>(Rs. in crores.)</i>
I. <i>Spill-over Schemes.</i>	12.00
II. <i>New Schemes:</i>	
1. Strengthening the reaches which are being or will be widened to two-lanes as per the Fourth Plan.	6.76
2. Strengthening the weak reaches which were double lane in the beginning of the Fourth Plan.	3.18

(Rs. in crore.)

3. Construction of by-passes around congested — towns or improvements as permanent suitable links.	11.72
4. Replacing Railway level crossings with over/under bridges.	4.35
5. Widening the roads to four lanes	3.50
6. Replacing submersible major bridges/ vented cause ways by high level bridges (amount as suggested by G.O.I.).	3.23
7. Reconstruction of weak and narrow bridges — (amount as suggested by G.O.I.).	5.55
8. Construction of bridge over river Krishna near Vijayawada (second bridge).	2.00
Total New Schemes	40.29
Total	52.29
Or	52.00

(b) Roads of Inter-State and economic importance :

Proposals for 14 road and bridge works at a total estimated cost of Rs. 11.33 crores were sent to Government of India in November, 1972 and their approval is awaited. In addition, an amount of Rs. 0.36 crore is required towards spill-over schemes. The entire amount may be sanctioned as loan assistance as per the revised pattern of financing the programme.

Central Road Fund Schemes:

It is anticipated that an amount of Rs. 148 lakhs will be available from the Central Road Fund for financing the schemes under this head during the Fifth Plan period based on previous allocations. Out of this amount, Rs. 56.50 lakhs is required for spill-over works. Therefore new works costing about Rs. 140 lakhs will be taken up within the balance of provision of about Rs. 91.50 lakhs.

Employment Potential :

The employment potential of the road programmes is estimated at about 70,000 additional jobs in the Fifth Plan period as indicated below:

Category.	No. of additional jobs.		
	P.W.D. (R.&B.)	P.R. Dept.	Total.
Administration	573	..	573
Technical	363	189	552
Skilled	11,170	4,400	15,570
Semi-Skilled	25,810	30,000	55,810

20. ROAD TRANSPORT.

ANDHRA PRADESH STATE ROAD TRANSPORT CORPORATION :

The Government of India and the Government of Andhra Pradesh have accepted it as a policy to progressively bring the passenger transport into the public sector. From the beginning the passenger road transport services in Telangana region (which formed part of former Hyderabad State) were in the nationalised sector and the Government of Andhra Pradesh established Andhra Pradesh State Road Transport Corporation with effect from 11-1-1958, for extending the nationalisation to other districts. Since the Nizam's State Railway was operating the Road Transport Services in Hyderabad State, an arrangement was made at the time of federal financial integration for the Government of India to make a matching contribution to the share capital of the State Road Transport Corporation along with the State Government. At present the Andhra Pradesh State Road Transport Corporation is operating services to the complete exclusion of private operators in all the nine districts of the Telangana and Krishna, Guntur and West Godavari districts and in the Taluks of Prakasham district which were formerly in Guntur district. Apart from the district services, the town services in the Twin Cities of Hyderabad and Secunderabad, Hanumakonda and Kothagudem are also being operated by the Corporation. The town services in the rest of the towns and fair weather routes in the nationalised districts are still being operated by private operators. The operations of private operators are governed by the conditions stipulated in the approved schemes in the respective areas.

The Corporation is also operating a few long distance routes to connect all the district headquarters and other important places in the State with the Capital and the pilgrim centre of Tirupathi. They are to-day having about 2,400 vehicles operating about 2,150 schedules in these districts.

The Andhra Pradesh State Road Transport Corporation could not make much progress in the sphere of nationalisation due to paucity of funds. However, since 1971-72 the State Government has been contributing capital at the rate of about Rs. 65 lakhs per annum with the Central Government also making its matching contribution. With the funds thus available the Corporation has launched a programme of nationalisation involving about 350 vehicles and expect to implement it by the end of Fourth Plan period.

PROGRAMME DETAILS:

The Corporation has prepared plans to complete the nationalisation of passenger transport in the State by 1978-79. The Corporation has laid down the following guidelines for implementing the programme of

aking over new routes :

1. Routes connecting district headquarters and other important places with each other ;
2. Inter-State Routes ;
3. Routes in Kurnool and Prakasam districts in which there is already partial nationalisation ;
4. Other routes for preserving the integrity of nationalisation.

The Corporation has prepared a plan of nationalisation according to the above principles and proposes to bring the passenger transport in all the district services into its fold by the end of Fifth Plan Period.

The transport services in the other districts of the State are at present being provided by the private operators. The private operators are now operating about 2,030 vehicles in the rest of the State, apart from the fair weather routes operated within the nationalised area and town services. The extent of nationalisation achieved so far is about 54% by area, 55% by population, 45% by fleet (district services) and about 60% by kms. operated.

For achieving complete nationalisation of passenger transport in the State, the Corporation will be requiring about 2,030 additional vehicles. For effective control and provision of base of operation near the routes, it will be requiring 35 depots in the rest of the State at the rate of one depot for every 50 vehicles (Cost Rs. 350 lakhs). To provide the necessary repair and service facilities for this fleet it will be requiring two more workshops (Rs. 50 lakhs) and two more tyre retreading units (Rs. 10 lakhs) and stores inventories of Rs. 130 lakhs have to be provided for running the workshops and depots smoothly. The extension of nationalisation to the entire State would also require the formation of 7 more divisions with about 35 operational units.

The 2,150 Schedules that are under operation now will require about 350 vehicles an year for replacements. It has been assessed in the light of the previous experience of the Corporation that the growth rate of traffic on the existing routes and the routes that will be developed from time to time will be around 5% and this needs about 100 vehicles an year. Thus for carrying on the operations satisfactorily in the existing nationalised area, the Corporation will be requiring about 450 vehicles per year for replacements, augmentation and expansion within the nationalised area. Construction of about 10 additional depots, one more workshop and tyre retreading shop to house and maintain these vehicles (Rs. 137 lakhs) is necessary.

The Corporation has not so far bestowed adequate attention towards passenger amenities. The objectives of nationalisation will not be completely fulfilled without providing adequate passenger amenities. To provide adequate passenger amenities throughout the State, the Corporation will be requiring about Rs. 500 lakhs out of which an amount of Rs. 300 lakhs is proposed to be spent during the next plan period.

The Corporation will require at least about Rs. 63.68 crores during the Fifth Plan period for implementing the programmes described above, even assuming that other institutional sources of finance can be explored. Out of these Rs. 63.68 crores, the Corporation will be able to mobilise through internal resources an amount of Rs. 43.00 crores leaving a balance of Rs. 20.63 crores to be financed by the State and Central Governments. Hence the position is :

				(Rs. Crores)
Internal Resources	..	..	..	43.00
State Government	..	..	..	13.80
Central Government	..	..	..	6.88
Total				63.68

If the State Government continues to contribute the capital at the level it had been doing during the later part of Fourth Plan period, an amount of Rs. 622 lakhs would have been made by it. It is proposed to increase the State Government's contribution during the Fifth Plan period to make a total contribution of about Rs. 13.80 crores to which the Central Government will make a matching contribution of about Rs. 6.88 crores.

INTER-SECTORAL/DEPARTMENTAL LINKAGES :

The Andhra Pradesh State Road Transport Corporation is operating about 400 City Services in the Twin Cities. The operation of city services is a losing proposition for the following reasons.

- (i) Low vehicle utilisation due to operation on heavily congested roads with frequent stops resulting in higher cost of operation.
- (ii) Uni-Directional traffic.
- (iii) Heavy traffic during the peak hours requiring larger number of vehicles which have to be kept idle during most part of the day.

Because of operating these vehicles at low utilisation the cost of operation of these services is about 160 paise per km. against an income of 125 paise (after the recent fare revision) leaving a net shortage of about 35 paise per km. With a monthly operation of about 22 lakh kms. the loss is about Rs. 8 lakhs per month or about rupees One crore per annum.

Apart from the built-in impediments for a better vehicle utilisation, there are other factors due to which the vehicle utilisation is falling year after year, as for instance, narrow roads, increasing volume of slow moving traffic, hawkers and vendors swarming the roads, absence of off street parking places, absence of parking places for goods vehicles, contract carriages and taxies, absence of traffic islands and automatic

signals at important road junctions, insufficient bridges across river Musi, insufficient bus bays and bus terminals, absence of parallel roads to enforce one-way traffic, unduly long detention at Railway level crossing and a number of low railway bridges preventing the operation of double-deckers.

It is therefore, necessary to take up the development works in the twin cities to improve this situation on easing congestion on the roads by taking action on the points mentioned above.

SPECIAL FEATURES :

Employment :

It has been widely recognised that the capital required for creation of a unit of employment is quite low in the transport. With the implementation of the Schemes mentioned above, the additional employment potential created will be to the extent indicated below

<i>Category</i>	<i>No. of additional posts:</i>			
Administrative	4,700
Technical & Professional	600
Skilled & Semi-skilled	17,500
Un-skilled	4,000

Backward areas :

The private operators operating their services in the non-nationalised areas of the State are at present limiting their services to the main road and it is expected that with the large scale nationalisation of the existing routes, these private operators will take up routes in the interior and provide transport facilities for the villages which are not having any such facilities at present.

21. MINOR PORTS AND INLAND WATER TRANSPORT.

I. PORTS :

1. The State of Andhra Pradesh has a long coastline of nearly 1,000 Km. The only major port of the State is located at Visakhapatnam. Besides the above, there are 7 intermediate and minor ports in the State administered by the State Government. The ports of Kakinada (East Godavari) and Machilipatnam (Krishna) are known as intermediate ports which conveys a meaning that these ports handle more than one lakh tonnes but less than 10 lakhs tonnes per annum. The other 5 minor ports are located at Calingapatnam (Srikakulam district), Bheemunipatnam (Visakhapatnam district) Narsapur (West Godavari district), Vadarevu (Prakasam district) and Krishnapatnam (Nellore District). Out of these ports, only the port of Kakinada is handling shipping at the rate of about half-a-million tonnes per annum of exports and imports of commodities like iron ore, pig iron, tobacco, rice bran, oil cakes, palmyrah fibre etc., (all exports) and Rockphosphate and fertilisers (Imports). Handling of shipping is not steady at the port of Machilipatnam. The other minor ports are not handling any shipping at present. The main cause for inactivity at most of our ports is lack of adequate port and other infrastructure facilities to handle commodities produced in the hinterland of the ports. It cannot be said that these ports are lacking in export potential. It is a well known fact that the State is rich in agricultural wealth as well as mineral deposits.

REVIEW :

During the Fourth Plan, more stress was laid than hitherto on the development of ports. The Central Government have sanctioned the development of Kakinada port under Centrally Sponsored schemes by giving loan assistance to an extent of Rs. 100 lakhs for the entire plan period while the State Government took up development of Machilipatnam port under the State Plan sector with an outlay of Rs. 50 lakhs.

The developments contemplated at the port of Kakinada in Fourth Plan are :

1. Dredging of the approach channel to enable uninterrupted boat navigation between innerport and ships at anchorage.
2. Acquisition of maintenance dredger.
3. Provision of five mechanised barges of 1,250 tonnes capacity for augmenting the port fleet.
4. Provision of navigational aids ; and
5. Expansion of the port towards the East of the present port to relieve congestion in the old port area.

As regards the port of Machilipatnam the progress of plan works is not vigorous in view of the fact that the required steel for the

project works could not be obtained inspite of considerable efforts by the State Government. Only the item of slope protection works is taken up during Fourth Plan period with an outlay of Rs. 50 lakhs, the total cost of work being 59.36 lakhs. It is likely that by the end of the Fourth Plan period a part of the work would be completed but the physical target could be achieved only with the provision of the facilities. Thus the port will be requiring atleast Rs. 170 lakhs to complete the entire scheme during the Fifth Plan period and thus achieve the physical target set forth for this port to handle half-a-million tonnes annually.

OBJECTIVES AND STRATEGY :

Though the State has a long coastline of about 970 kms., it does not have proper port facilities since the only major port is situated in the extreme north at Visakhapatnam whose hinterland extends to Madhya Pradesh and Orissa. South of Kakinada there is no port facility worth mentioning for the rest of the coast line. Coast line is a national asset and the benefits of expansion of port facilities are not confined to any particular State in which they are located. It would be generally advantageous for the east-bound traffic to Japan and other countries to be routed through the easter ports even if such traffic emanates from outside the State. There is also considerable scope for Coastal shipping to ease the pressure on railways by diverting cheap and bulk cargoes to ports. Thus apart from purely local considerations such as the inadequate coverage of port facilities in the State, there is need for development of the ports along the State's long coastline on the basis of wider considerations like the country's expanding foreign trade with Japan and far east as also transport co-ordination between different modes like railways, roads and shipping. There is also need to provide adequate outlets for the massive surpluses that would be generated in the middle and southern regions of the State as it would be uneconomical for the produce to be routed through distant ports. The establishment of ports close to the hinterland would also encourage exploitation of the State's unexplored universal wealth and this would incidentally help reduce the existing regional imbalances in the State to some extent.

Therefore, the main objectives of the ports sector are to develop the ports of Kakinada, Machilipatnam and Krishnapatnam to cater to the present estimated export potential of nearly four million tonnes, over half of which constitute valuable foreign exchange earning exports. With the development of these ports, the State would have self-sufficient adequate port facilities for handling the increased production of the coast hinterland.

The port of Kakinada, which has the northern districts of the State as its hinterland has a potential of about 3 million tonnes, the port of Machilipatnam with the central districts of the State in its hinterland has a potential of half-a-million tonnes and the port of Krishnapatnam which has its hinterland in Nellore and the entire Rayalaseema has a potential of over 3 lakh tonnes.

PROGRAMME DETAILS :

The total allocation for the Fifth Plan is Rs. 270 lakhs.

It is proposed to carry out the spillover schemes of Machilipatnam at Rs. 170 lakhs and take up the works at Krishnapatnam at Rs. 100 lakhs. The works proposed in regard to Machilipatnam are as follows :

Sl. No.	Name of work	Cost (Rs. in lakhs)
1.	Construction of about 1,000 ft. long R.C.C. Jetty to house a 350 tons capacity sand pump with the required motor and auxiliaries mounted on rails for mobility	31.00
2.	Sand pump of 350 tons per hour capacity with Motor and auxiliaries (Approximate trade etc.)	31.00
3.	Construction of stone groyne at the approach channel extending eastward to a length of about 1,000 ft. to provide shelter for harbour craft negotiating the approach channel	28.50
4.	Extension of power supply from the inner port to the proposed pier to a distance of approximately 3 miles	0.38
5.	Cost of pitching and slope protection works on the northern side of sand spit	42.89
6.	Capital dredging for channel	28.00
7.	Closing of mouths on the shore line	5.00
8.	Provision of cargo boats	8.67
9.	Special tools and plants	4.56
Total ..		170.00

In regard to Krishnapatnam Port the Development works proposed in Fifth Plan areas follows;

Sl. No.	Name of work	Cost
		<i>(Rs. in lakhs)</i>
1.	Survey and investigation	4.00
2.	Staff	2.00
3.	River training Works	80.00
4.	Port Craft 1 tug, 1 launch and 1 gard dredger	10.00
5.	Cargo boats	15.00
6.	Slipway and workshop	10.00
7.	Workshop machinery	1.00
8.	Improvement to present roads	1.50
9.	Extension of approach roads	2.00
10.	Additional stacking yards	1.00
11.	Capital dredging	7.00
12.	Transit shed	8.00
13.	Staff quarters	2.00
14.	Land acquisition	1.00
15.	Navigational aids	3.00
16.	Jetties for port craft	1.50
17.	6 R. C. C. Jetties	2.00
18.	Water and Power	4.00
	Total ..	100.00

CENTRALLY SPONSORED SCHEMES :

The development of Kakinada port had assumed added importance in view of the decision since taken by Government of India to set-up Fertilizer Plant at Kakinada, which require import of oil, Rockphosphate and Sulphur to the tune of 1.5 million tonnes annually and which would be ready by 1977-78. The technical committee headed by Sri Gole had envisaged 1.5 millions tonnes by 1977-78. Thus the total handling capacity of this port (both import and export) would have to be increased to 3 million tonnes by 1977-78, and developmental activities have to be planned on a large scale and more speedily than envisaged in the Gole Committee report.

Thus the allotment of Rs. 6.70 crores by the Government of India for the development of Kakinada port during Fifth Five-Year Plan as urged by this Government, to reach 1.5 million tonnes by 1977-78, as per Gole Committee Report would be tentative in view of the decision to locate port based fertilizer plant. A greater allocation by Government of India would be needed which would be assessed only after conducting the combined techno economic feasibility study and preparation of detailed project report by the Consultants.

The detailed schemes proposed to be taken up in the Fifth Plan under Centrally Sponsored Schemes in respect of Kakinada port are as follows :

Sl. No.	Name of the work	Cost (Rs. in lakhs)
<i>Spill-over</i>		
1.	Means of transportation between inner port and anchorage (Providing of 8 mechanised barges)	25.00
2.	Along side facilities like wharves and jetties	15.00
3.	Stabilisation of sand spit	10.00
	Total	50.00

[Statement.]

The following are the new schemes for Fifth Plan period recommended by the Kakinada Port Technical Committee for the Development of Kakinada port

Sl. No.	Name of work	cost (Rs. in lakhs)
<i>New Schemes</i>		
1.	Preliminaries, consultancy survey and investigation	5.00
2.	Capital dredging	70.00
3.	Reclamation and connected works	20.00
4.	Acquisition of a dredger for maintenance of sand trap, approach channel and anchorage	200.00
5.	Mechanised barges (Five Nos.)	60.00
6.	Craft for towing and despatch duties (Two Nos.)	20.00
7.	Wharves 184 m. (2,000 ft.)	58.00
8.	Transit sheds (Seven Nos.)	38.60
9.	Vegetable oil tanks	2.50
10.	Jetty for port Craft	1.50
11.	Cranes (Two Nos.)	10.00
12.	Light Rly. and sidings	2.00
13.	Loads for light Rly. (Four Nos.)	6.00
14.	Tubes for light Rly. (Sixty Nos.)	7.20
15.	Railway sidings	10.00
16.	Roads	20.00
17.	Slipway	12.00
18.	Extension of workshop facilities	2.00
19.	Navigation aids, moorings and signal station	3.00
20.	Water supply and drainage	5.00
21.	Power supply	5.00
22.	Staff quarters	24.00
23.	Police and fire Station	0.50
24.	Labour Welfare facilities	1.00
25.	Plantation of avenue trees	1.00
26.	Tools and Plant	5.60
27.	Establishment, Contingencies and Miscellaneous	30.00
Total ..		620.00

II. INLAND WATER WAYS.

There are a number of rivers in Andhra Pradesh. Of these, the important ones are the Godavari, the Krishna and Sabari. In addition to these rivers, there is a net work of canals in the Krishna—Godavari deltas and the Buckingham Canal. The total length of navigable waterways in this State is about 2,343 Kms.

The Canals in the Krishna-Godavari delta systems and Buckingham Canal serve to transport the commodities like salt, firewood, foodgrains, coconuts, iron ore, sugarcane and building materials, etc., as this is a cheap mode of conveyance. Transport by canals is also advantageous as it goes a long way in relieving traffic congestions on road and railways. In view of this the Government of India has set up an Inland Water Transport Committee under the Chairmanship of Shri B. Bhagavathi (Member of Assam Legislative Assembly) to study the existing water transport problems of the country and to suggest a phased programme of development. This Committee has represented, after fully studying the problems, certain schemes for development of Inland Water Transport under Fourth and Fifth Five Year Plans, which are dealt with in the following paragraphs.

REVIEW :

The Bhagavathi Committee has recommended to the Government of India, the following schemes for implementation during Fourth Five Year Plan :

	(Rs. lakhs)
(i) Restoration of Buckingham Canal (Stage I) ..	49.60
(ii) Construction of tidal lock at M. 37/7 of Bendamuru— lanka Canal (Stage I) Central Delta.	4.43
(iii) Conversion of Kalipatnam Main Channel from 4/7 tail- end into a Navigable Channel including construction of a tidal lock at tail end to connect with Upputeru river.	5.30
(iv) Construction of two locks at head of Upper Pulleru and Vuyuru Weir in K.F.E. Deltas on Pulleru Canal.	6.20
(v) Construction of Wharf at Amalapuram on Benda Canal.	1.00
Total ..	66.53

Accordingly, the Government of India have sanctioned the schemes and works have already been started. In regard to Buckingham Canal (Stage I) tenders have been settled for a number of reaches. The work is also commenced. An experimental reach from M. 122/6 to M. 123/6 has already been completed to arrive at data for preparation of working estimates in other reaches. Orders have been placed for repairs of locks with P.W.D. Workshops. The expenditure up to the end of March, 1973 is Rs. 16 lakhs. The Wharf at Amalapuram is almost completed. The revised estimate for Tidal lock at Bendamurulanka has been submitted to the Government for approval. In the meantime, the Superintending Engineer has been asked to start the work.

The remaining two works will be taken up during the year 1973-74.

PROGRAMME DETAILS :

The Fourth Plan schemes sanctioned by Government of India, total to Rs. 66.53 lakhs. The allotment during 1972-73 and 1973-74 is respectively Rs. 20 lakhs and Rs. 25 lakhs, i.e., a total of Rs. 45 lakhs. This leads to a spillover of Rs. 21.85 lakhs into Fifth Plan. If the probable excess of Rs. 30 lakhs in the sanctioned estimates is also taken into account, the total spillover commitment in the Fifth Plan may be about Rs. 51.85 lakhs.

The Bhagavathi Committee has recommended the following three schemes for inclusion in Fifth Plan :

	(Rs. lakhs).
(i) Deepening and widening of Buckingham Canal ..	249.05
(ii) Lining of Buckingham Canal	321.00
(iii) Lining of Eluru and Machilipatnam Canal ..	200.00
	770.05

On a reference from Government of India, the proposals were submitted to them for including some additional schemes in the Fifth Plan of the State. However, the working group of Government of India dealing with I.W.T. have recommended the inclusion of the following schemes only in the Fifth Plan :

	(Rs. lakhs)
(i) Lining of Eluru and Machilipatnam Canal ..	200.00
(ii) Deepening and widening of Buckingham Canal ..	249.05
(iii) Lining of Buckingham Canal	321.00
(iv) Improvements to existing workshop and establishing new workshops for repairs and manufacture of boats, etc.	23.00
	793.05

Again in the first meeting of Central Inland Water Transport Board, held in New Delhi on 16th February 1973, it was suggested by the Chairman of the Board that if the State Government feel that the Working Group has not fully taken into account the various schemes in their report and that some of these are left out, they may send additional schemes. Accordingly the following revised list of

proposals for inclusion in the Fifth Plan has been sent to the Government of India :

	Original Cost. Rs. lakhs.	Revised Cost. Rs. lakhs.
1. Deepening and widening of Buckingham Canal.	249.05	280.00
2. Lining of Buckingham Canal	821.00	516.00
3. Lining of Eluru and Machilipatnam Canals	200.00	437.00
4. Setting up of New Workshops and improvements to existing workshops.	23.00	23.00
5. Lining of Kommamur Canal .. ..	..	261.00
6. Lining of Kakinada Canal .. ..	..	184.00
7. Spillover Commitments to Fifth Plan from Fourth Plan.	..	51.85
	<hr/>	
Total ..	793.05	1,702.85
	<hr/>	

Man Power :

The execution of Inland Water Development Schemes is expected to provide employment to about 3,500 persons.

22. TOURISM.

Andhra Pradesh abounds in places of tourists' interest. The State with a long coastal line of 600 miles has many stretches of beaches which could be developed into excellent places of tourist attraction. The State has also a large number of important tourist and pilgrim centres such as Nagarjunasagar, Visakhapatnam, Warangal, Tirupati, Srisailam, etc. There are some important hill resorts such as Horsley hills, and Araku valley. At present the tourist facilities at many of these places are inadequate to cater to the increasing demand. It is, therefore, proposed to strengthen these facilities in the Fifth Plan period for which a provision of Rs. 37 lakhs is made in the Plan. The schemes which are proposed to be taken up with this outlay are shown below :

<i>Schemes</i>	<i>(Rs. in lakhs)</i>
1. Construction of tourist Rest Houses at Visakhapatnam, Kotappakonda, Amaravathi, Kondapalli, Rajahmundry, Tupilipalem, Kurnool and Nizamsagar	12.50
2. Improvements to Rest Houses at Srisailam, Horsley Hills, Ahobilam, Mahanandi, Pakhal, Alampur, Ramappa and Nagarjunasagar ..	7.00
3. Development of Vadarevu beach, Suryalanka beach and Mypad beach	3.00
4. Development of Ethipothala and Pochara Water falls	1.50
5. Development of Edurumondi Island ..	1.00
6. Improvement to Tourist facilities at Rangapuram, Lepakshi and Yadagirigutta ..	2.50
7. Introduction of Tourist Coach at Tirupathi ..	1.00
8. Construction of Tourist Bureau at Warangal ..	1.50
9. Beautification of Hussainsagar	1.00
10. Production of Tourist literature	4.00
11. Tourists' festival celebrations	2.00
Total ..	37.00

It is proposed to develop Nagarjuna Sagav as an international tourist centre and construct a 5 star hotel at Hyderabad by the India Tourism Development Corporation.

23. GENERAL EDUCATION.

The General Education sector in the State Plan covers School and collegiate education, Public Libraries and State Archives.

National Approach :

National policy on education envisages the orientation of the educational system in the country into a powerful one for social transformation, economic growth, modernisation and national integration. This could be done by providing universal free compulsory elementary education and general education to create the required attitudes and climate, and secondly by ensuring that the system produces the requisite skilled manpower for specified tasks of development. According to our Constitution, the children upto the age of 15 should be provided with free and compulsory education within a period of ten years after commencement of the constitution. This could not be complied so far.

The anticipated enrolment in the State at the end of the Fourth Plan will be 88 per cent in the age group 6-11 and 40 per cent in the age group 11-14 years for the country as a whole.

According to the Approach Document, in the Fifth Plan, it should be possible to provide facilities for enrolment of 100 percent children of 6-11 age group and 60 percent#50 percent on full time basis and 10 per cent on part-time basis for the age group 11-14. It was also envisaged that inter-regional disparities should be narrowed down and special measures should be taken for tackling the difficulties relating to enrolment of girls.

In geographical terms, the objective stated in the Approach is to have a primary school within 1.5 Km. and a middle school within 5 Km. of each village. Expenditure on construction of class rooms and Ashram schools for tribal children have to be stepped up.

In regard to Secondary education, the national approach is to expand the facilities for secondary education to meet the social demand. Exphasis would be to accelerate the expansion of facilities in backward areas and among backward sections of the community and girls. Need for curricular reorientation and vocationalisation is also stressed

Under University education, emphasis should be laid on the improvement and consolidation rather than on institutional expansion. Stress should be laid on expansion of library, laboratory and other physical facilities in institutions of higher education. New Colleges and Universities have to be established after a careful survey of the needs for them.

TOTAL DIMENSIONS :

Primary Education :

To meet the constitutional provision of universal free compulsory primary education, the enrolment of the boys in age group 6-11 should

go up from the present level of 43 lakhs to 61 lakhs by the end of Fifth Plan. This requires 46 thousand additional teachers at the rate of one teacher per 39 pupils. The estimated teacher costs work to Rs. 35 crores in the Fifth Plan assuming an average salary of Rs. 2,500 per teacher per annum and the incidental non-teacher costs Rs. 5.25 crores. Construction of class rooms requires Rs. 13.8 crores at the rate of Rs. 3,000 per class room. To increase the enrolment of children in the age group 11-13 to 100 per cent by the end of Fifth Plan, the additional enrolment would be 17.3 lakhs requiring about 60 thousand teachers at the rate of one teacher for 29 pupils. This involves Rs. 72 crores teacher costs and Rs. 18 crores for construction of class rooms at the rate of Rs. 3,000 for class room and Rs. 14 crores recurring contingent expenditure.

It is found by experience that mere creation of facilities for education is not resulting in the expected increase in the enrolment particularly in rural under-developed areas. There is need for providing incentives in the form of books, uniforms and mid-day meals to at least 50 per cent of the children in the age group 6-13. The total number of children who have to be provided with these incentives is estimated at 30 lakhs in the age group of 6-11 and 12 lakhs in the age group of 11-13 totalling 42 lakh children. The total outlay required is estimated at Rs. 44 crores in the Fifth Plan period assuming an average of Rs. 25 per pupil per annum

Secondary Education :

The enrolment in Classes VIII to X at the end of 1973-74 is estimated to be 20 per cent of the total population in the relevant age group 13-16. National approach envisages 32 per cent. This involves an additional enrolment of 4.5 lakhs students. At the rate of 30 students per class, there is need to start 15 thousand additional classes which involves a total estimated cost of Rs. 20.25 crores for five years, excluding building costs.

At present there are 3,087 high schools which lack minimum physical facilities and 500 schools which require new buildings. The provision of these facilities requires a total outlay of Rs. 23 crores.

In regard to junior colleges, the State approach is to have one college for each Taluk. All the taluks except 29 are having junior colleges. Further, it is also envisaged to have one women's junior College in each district. All the districts, except three are having women's junior colleges. The total cost of starting 32 new junior colleges is estimated at Rs. 100 lakhs for the five year period during the Fifth Plan.

About 160 colleges in the State are having shortage of staff by 480 Junior Lecturers and deficiency of lab and other equipment. About hundred Junior Colleges require additional accommodation.

REVIEW :

Total expenditure on the General Education since the beginning of the First Plan till the beginning of the Fourth Plan is about Rs. 33.62 crores. The anticipated expenditure in the Fourth Plan is

Rs. 12.93 crores. This has resulted in a substantial increase in the number of educational institutions in the State. The number of primary and upper primary schools increased from 5,933 in 1951-52 to 40,349 in 1970-71, and the scholars increased from 3.76 lakhs in 1951-52 to 39.94 lakhs in 1970-71. It is estimated that the number of scholars would be 49.70 lakhs in the last year of the Fourth Plan. The number of High Schools and Higher Secondary Schools increased from a mere 95 in 1951-52 to 2994 in 1970-71 and the number of scholars increased from 0.62 lakhs in 1951-52 to 9.94 lakhs in 1970-71. The number of Colleges for general education increased from 37 in 1951-52 to 346 in 1970-71.

In spite of this substantial growth in the establishment of institutions and enrolment of scholars, the Constitutional Directive regarding universal primary education could not be achieved so far. The enrolment in classes I to V is estimated to cover only 75.7 per cent of the total population in the age group 6-11 by the end of Fourth Plan as against 88 per cent in All India. The percentage enrolment of boys of the group 6-11 by the end of Fourth Plan is estimated to be 89 and that of girls 62. The enrolment of children of the age group 11-14 in the State by the end of the Fourth Plan is estimated to be only 30 per cent as against 40 per cent in All India. The enrolment in the age group 13-16 is likely to be 6.02 lakhs which forms 20 per cent of the total population in the corresponding age group as against 36.6 per cent in All India.

During the Fourth Plan, 644 primary schools were upgraded into upper primary schools and 1096 trained graduate teachers, 870 language pandits, and 2,711 secondary grade trained teachers were appointed for elementary education. In regard to secondary education, the amount allotted during the Fourth Plan was Rs. 2.01 crores only, most of which was utilised for spillover schemes and improvement of teaching personnel in Zilla Parishad Schools. In addition, three residential schools and two B.Ed. training colleges were also started.

At the higher secondary level, a change has been introduced in 1969-70 by introducing 2 year Intermediate course abolishing the multipurpose higher secondary class and pre-university course. All the existing affiliated Degree Colleges except a few, introduced Intermediate course. Separate Junior Colleges were established throughout the State by upgrading selected former higher secondary schools. All the taluks, except 29, are likely to have atleast one Junior College by the end of the Fourth Plan. There would be 219 Junior Colleges and 148 Degree Colleges having Intermediate course by the end of 1973-74.

OBJECTIVES AND STRATEGY :

Elementary education is one of the subjects included in the Minimum Needs Programme. In the Approach Document, norm set for elementary education was 100 per cent enrolment of boys and girls of the age group 6-11 and 60 per cent enrolment of children of the age group 11-13. The State Government therefore formulated proposals, with these targets, involving an outlay of Rs. 233.82 crores. The Planning Commission, however, allocated a sum of Rs. 37.63

crores only for elementary education in the State and they have also not yet communicated the targets which should be aimed at with this reduced outlay. In the absence of this information, the following objectives have been tentatively adopted :—

- (a) It is proposed to create additional facilities for achieving 100 per cent enrolment of boys and 75 per cent for girls of the age group 6-11 years by the end of the Fifth Plan (which works to an average enrolment of about 88 per cent of all children in the age group) ;
- (b) to create additional facilities for enrolling 50 per cent boys and 30 per cent girls of the age group 11-14 by the end of the Fifth Plan ;
- (c) to enrol 34 percent of the boys and 14 percent of the girls of the age group 13-16 years by the end of the Fifth Plan.

Besides striving to achieve the above targets of enrolment of children it is also proposed to improve the quality of primary and secondary education by—

- (a) improving selected schools by providing minimum facilities;
- (b) constructing buildings for Government primary schools in municipal areas ;
- (c) providing inservice training to teachers ;

Under Intermediate education, it is proposed to :

- (a) expand educational facilities by starting 32 new Junior Colleges so that all taluks will have atleast one Junior College each and all districts have atleast one Women's Junior College ;
- (b) make up shortages of staff and deficiencies in laboratory equipment and accommodation in all Junior Colleges;
- (c) Strengthening 10 per cent of the existing colleges for academic improvement ;
- (d) introduce job oriented courses in selected colleges so that the undue pressure for higher education is relieved and wastage is reduced.

Under Higher Education the objectives are to :

- (a) make up deficiencies in staff, accommodation, and equipment in respect of colleges in urban centres where they have optimum enrolment;
- (b) enhance the facilities for post graduation by opening four new post-graduate Centres and providing matching grants to U.G.C. grants to Universities;
- (c) improve the administration of colleges by separating junior intermediate courses from the Degree Colleges.
- (d) improve the academic standards by :
 - (i) strengthening the pace setting college ;
 - (ii) starting suitable training courses for Collegiate teachers and establishing a special cell for Collegiate Education at State Council of Educational Research and Training.

Most of the above objectives do not require any special strategy except providing necessary outlays for achieving them. However, the achievement of targets relating to enrolment of children in primary education poses special problems which are mainly social and economic. Socially, there is not much of realisation especially in backward areas and for girls about the need for basic literacy and education. This requires considerable persuasion which should be done by the school teacher himself. Unfortunately most of the school teachers particularly at the elementary level lack the zeal to enrol the children for various reasons. As a result there is considerable under-utilisation of facilities. This requires both administrative measures and the incentives to teachers to achieve the targets. Economically most of the rural households depend on child labour. Further, lack of ability to clothe their children and purchase books act., as constraints for sending the children to schools. These inhibitions have to be tackled providing material incentives such as midday meals, school uniforms, book grants etc.

PROGRAMME DETAILS :

The total outlay proposed for general education in the State Plan is Rs. 69.13 crores of which Rs. 37.63 crores is provided under Minimum Needs Programme. The Minimum Needs Programme covers 75 per cent of the total State Plan outlay of Rs. 49.10 crores on primary education. A sum of Rs. 11.50 crores is allotted to Secondary education. Thus, the total allocation for primary and secondary education is Rs. 60.60 crores. Of the rest Rs. 3.50 crores are provided for Intermediate education and another Rs 3.50 crores for higher Education and Rs. 0.25 crores each to Public Libraries and State Archives. A sum of Rs. 1.00 crore is provided for Adult Literacy.

Outlays proposed for different programmes in General Education

S.No.	Sector	Outlay proposed (Rs. in lakhs).
1.	Primary Education	
	(a) Minimum Needs Programme	.. 3,763
	(b) Others	.. 1,150
2.	Secondary Education	.. 1,150
3.	Junior Colleges	.. 850
4.	Higher Education	.. 850
5.	Adult Literacy	.. 100
6.	Public Libraries	.. 25
7.	State Archives	.. 25
	Total General Education :	.. 6,918

Primary Education :

A sum of Rs. 49.13 crores is provided for creating additional facilities for enrolment of 9.88 lakhs additional children in the age-group 6-11 years and 3.35 lakhs additional children in the age-group 11-13 years by the end of the Fifth Plan. Of this, a sum of Rs. 37.13 crores to enrol an additional 9.13 lakh children of the age-group 6-11 and 2.95 lakhs children of the age-group 11-13 is provided under Minimum Needs Programme, details of which are given separately. The balance of Rs. 11.50 crores provision is intended for the following.

Outlays proposed for programmes under Primary education.

S.No.	Scheme	Outlay proposed (Rs. in lakhs.)
1.	Additional facilities for enrolling 75,000 additional children in the age group 6-11 years in class I to V by the end of the Plan ..	164
2.	Additional facilities for enrolling 40 thousand children in the age-group 11-13 years in Classes VI & VII by the end of the Plan ..	196
3.	Reviving 50 training schools ..	250
4.	Inservice training to teachers and provide guide books.	25
5.	Improvement of selected primary schools ..	100
6.	Buildings to primary schools in Municipal areas ..	250
7.	Strengthening of administrative and supervisory machinery ..	150
8.	Pre-Primary education ..	15
	Total :	1,150
	<i>Add : Minimum Needs Programmes</i> ..	3,763
	Total :	4,913

While minimum needs programme covers all new enrolment in districts where less than 100 per cent enrolment was observed, the needs for enrolling 75 thousand children in the age-group 6-11 years and 40 thousand children in the age-group 11-13 years in the districts where 100 per cent enrolment is already achieved will be provided from the rest of the State plan outlay of Rs. 11.50 crores on Primary Education. This requires appointment of 1900 additional teachers for primary classes and 1360 teachers for upper primary classes. This scheme is estimated to cost Rs. 360 lakhs.

To meet the increasing needs of nearly 24 thousand trained teachers for primary education, there is need to revive at least 50 of the 100 closed training schools in the State. This is estimated to cost Rs. 250 lakhs. Further there is need to impart in-service training to existing teachers to improve their faculty. A sum of Rs. 25 lakhs is therefore, provided for in-service training and supplying guide books of teaching.

In order to improve the quality of primary education, it is proposed to improve selected primary schools at an average cost of Rs. 10 thousand each. A sum of Rs. 100 lakhs is provided for this scheme.

Many of the existing primary schools in municipal areas are not having buildings. It is proposed to provide them with buildings at a cost of Rs. 250 lakhs.

In order to ensure proper implementation of the schemes and effective functioning of Educational Institutions, the administrative and supervisory machinery will have to be strengthened adequately. It is therefore proposed to appoint 200 Dy. Inspectors of Schools with necessary staff for increasing the number of surprise visits to the schools, particularly the institutions located in interior places to ensure that teachers attend to their duties regularly. It is also proposed to strengthen the offices of the Directorate and the District Educational Officers by appointing additional Director and the District Educational Officers with the necessary staff for attending to the work relating to elementary education exclusively. The scheme is estimated to cost Rs. 1.50 crores.

Pre-Primary Education :

The facilities available for Pre-School Education in the State are very limited. This field was left to voluntary organisations and in the majority of cases, Pre-Primary Schools are maintained out of the fee collected. These schools are therefore beyond the reach of the under privileged sections of the community and the few facilities available are in the urban areas.

It has been suggested by the Ministry of Education that efforts should be made to provide pre-school facilities so as to cover 3% of the population of the age-group 3-6 during the Fifth Plan. At present not even 1% of the population of the age-group 3-6 has these facilities, and in view of the limited resources available a provision of Rs. 15.00 lakhs is proposed for inclusion in the Fifth Plan to encourage private organisations to run pre-primary schools in rural areas by offering financial assistance to cover a part of recurring and non-recurring expenditure.

Secondary Education :

A sum of Rs. 11.50 crores is provided for Secondary Education, the details of which are as follows :

S.No.	Scheme	Outlay proposed (Rs. in lakhs.)
1.	Additional facilities for enrolling 1.87 lakh children in the age-group 13-16 years in Classes VIII to X by the end of the Plan	836
2.	Minimum physical facilities to existing High Schools.	40
3.	Additional accommodation and buildings to existing schools	50
4.	Residential Schools	60
5.	Improving the existing schools	60
6.	College of Education	24
7.	In-service training	10
8.	Grants-in-aid to private high schools	40
9.	Strengthening of administrative machinery	30
	Total :	1,150

It is proposed to enrol 1.87 lakh additional children in the age-group 13-16 years by the end of Fifth Plan. Of them, 82 thousand students would be accommodated in the existing schools by starting 2,800 additional classes. For the balance 1.05 lakh children 400 new schools would be opened at a cost of Rs. 836 lakhs.

All the 3,087 schools in the State do not have minimum physical facilities. They are proposed to be provided with them, in a phased programme. A sum of Rs. 40 lakhs is provided during the Fifth Plan.

About 500 schools in the State require new buildings. It is proposed to construct new buildings in a phased programme. A sum of Rs. 50 lakhs is provided for this scheme in the current plan.

To improve the standards of secondary education in the State, three residential schools were started during the Fourth Plan.

It is proposed to consolidate them and open two new residential schools and improve 10 per cent of the other schools. These two schemes cost of Rs. 60 lakhs each.

It is proposed to start Secondary Grade Teacher Training Courses in the three B.Ed. Colleges to make them comprehensive colleges of Education at a cost of Rs. 24 lakhs. A sum of Rs. 10 lakhs is provided for in-service training of teachers in the Secondary Schools.

There are 224 schools likely to become eligible for Government grants-in-aid and they require Rs. 75 lakhs. In view of the smaller allocation for this sector, only Rs. 40 lakhs is provided in the Fifth Plan.

The administrative needs of the increased number of Secondary Schools are proposed to be met during the Fifth Plan for which Rs. 30 lakhs is provided.

Junior Colleges :

A sum of Rs. 3.50 crores is provided in the Fifth Plan for Junior Colleges, the breakup of which is given below :

S.l No.	Scheme.	Outlay proposed (Rs. in lakhs.)
1.	New Junior Colleges	100
2.	Making up of shortages and deficiencies in the existing colleges.	100
3.	Buildings and additional accommodation to existing colleges	30
4.	Terminal Job courses in selected Junior Colleges	50
5.	Grants-in-aid to private colleges	50
6.	Academic improvement in selected colleges	20
	Total :	350

During the Fifth Plan period, 32 new colleges are proposed to be started of which three will be of women's colleges. With the opening of these colleges all the Taluks in the State would have at least one Junior College and every district would have one women's College. A sum of Rs. 100 lakhs is provided for this scheme.

Shortages of staff, laboratory equipment etc. in 160 Junior Colleges are proposed to be made up at a cost of Rs. 100 lakhs during the Plan.

It is proposed to provide additional accommodation in 100 junior colleges at a cost of Rs. 30 lakhs.

Terminal job courses in secretariat and other courses are proposed to be introduced in 25 colleges in the State at a cost of Rs. 50 lakhs.

About 20 colleges in the State would be selected for academic improvement by providing ideal conditions regarding teaching and laboratory equipment, etc. at a cost of Rs. 20 lakhs.

A sum of Rs. 50 lakhs is provided for grants-in-aid to private colleges which become eligible during the Fifth Plan.

Higher Education :

A provision of Rs. 3.50 crores is made for Higher Education in the Fifth Plan, the breakup of which is as follows :

S.No.	Scheme.	Outlay (Rs. in lakhs.)
1.	New Colleges for women	40
2.	Buildings and additional accommodation in existing colleges	75
3.	Expansion of post-graduate study facilities	15
4.	Expansion of existing degree Colleges	40
5.	Separation of Intermeidate courses from degree colleges	50
6.	Strengthening of pace setting college at Kurnool	25
7.	Faculty development	5
8.	Grants-in-aid to private colleges	50
9.	Grants to Univeristies	50
	Total :	350

It is proposed to start six women's colleges for degree courses at the rate of one in each of the districts of Cuddapah, Karimnagar, Nalgonda

Mahtabnagar, Medak and Adilabad. With these, all the districts in the State would have at least one women's college. A sum of Rs. 40 lakhs is provided for this purpose.

It is proposed to start post-graduate centres at four more places in addition to the existing three centres. A sum of Rs. 15 lakhs is provided for this purpose.

About 37 colleges in the State have to be provided with additional staff, laboratory equipment, furniture and books to increase their intake capacity. A sum of Rs. 40 crores is provided for this scheme.

Six of the Government colleges in the State require extension of the present accommodation and eighteen colleges require new buildings. A sum of Rs. 75 lakhs is provided for this purpose in the Plan.

Forty-three degree colleges in the State offer courses also in Intermediate class. These colleges have become unmanageable due to excess strength. It is proposed to separate the Intermediate course from the Degree colleges and open them as separate junior colleges by appointing separate Principal and other staff. A sum of Rs. 50 lakhs is provided for this purpose.

Fifteen private colleges started during the Fourth Plan would become eligible for grants-in-aid during the Fifth Plan. A sum of Rs. 50 lakhs is provided for this purpose.

To improve the faculty in the Degree Colleges, College teachers are to be given a suitable course of training. A special cell is proposed to be established in State Council of Educational Research and Training. A sum of Rs. 5.00 lakhs is provided for this purpose.

The pace setting college established at Kurnool is proposed to be strengthened by providing additional hostel accommodation and staff quarters at a cost of Rs. 25 lakhs.

A sum of Rs. 50 lakhs is provided for grants to Universities and their post-graduate centres to provide new courses and strengthening the existing courses. This would be a matching grant to University Grants Commission's grants.

Adult Literacy :

The literacy percentage of Andhra Pradesh according to 1971 Census was 24.57%—33.18% in respect of males and 15.7% in respect of females as against the All India percentage of 29.46%—39.45% males and 18.72% females. The State of Andhra Pradesh occupies 16th rank amongst the States of India in regard to literacy. This is one of the areas where concerted efforts are required to be made so as to raise the literacy percentage. It is proposed to organise mass literacy percentage. It is proposed to organise mass literacy drive campaigns during the Fifth Plan period with a view to raise literacy rate by 2% *i.e.* to make an additional 10.00 lakhs of illiterate adults of the age-group 18-25 literate during the Fifth Plan period. An amount of Rs. 100 lakhs is earmarked for this purpose at the rate of Rs. 10 per adult.

Man Power :

Additional manpower required for the above programmes in school and college education will be as shown below :

Sector	Personnel required		
	Teachers	Adminis- trative personnel	Others
Primary Education	.. 24,100*	250	..
Upper Primary	.. 11,040*	..	..
Secondary Education	.. 6,900	..	..
Junior Colleges	.. 968	324	..
Degree Colleges	.. 540	180	..
Total :	.. 43,548	754	..

*Including the schemes under Minimum Needs Programme.

PUBLIC LIBRARIES :

The Public Libraries provide means for self advancement through self study. The increasing literacy among masses creates thirst for reading. Unless this is satisfied by providing library facilities, the new literates may fall back into illiteracy. Hence schemes were included in the development plans to expand library facilities in rural and urban areas.

In the year 1960, the Integrated Andhra Pradesh Public Libraries Act was enacted. Under its provision the Department of Public Libraries was formed in the State. The object of the Act is to provide library service in every village. Under the Act, the Zilla Parishad Grandhalaya Samsthas levy a library cess of four paise in the rupee on house or property tax in their area of its jurisdiction, and the Government shall contribute equal amount to the cess collected.

DIMENSIONS OF THE PROBLEM :

According to the Act, there is to be one Library for every municipal town with a population of 50,000 and more and one additional library for every 25,000 population in excess of 50,000. There is to be one branch library in each panchayat of 5,000 population and a delivery station in a village with a population between 1,000 to 5,000. As per these norms, there is need to open 804 branch libraries and 11,244 delivery stations. There are at present 565 branch libraries and 540 delivery stations. There is need to open 239 new branch libraries and 10,704 delivery stations. The cost of maintaining each branch unit is estimated at Rs. 5,000 per year. The total additional cost of

achieving saturation as per the act, is Rs. 226 lakhs per year (Rs. 11.95 lakhs for branch units and Rs. 214 lakhs for delivery stations or mobile libraries) Further, expansion of these facilities requires strengthening of administration and supervisory set up.

PROGRAMME DETAILS :

A sum of Rs. 25.00 lakhs is provided in the Fifth Plan for development and expansion of public libraries in the State.

During the Fifth Plan, 50 new branch libraries are proposed to be opened at a cost of Rs. 7.50 lakhs to serve the villages below 5000 population. 2,000 village libraries and 20 mobile units are proposed to be started at a cost of Rs. 8.70 lakhs. Buildings are proposed to be constructed for four Regional Libraries and 15 District Libraries at a cost of Rs. 50 lakhs.

With the increase in libraries, the demand for trained librarians will increase. The existing training facilities are available in institutions run by private managements and Universities. They turn out insufficient number of personnel. Hence it is proposed to start an institute of library science at a cost of rupees one lakh. A bibliography of books published in the State is proposed to be prepared at a cost of Rs. 0.30 lakh. Strengthening of the State Directorate and reorganisation of the regional libraries is proposed to be taken up at a cost of Rs. 1.50 lakhs.

Manpower :

The schemes included in the Fifth Plan are likely to generate direct employment of 256 technical personnel (librarians) 77 administrative and secretarial personnel.

STATE ARCHIVES

The main functions of the department of State Archives is—

1. to preserve the records on scientific basis,
2. to facilitate the use of records in the business of Government, and
3. to help scholars in salvaging the heritage of the past.

REVIEW :

Before the advent of the Third Plan the Archives Department was in a neglected state. It was only during the Third Five Year Plan the development of the State Archives Department was undertaken. The Department was developed by constructing a new building at Taranaka on modern scientific lines and archival principles. It has a large stack area of two floors to preserve records and facilities for mechanical air cleaning, fumigation and repairs of records, photocopying etc. The scientific preservation of records requires trained technical personnel. For this purpose the departmental officers were sent for training regularly in the National Archives at New Delhi. In order to promote historical research full-time and part-time research fellowships were created. The scheme of writing monographs was initiated.

Rare historical manuscripts, books, documents in the custody of private individuals and institutions were purchased. Microfilm copies of the Mckenzie and Brown collections of manuscripts available at Saraswati Mahal Library, Tanjore were obtained. Carton boxes which are used for preserving records are being manufactured in a unit started in the office.

PROGRAMME DETAILS :

A sum of Rs. 25 lakhs is provided for programmes of this department during the Fifth Plan. It is proposed to continue the schemes taken up during the Fourth Plan namely (1) Micro filming of old records (2) Improvement of the photographic wing (3) Research Fellowships and Research (4) Purchase of manuscripts (5) Oriental manuscripts library and Research Institute (6) Transfer of Records from Tamilnadu Archives and A.P. districts (7) maintenance of National Register of records and (8) administration and transport supports. The provision for these schemes during the Fourth Plan was about Rs. 11.08 lakhs and it is proposed to increase it to Rs. 14.00 lakhs during the Fifth Plan.

In addition, three new schemes are proposed to be taken up at a cost of Rs. 11.00 lakhs. The schemes are (1) Establishment of Regional Branch Offices (2) Publication of Reference Media (3) Construction of 2nd floor to increase stack areas in the main office.

24. TECHNICAL EDUCATION.

The facilities for producing necessary technical personnel have to be provided in each plan for successful implementation of the various development programmes not only of that Plan but also of future plans it takes a number of years for training of these personnel. The investments in this sector during the previous plans resulted in development of a number of institutions and their total output at present exceeds the demand for technical persons. With the result, there is considerable unemployment among the qualified technical personnel. The task for the future plans is to assess carefully the requirements for technical personnel of various categories and develop the existing institutions and courses in them. The national approach lays stress on consolidating the existing institutions while new institutions shall be started only when additional manpower requirement justified it. The present inadequacies of the existing institutions have to be properly assessed and specific schemes have to be formulated to make good of them. Stress is also made on faculty development by providing for training of at least 20 per cent of the teaching strength. It recommends the reorganisation of the Polytechnics which includes setting up of a State Board of technical education, revision of staff structure, diversification of courses, introduction of sandwich programme, grant of academic freedom to selected Polytechnics etc. It recommends setting up of design and fabrication units for manufacture of equipment and teaching aids. It emphasises the need for flexibility in the system by providing multiple points of entry with a view to enabling a large number of professionals already in the field to reequip themselves professionally. The institution should be helped to undertake socio-economic projects, products development training in entrepreneurship, consultancy services. It further recommends curricular development and staff and students amenities.

REVIEW :

A sum of Rs. 10.90 crores was spent on development of technical education in the State from the beginning of the First Plan upto the beginning of the Fourth Plan. During the Fourth Plan, the anticipated expenditure on this sector is to be Rs. 1.55 crores. The total expenditure on this sector since the beginning of planning in this State is, therefore of the order of Rs. 12.51 crores. As a result, there are at present (i.e. by the end 1972-73), seven engineering colleges with an intake capacity of 360 for graduate courses, 60 for post graduates and 350 for part-time course. There are 22 Polytechnic colleges with an intake capacity of 3,605. Apart from them there are 12 Junior technical schools attached to Government Polytechnics with an intake capacity of 220 students, one college of Fine Arts and Architecture, four colleges of Music and Dance, two Vocational institutes for Girls, one Domestic Science training college and Central Institute of Commerce. During the Fourth Plan, two new institutions, one for commerce and one for Music and Dance were started. Part time degree courses in Engineering for diploma candidates were instituted at

Nagarjunasagar Engineering College, Osmania Engineering College, Andhra University Engineering College with a total intake capacity of 350 students.

An important development during the Fourth Plan was the formation of Jawaharlal Nehru Technological University at Warangal from 2nd October, 1972. The University was constituted with the three Government Engineering Colleges and the Regional Engineering college at Warangal.

APPROACH :

According to the previous policy of the Government every district in the State is to be provided with at least one polytechnic. At present there are polytechnics in 16 districts and the five districts which do not have polytechnics are Medak, Nalgonda, Karimnagar, Adilabad and Prakasam. In view of the widespread unemployment among the diploma holders in Engineering and under-utilisation of the training capacity of existing institutions, no new institutions are to be opened. The programmes in the Fifth Plan, particularly those relating to Rural Water supply, Rural Roads and Rural Electrification would create demand for trained Engineers, Technicians, and craftsmen in Civil, Electrical and Mechanical disciplines. Technical personnel are also required for industries under the core sectors. The existing intake capacity of the institutions is considered to be quite adequate to meet the needs of technical personnel in the Fifth Plan. Until the existing back-log of unemployment is cleared, there is no need to expand the existing institutions. Hence the Fifth Plan concentrates on consolidation and improvement of quality and standards of the technical education in the State.

OBJECTIVES :

The objectives of the sector during the Fifth Plan are—

1. consolidation of the existing institutions by making up the deficiencies in their staff, laboratory equipment and accommodation ;
2. improvement of the existing institutions by :
 - (a) revising the staff structure,
 - (b) modernising the laboratories.
3. diversification and improvement of the courses by starting :
 - (a) new courses,
 - (b) developing sandwich courses, and
 - (c) expanding part time diploma courses.

A sum of Rs. 3.08 crores is proposed for Technical Education in the Fifth Plan. Out of this Rs. 2.93 crores is meant for Directorate of Technical Education and Rs. 0.15 crores for Archaeology and Museums

Technical Education :

The programmes of the Directorate of Technical Education are briefly described below :

There is some deficiency by way of staff, equipment, land and building accommodation in certain Polytechnics. This is proposed to be made good as a measure of consolidating the existing Polytechnics. A sum of Rs. 60 lakhs is provided for these schemes.

The laboratories and workshops of older institutions such as Government Polytechnic, Hyderabad and Andhra Polytechnic, Kakinada are having obsolete equipment. It has become difficult to procure spare-parts of such machines because the same are not in serial production. It is proposed to modernise workshops and laboratories of such institutions at a cost of Rs. 12 lakhs.

The Ministry of Education recently laid down revised norms of teaching load for various categories of staff working in polytechnics and also stipulated that lecturing work should not be done by a teacher whose rank is below that of a Lecturer. This necessitates a revised pattern of staff and an outlay of Rs. 20 lakhs on the revision of staff structure is provided.

The out-turn of Diploma holders in the conventional disciplines of Civil, Electrical and Mechanical Engineering is greater than the demand. Hence, there is considerable unemployment among these categories. It has been proposed that diversified courses be offered in other disciplines of engineering such as Electrical Communication Engineering, Automobile Engineering, Chemical Engineering, Printing Technology, Leather Technology etc., adjusting the intake for these courses within the overall intake sanctioned for the respective Polytechnics. The existing diploma courses are proposed to be reorganised so as to make them more job-oriented and create among the trainees the necessary skill and confidence for self-employment. A sum of Rs. 20 lakhs is provided for this scheme.

Sandwich pattern is considered to be the most effective way of imparting engineering education at both degree and diploma levels. It is proposed to introduce Sandwich courses at a cost of Rs. 10 lakhs in the Polytechnics situated in the industrial belts in certain branches after obtaining a firm commitment for practical training facilities in the local industries.

The following additional 4 year part-time Diploma Courses are going to be introduced from the academic year 1973-74 (last year of the Fourth Five-Year Plan) and their development will fall under the Fifth Five-Year Plan :

- (i) L.C.E. and L.E.E. at Government Polytechnic, Hyderabad,
- (ii) L.C.E. at Andhra Polytechnic, Kakinada.

An amount of Rs. 5 lakhs is included in the plan for this purpose.

Quality improvement Programmes cover (a) Faculty Development ; (b) Curriculum Development ; and (c) Development of instructional aids etc. Under the faculty development programme, the staff will be deputed to Technical Teachers Training Centres for improving pedagogic techniques, industrial concerns for short-term Industrial Training and Summer Schools and Seminars for increasing the depth of subject knowledge. A curriculum Development Cell has been established to modernise the curriculum in various disciplines of engineering. This has also been entrusted with the development of instructional aids, etc. The cost of this scheme during the plan is estimated at Rs. 10 lakhs.

The Ministry of Education has proposed that the State Directorates of Technical Education may be strengthened adequately for planning, execution and evaluation of all the schemes and programmes under the Fifth Plan. A sum of Rs. 18 lakhs is provided for strengthening the Department.

New Colleges of Music and Dance were started in the year 1972-73 at Nizamabad, Warangal and Guntur. Full complement of teaching staff was not sanctioned for these colleges. These and other deficiencies will be made good under the Fifth Plan at a cost of Rs. 10 lakhs.

Competition for admission to the various courses offered at Government Polytechnic, Hyderabad is very keen. The ratio of applicants to seats is 3 to 1 or even greater, with the result that number of eligible candidates fail to get seats. There is, thus, a need to expand such facilities in the Twin Cities of Hyderabad and Secunderabad. It is, therefore, proposed to upgrade the Junior Technical School, Secunderabad into a Polytechnic at a cost of Rs. 18 crores. A number of experimental courses have been introduced at the Government Polytechnic, Hyderabad and it is not possible to experiment with any more courses at the said Polytechnic on account of full utilisation already achieved in respect of building accommodation and the facilities in Workshops and Laboratories for the existing courses. If the Junior Technical School, Secunderabad is upgraded into a Polytechnic the revised curriculum developed in Mechanical and Civil branches of engineering (by American experts) could be introduced at the said Polytechnic as a pilot project. Diversified courses, such as Electronic Engineering with Specialisation in Television and Electric Engineering with specialisation in Computer Engineering could be introduced. It may be added that the Electronic Corporation of India Limited, Hyderabad has undertaken the manufacture of Television sets and Computers (both digital and analogue) on a large scale. Technicians in Television and computers will be in great demand by the E.C.I.L. over the next decade.

The department will have to provide for grants-in-aid to the four Universities in the State, viz., Andhra University, Sri Venkateswara University, Osmania University and the newly started Jawaharlal Nehru Technological University at Warangal. Grants-in-aid have to

be provided to private Polytechnics and other institutions also. An amount of Rs. 1.10 crores is provided in the plan for this purpose. The above plan generates direct employment for 265 technical and professional personnel, 23 administrative and ministerial personnel, 22 skilled workers and 10 unskilled workers.

CENTRAL SECTOR SCHEMES :

There are three Central Sector Schemes taken up during the Fourth Plan period. They are (1) Regional Engineering College at Warangal (2) Interest Free loans for Hostel building construction and (3) scholarships to students. 50 per cent of the recurring costs of the Regional Engineering College were met by the Central Government. This has to be continued during the Fifth Plan at a cost of Rs. 90.00 lakhs. A sum of Rs. 60.00 lakhs is required as interest free loan for construction of new hostels and Rs. 20.00 lakhs for continuing the scholarships during the Fifth Plan also.

*Outlay on Programmes of Technical Education**(Rs. in lakhs)*

Sl. No.	Scheme	Revenue Account	Capital Account	Total
(1)	(2)	(3)	(4)	(5)
<i>A. State Plan Schemes :</i>				
1.	Consolidation of Existing Polytechnics ..	40	20	60
2.	Modernisation of laboratories and Workshops of Older Polytechnics ..	12	..	12
3.	Revision of staff structure in Polytechnics ..	20	..	20
4.	Diversification and re-organisation of Diploma courses in Engineering ..	20	..	20
5.	Development of Sandwich Courses ..	10	..	10
6.	Expansion of part-time Diploma courses in certain selected polytechnics	5	..	5
7.	Quality Improvement Programmes including:- ..			
	(a) Faculty development	10	..	10
	(b) Curriculum development			
	(c) Development of Instructional aids }			
8.	Strengthening of State Directorate of Technical Education and Training ..	8	10	18
9.	Development of Government Colleges of Music and Dance, Nizamabad, Warangal and Guntur started in the Fourth Five-Year Plan ..	10	..	10
10.	Upgrading of Junior Technical school, Secunderabad into a Polytechnic ..	12	6	18
11.	Grants to Universities and Private Polytechnics ..	70	40	110
Total-A:		217	76	293

(1)	(2)	(3)	(4)	(5)
B. Central sector outside State Plan :				
1.	Regional Engineering College, Warangal	90	..	90
2.	Loans for Students' hostels .. ..	..	60	60
8.	Scholarships for Polytechnic students	20	..	20
	Total-B ..	110	60	170
C. Centrally Sponsored Schemes**				
1.	Post-graduate courses at Engineering Colleges, Kakinada/Anantapur ..	49.88	..	49.88

**Under this scheme, post-graduate courses in Engineering were instituted at Engineering Colleges at Kakinada and Anantapur from the year 1971-72 and the entire expenditure is met by the Centre for the first five years. The Centre will meet the expenditure on this scheme during the first two years of the Fifth Five-Year Plan while for the remaining three years the cost will have to be met by the State Government. The total five-year cost is Rs. 49.88 lakhs of which the Centre's share relating to the entire cost for the first two years will be Rs. 18.68 lakhs and the balance of Rs. 31.20 lakhs represents the State's share representing the entire cost for the remaining three years.

Physical targets to be achieved

Sl. No.	Course	Intake at the end of Fourth Five-Year Plan	Increased intake in Fifth Plan period	Intake at the end of Fifth Five-Year Plan
(1)	(2)	(3)	(4)	(5)
1.	L.C.E.	780	..	780
2.	L.E.E.	800	..	800
3.	L.M.E.	800	..	800
4.	L.E.C.E.	160	30	190
5.	L.A.E.	120	..	120
6.	L.M.I.N.E.	10	..	10
7.	Chemical Engineering ..	30	..	30

(1)	(2)	(3)	(4)	(5)
8.	Sandwich course at Vizag ..	20	..	20
9.	Sandwich courses ..	120	..	120
	(Model Dip.) at Vizag ..	30	30	60
10.	Leather Technology ..	..	30	30
11.	Printing Technology ..	..	30	30
12.	Computer Technology ..	..	30	30
13.	Television .. ..	..	30	30
14.	Electronics .. ..	..	30	30
15.	Metallurgy	30	..	30
16.	Architecture Draughtsmanship	60	..	60
17.	Textile	30	..	30
18.	Pharmacy	140	..	140
19.	Commercial practice ..	190	..	190
20.	Ceramics	25	..	25
21.	D.M.E.C.D.	60	..	60
22.	Food	30	..	30
Total ..		3,385	210	3,595

Note :—The out turn of students from the above courses is about 60% of intake every year.

Archaeology and Museums :

The principal object of this department is to ensure proper protection of the cultural wealth of the State and to conserve the ancient structures without spoiling their architectural and aesthetic beauty. The department also undertakes survey and exploration of new monuments, new inscriptions antiquities etc., and conduct periodical excavations and explorations to unearth new finds and bring out literature on the new material for the benefit of research scholars. The most effective means for spread of knowledge about our cultural heritages are museums. There is need to establish them at each district headquarters in order to not only preserve the local antiques but also spread knowledge of our cultural heritage, essential for cultural motivation and development.

Of late, the archaeological monuments in the State like Qutub Shahi tombs at Golconda have become important places of tourist attraction. Development of tourism by excavating such monuments and developing them as tourist attractions helps also to increase income of the State.

REVIEW :

Plan allocations for this department were made only from the beginning of Second Five-Year Plan when a centrally sponsored scheme costing Rs. 2 lakhs was taken up. Total expenditure incurred upto the beginning of the Fourth Plan was ten lakhs. During the Fourth Plan, the anticipated expenditure is about Rs. 7 lakhs.

Extensive epigraphical survey of all districts was taken up in the year 1964-65. So far, the survey was completed in four districts *viz.* Warangal, Cuddapah, Kurnool and Krimnagar and about 36,000 scripts are copied of which 25,000 were deciphered. Five publications on them are so far brought out and three are under print.

Qutub Shahi tombs were taken over by the Government for preserving and developing them as tourist attractions. In the scheme of establishing district museums, the Victoria Memorial Museum at Vijayawada, R.S.R. museum at Rajahmundry were taken over. A site museum at Alampur and Gandhi Centenary museum at Karimnagar were set up.

In the excavations done by the department, innumerable finds like pottery, terracotta, beads, celadonware, arms of war and chase, sculptures, coins etc., are brought to light. With a view to display these finds at one place, a building *viz.*, Yeleswaram Pavilion was constructed in the office premises of the Directorate. An accretion to this building is under construction.

PROGRAMME DETAILS

A sum of Rs. 15 lakhs is allotted to this department for Fifth Plan Programmes. The schemes cover the Development of Qutub Shahi Monuments, accretion to Yelleswaram pavilion, Development of Vijayawada museum and establishment of District museums. Apart from these schemes new schemes covering survey and exploration of monuments including registration of antiquities, Transportation of loose sculptures, Development of Kondapalli Fort, Survey of Forts, establishment of Chemical laboratory, and modelling sections, Mobile museums, and a plan cell will be taken up during the plan.

25. MEDICAL AND PUBLIC HEALTH

Provision of Medical and Health facilities for the well being of the people of the State is one of the primary responsibilities of a welfare State. The investments made so far have resulted in vastly improved health, longevity better facilities for training medical manpower and a net-work of hospitals and dispensaries.

In the Fifth Five Year Plan Approach documents, the National Development Council have highlighted the rural urban imbalance in the matter of the porovision of health care services to our people. The document stresses that the traditional norms such as the doctor. population and bed-population ratio or per capita expenditure on health are not sufficient to overcome this imbalance and that norms during the Fifth Plan should be related to adequate extension of medical and health care to rural areas.

The Approach document lays down the following directives :

- (i) One Primary Health Centre for a block population of 80,000 to 100,000.
- (ii) 8 to 10 sub-centres each serving a population of 10,000 under each Primary Health Centre.
- (iii) Making up deficiencies in building, staff, equipment and drugs in a co-ordinated way.
- (iv) Emphasis on rural health to be on preventive medicine, family planning, nutrition and detection of early morbidity.
- (v) Referral services to be provided at an appropriate higher echelon such as sub-division/tehsil/taluk or the district hospital.
- (vi) Raising suitable medical and para-medical cadres for the lower tiers.
- (vii) Health education to be woven into general educational system.
- (viii) Defining and making proper use of the indigenous system of medicine.
- (ix) Delivery of health, family planning and nutrition care services in an integrated manner to peripheral areas through a multipurpose health worker or a medical auxiliary.

Keeping in view the National Approach as well as the needs of the State, it is proposed to give top priority to the provision of adequate medical care in the rural areas ensuring adequate employment opportunities for medical and para-medical personnel. The approach takes into account the basic need to fill-up gaps in the existing physical

facilities in various medical institutions. An integrated and area approach involving hierarchy of medical services is proposed for Fifth Plan.

Every year about 900 to 1,200 medical graduates are passing out of the medical colleges in the State. Of these, about one-third are being absorbed in Government, Semi-Government and private sectors. There is a backlog of about 1,500 medical graduates, 150 dental graduates, 600 staff nurses and other para-medical personnel who are yet to be provided employment either in Government sector or on self-employment basis. As regards other para-medical including health personnel, there is no backlog and the candidates who will be trained in Fifth Plan period are sufficient to man the posts that will be created during the said period. With the twin objectives of providing employment to doctors and other para-medical personnel and providing medical relief to rural areas, stress is proposed to be laid on setting up the self-employment units preferably in rural areas i.e., other than a Taluk Headquarters or even at Taluk Headquarters if the population does not exceed 5,000. Thus, expansion of employment opportunities are proposed to be supplemented with induced self-employment to provide for fuller utilisation of medical man-power. An attempt will also be made to involve the private hospitals and medical institutions wherever possible as has been attempted in some other States. The possibility of adopting this approach particularly in respect of Leprosy and other National Programmes will be explored.

Many rural areas receive medical relief through the medical practitioners of the Indian systems of medicine or from unqualified practitioners.

It is proposed to give medical care in the rural areas by opening more dispensaries of Indian Medicine and Homeopathy also. On an average 104 Ayurvedic doctors, 26 Homoeopathic doctors and 8 Unani doctors are passing out of the Colleges every year. To cover the rural population which is 82% of the total, the Colleges of Indian Medicine and Homeopathy require strengthening. Attempts are being made to send as many qualified practitioners of the Ayurvedic, Unani and Homoeopathy as possible to settle down in rural areas by opening new Government dispensaries and by giving assistance to them to set up dispensaries for running them on self-employment basis.

REVIEW :

A sum of Rs. 28.58 crores was spent upto the beginning of the Fourth Plan since the beginning of the Plan era. Of this, a sum of Rs. 16.83 crores was spent on medical programmes, Rs. 11.76 crores on health programmes. During the Fourth Plan an amount of Rs. 4.83 crores is likely to be spent of which the expenditure on Modern Medicine would be Rs. 3.05 crores, Public Health Rs. 1.03 crores and Indian Medicine Rs. 0.25 crore.

There are at present (by the end of 1972-73) 27 teaching hospitals with 10,005 beds, 9 other general and special hospitals with 1,198 beds, district hospitals with 3,409 beds, and 203 taluk hospitals with 4,165 beds. The total bed strength in all these hospitals is 18,777 which is likely to go upto 18,893 beds by the end of Fourth Plan. During the

Fourth Plan period 818 new beds are added and four dental clinics, four eye clinics and five blood banks are started. There are 72 non-taluk hospitals and dispensaries. Besides there are a number of control centres and clinics located in various hospitals to control diseases like T. B., leprosy etc. There are at present 3755 Government doctors, of which 2,654 are in urban areas and 1,101 in rural areas.

There has been a fast expansion in the facilities for Medical Education in the state. There are eight medical colleges in the State with an intake capacity of 1,150 students. In regard to post graduation there are facilities in eight specialities viz., General Medicine, Obstetrics and Gynaecology, Pediatrics, Anaesthesia, Radiology, General Surgery, Ophthalmology and E. N. T. The total output of post graduates during the first four years of Fourth Plan is about 446. At present all the district headquarters hospitals are having specialities in 9 branches. It is proposed to provide 10 specialities by adding Radiology in each of them. Further, all the Taluk hospitals are to have a minimum of three specialities viz., General Medicine, General Surgery and Obstetrics. The existing facilities for post-graduation are felt to be sufficient except in Obstetrics and Gynaecology.

Under Public Health, there are 415 Primary Health Centres with 1,245 Sub-centres. In addition there are 1,769 Sub-centres under family Planning. During the Fourth Plan 7 Primary Health Centres and one Rural Health Centre were started. Eight buildings for Primary Health Centres were constructed. There are district public health laboratories in all districts and four regional laboratories at Visakhapatnam, Vijayawada, Kurnool and Warangal and one full-fledged Institute of Preventive Medicine at Hyderabad. Six of these public health laboratories were strengthened and one state drug laboratory and one biochemistry section were strengthened during the Fourth Plan. The Institute of Preventive Medicine is manufacturing Small pox, Cholera and T.A.B. Vaccines. In regard to vaccines for Small-pox and Cholera, the institute is, in addition to meeting the needs of the State in full, supplying the vaccines to other States also. The State is also implementing Centrally Sponsored programmes to control Malaria, Small-pox, Filariasis and Cholera.

During the Fourth Plan, under Indian Medicine, an Ayurvedic hospital with 20 beds was started at Vijayawada. A Homeopathic hospital was started at Hyderabad. The existing three Homeo Hospitals, one at Gudivada and two in Hyderabad have been taken over by the Government. Ten new Homeo and Ayurvedic dispensaries were started.

The physical targets and achievements under Modern Medicine during the Fourth Plan are as follows:

[Statement.

Sl. No.	Schemes	Targets	Achievements
(1)	(2)	(3)	(4)
(1) Additional number of beds :			
(a)	Teaching Hospitals	320	328
(b)	District Headquarters Hospitals ..	942	246
(c)	Infectious Diseases Hospitals ..	92	..
(d)	Taluk & Non-Taluk Dispensaries ..	868	244
(2)	Dental Clinics (no)	6	4
(3)	Eye Clinics (no)	5	4
(4)	Blood Banks (no)	6	5
(5) Additional Seats in :			
(a)	Medical Colleges	50	..
(b)	Nursing Colleges	15	..
(c)	Pupil Nurses	105	..
(d)	Auxiliary Nurse Mid-Wives ..	120	..

It will be noted that except for teaching hospitals and dental clinics, where the achievement is in excess of the targets, there is a shortfall in respect of other items. In some cases e.g. increase of beds in District Hospitals, Infectious Diseases Hospitals the achievement is far below the targets.

It is observed that with greater advance planning, delegation of powers and strengthening of procedures it would be possible to improve the performance and reduce the gap between targets and achievements subject, however to greater certainty in regard to Plan outlays.

In regard to Central Sector Schemes under 'Modern Medicine', the following table summarises the outlays and expenditure.

(Rs. in lakhs)

Sl. No.	Name of the Scheme	Total outlay for Fourth Plan	Revised outlay	Actual Expenditure
(1)	(2)	(3)	(4)	(5)
1.	Post-Graduate Medical Education.	56.81	85.62	28.63
2.	Pilot Project for Mental Health	2.52	2.20	0.70
3.	T.B. Control	172.75	59.28	44.86
4.	Leprosy Control	320.00	78.18	44.58
5.	Venereal Diseases Control	80.00	8.99	1.69
6.	Trachoma Control	6.86	6.86	6.86
	Total ..	587.94	185.53	121.82

The targets and achievements in this sector are as follows :—

Sl- No.	Name of the Scheme	Targets	Achievements.
(1)	(2)	(3)	(4)
1.	Upgrading of Postgraduation Diploma in 5 Medical Colleges (No).	8	6
2.	Pilot Projects for Mental Health (No).	5	3
3.	T.B. Control Centres .. (No).	10	4
4.	Leprosy Control Centres (No).	10	10
5.	Venereal Diseases Control Centres (No).	5	2
6.	Trachoma Control (to be implemented in 1973-74)		

It is thus observed that a lot more preparedness, project planning, streamlining of procedure, is needed and for this purpose appropriate administrative machinery would have to be built up and held fully responsible for improving the performance in this regard.

The Physical targets and achievements in Public Health sector are as follows:—

Sl. No.	Schemes	Targets	Achievements
(1)	(2)	(8)	(4)
1.	Training of Auxiliary and Health personnel.		
	(a) DPH Course (No. to be trained).	60	24
	(b) Sanitary Inspectors Course. (Students No.).	1,000	800
	(c) Training of Health Visitors in General Sick Nursing (No.)	50	50
2.	Health Education		Staff Scheme
3.	State Health Transport Organisation (Regional Workshops No.)	2	2
4.	Maternity & Child Health (children Immunised in lakhs)	5,57	5,97
5.	Strengthening of Directorate		Staff Scheme
6.	Strengthening of Primary Health Centres	8	6
7.	Opening of new	89	7
	(a) Primary Health Centres		
	(b) Rural Health Centre	—	1
8.	Strengthening of DM & HO's Office.		Staff Scheme
9.	Production of Small-pox Freeze dried vaccine		Staff Scheme
10.	Food & Drugs.	1	1
	(a) Opening of 3 State Drug Labs		
	(b) Opening of Biochemistry Section		
11.	Primary Health Centre Building Programme. (No of Bldgs.)	40	8
12.	Construction of Directorate building.	1	1
13.	Construction of building for Institute of Preventive Medicine.	1	Nil.

It will be noted that except training of health visitors in general sick nursing, health education, state health transport organisation and maternity and child health where the achievement is in excess of the target, there is a shortfall in respect of other items. In some cases i.e. training of auxiliary and health personnel, strengthening of PHCs., laboratories, opening of new P.H.Cs., production of small-pox freeze dried Vaccine, P.H.C. building programme and construction of Institute of Preventive Medicine buildings, the achievement is far below the target.

In regard to Centrally Sponsored Scheme under 'Public Health', the outlay and expenditure are as follows :

(Rs. in Lakhs)

Sl. No.	Name of the Scheme	Outlay for the Fourth Plan	Likly Expenditure
1)	(2)	(3)	(4)
1.	National Malaria Eradication Programme	244.81	371.61
2.	National Small Pox Eradication Programme	134.81	136.19
3.	National Filaria Control Programme	.. 17.03	13.58
4.	Cholera .. ..	.. 24.59	23.68
5.	Basic Health Services .. ..	.. 122.00	122.51
	Total: ..	543.24	667.57

The targets and achievements are as follows:—

No.	Schemes	Targets	Achievements.
(1)	(2)	(3)	(4)
1.	National Malaria Eradication Programme	No. target fixed.	..
2.	National Small Pox Eradication Programme.		
	(a) Primary Vaccination (Lakh Nos.)	.. 143.16	71.81
	(b) Revaccination (do)	.. 354.29	139.81
3.	National Filaria Control Programme	.. 24	14
4.	Cholera .. (No of units)	.. Staff	Scheme
5.	Basic Health Service (No. of Units)	.. 25	25

As seen from the above that the overall expenditure under Public Health is in excess of the Plan outlay. But, however, there is short fall in expenditure under National Filaria Control Programme and Cholera; The shortfall under National Filaria Control Programme is due to not sanctioning the 10 more units as per the target fixed. The shortfall in expenditure under Cholera is negligible.

Under Indian Medicine Rs. 24.62 lakhs is likely to be spent out of a total allotment of Rs. 34.76 lakhs. In regard to Centrally Sponsored Schemes the likely expenditure is far short of allotment being only Rs. 6.56 lakhs as against allotment of Rs. 20.18 lakhs.

The population of Andhra Pradesh is 435 lakhs based on 1971 Census. The population in urban areas is 80 lakhs, while that in rural areas is 355 lakhs. The ideal bed-population ratio according to the Mudaliar Committee's Report is 1 : 1000. To achieve this ideal, the number of beds required for the State is 8,000 for urban areas and 35,500 for rural areas. The existing bed strength in hospitals in Andhra Pradesh is 19,800 in Government institutions including E. S. I. beds but excluding Primary Health Centres. The number of beds in urban areas is 17,806 which includes 10,005 beds in teaching hospitals, and in the rural areas 1,494. It would be seen that there is a shortage of 24,200 beds for both the urban and rural areas according to the ideal pattern recommended by the Mudaliar Committee. As the number of beds in the urban areas is in excess by 9,806 (17,806-8,000), there is no need to provide any extra beds in urban areas. The additional number of beds required in rural areas would be (35,500-1,494)=24,006.

The doctor population ratio recommended is 1 : 8,500. To achieve this, Andhra Pradesh requires 12,428 doctors. The number of doctor now available and the number required as per the above ratio in urban and rural areas is as follows:—

	<i>Urban</i>	<i>Rural</i>
Number of doctors required..	2,286	10,143
Number of doctors available	2,654	1,101
Additional doctors required, if any	368 (Excess)	9,042 (Shortage)

The National Development Council felt that the norms for medical facilities in terms of doctor-population ratio, bed-population ratio are not sufficient and that they should be related to adequate expansion of medical and health facilities to rural areas. Accordingly keeping in view the overall resource constraint, the step up over present level of activity possible in Fifth Plan period, a pattern of provision of medical and health facilities integrating them into area approach and specific norms to different levels of medical facilities has been evolved. The Minimum Needs Programme fits into this pattern suitably.

OBJECTIVES AND STRATEGY :

In the Fifth Plan approach paper for the State, it is proposed to expand the existing medical and health facilities and improve their quality. Emphasis will be on provision of medical services in such a way that they are easily accessible to vulnerable sections of the population. This will be done by identifying a hierarchy of services and integrating all the medical and health services at each level in actual operation.

A five tier system is proposed to be developed. The first level will be highly specialised institutions of teaching hospitals. The second level will be district hospitals where large and wider range of medical facilities will be provided. The third level will be taluk hospitals which may be upgraded by providing 50 beds in stages and at least three specialists *viz.*, a physician, a surgeon and a gynaecologist to start with. The fourth level will be primary health centres and rural medical dispensaries. At the fifth level are sub-centres and family planning clinics. A critical review of the past achievements has revealed that the development at the levels of the hierarchy comprising of teaching and general hospitals and the district hospitals was more than proportionate to that in the lower levels. Hence, the Fifth Plan would give emphasis for the development of lower level institutions *viz.* taluk hospitals and primary health centres.

The tasks of Plan under medical care may be summarised as :—

- (1) To upgrade all taluk hospitals by providing in the following order of priority :
 - (a) a minimum bed strength of 30 beds ;
 - (b) providing minimum necessities or filling up gaps in minimum necessities like compound walls, drinking water, sanitation etc. ;
 - (c) providing minimum diagnostic facilities which would include clinical laboratories, X-Ray Plant, E. C. G., etc., and facilities necessary for simple surgery, gynaecology and obstetrics;
 - (d) Clinics for ophthalmology, dental care, T. B. and venereal diseases.
- (2) To improve district hospitals by providing:
 - (a) a minimum bed strength of 250 beds ;
 - (b) one Radiologist as part of providing a minimum of 10 specialities in all district hospitals and three casualty doctors to attend emergency cases throughout the day ;
 - (c) expansion and improvement to the existing building accommodation of five district hospitals where inadequacies are noticed, and provide basic amenities like alternative power generators where they are lacking ;

- (3) (a) To consolidate and strengthen Medical Colleges by general improvement schemes ;
- (b) To draw up an academic plan that will co-ordinate postgraduate studies with plan requirements ;
- (4) To start new dispensaries where they are not available in Market-cum-service centres identified by Planning Department.
- (5) To provide increased employment opportunities to medical graduates available in the State by :
 - (a) increasing the posts of doctors as in the above programmes ; and
 - (b) promoting self-employment programmes by assisting them in initial stages to start their own dispensaries in identified selected centres :

Under Public Health Plan, the objectives are :—

- (a) to reduce the growth of population by appropriate Family Planning measures ;
- (b) to control communicable diseases ;
- (c) to produce vaccines in adequate quantities to meet health needs ;
- (d) to improve public health services among other things by strengthening public health centres 'sub-centres, increasing the provision for drugs, etc. ;
- (e) to ensure adequate health services particularly for vulnerable sections such as pregnant mothers, pre-school children belonging to weaker sections ; and
- (f) to expand health and nutrition education.

PROGRAMME DETAILS :

The total outlay proposed for Medical and Health programmes in the State is Rs. 43.74 crores out of which the provision for Modern Medicine is Rs. 18.54 crores under I priority and Rs. 2.77 crores under II priority Public Health Rs. 24.16 crores and Indian Medicine Rs. 0.86 crores under I priority and Rs. 1.75 crores under II priority. The relative priorities are arranged, for convenience (*vide* Table enclosed). The programme includes a provision of Rs. 21.60 crores meant for Minimum Needs Programme. The programme with work outlays and targets proposed are given in the tables enclosed.

MODERN MEDICINE :

A sum of Rs. 172.98 lakhs are provided to meet spill-over commitments. Of this Rs. 115.48 lakhs is for capital works and Rs. 57.50 lakhs is for staff. The staff schemes are intended to provide staff to the wards and hospitals already constructed during the Fourth Plan period.

The Planning Department have identified Market-cum-Service Centres throughout the State which are proposed to be provided with at least lowest rank service facilities, viz., a rural dispensary in medical services hierarchy where they don't exist at present. It is proposed to provide these dispensaries either by provincialising and/or transferring the existing rural dispensaries or by opening 50 new ones in these places. A sum of Rs. 55.00 lakhs is provided in the Plan for this purpose.

At present many of the Taluk Hospitals lack basic minimum conveniences like compound walls, drinking water facilities, etc. They are mostly manned by a single doctor with few beds. The bed strength in these hospitals is not uniform in all the hospitals and it varies from 0 to above 50. In the hierarchy of medical services, the taluk hospital is in middle level and holds key position in serving effectively the rural population. Hence it is proposed to improve and upgrade them. In physical terms all the taluk hospitals do not have compound walls, drinking water and other Sanitary facility, Electricity etc. They have to be provided on priority basis. It is proposed to have at least 30 beds in each taluk hospital with basic facilities for treatment in medicine, surgery and obstetrics. They are to be provided with minimum diaquotic facility like a clinical laboratory, a sum of Rs. 11.73 crores is provided in the Plan under first priority. A sum of Rs. 2.22 crores is provided under second priority for providing clinics for ophthalmology, dental care and venereal diseases, diaquotic facilities, X-Ray plant, E. C. G. etc.

Of the 21 districts in the State, five districts are having teaching and general hospitals. Hence, it is proposed to cover the remaining 16 districts under this programme. It is proposed to have a minimum of 10 specialities of which nine specialities are already available in all the district hospitals. Only a Radiologist is not available and there is no provision for the availability of doctor round the clock for casualty. Hence it is proposed to appoint one Radiologist and three general doctors, to attend casualty round the clock. There are five districts which require new buildings because the existing are either insufficient or old. It is proposed to construct new hospital at Ongole for Prakasam district and expand or renovate the old hospitals in Chittoor, Cuddapah, Nizamabad and Medak districts. Because of frequent failure of power, it is necessary to have stand-by power generator to operate continuously without interruption the electrically operated appliances in the hospitals. Hence it is proposed to provide stand-by power generators in all the district hospitals. None of the district hospitals are having Ambulance services and first aid service to emergency calls from rural areas. It is proposed to have one Mobile medical care and ambulance service units in each of the district hospitals. A sum of Rs. 3.99 crores is provided for all these schemes relating to district hospitals. A sum of Rs. 5.50 lakhs is provided for construction of quarters to duty Medical Officers and lady Medical Officers and nurses under II priority.

It is proposed to provide all the 21 teaching and general hospitals having operation theatres with diesel power generators. It is also proposed to increase selectively the availability of doctors and bed strength. A sum of Rs. 19.37 lakhs is provided for power

generators under first priority. The scheme for increasing bed strength is given second priority.

The most important aspect relating to teaching hospitals is to ensure reorientation of specialist courses keeping in view the plan requirements. Thus, if as a result of the proposal to increase specialities in District hospitals or in taluk hospitals more persons with specialisation in Gynaecology or obstetrics or say in Venereal diseases or T. B. are required the admission in Post Graduate courses and for preference to these specialities rather than some exotic subject for which facilities are neither available nor planned expansion is proposed to provide teaching units in the medical colleges at a cost of Rs. 35.00 lakhs. However, in view of the limited outlay the scheme is given second priority only. A large number of items of electrical and refrigeration equipment is being kept idle until repairs and replacements are done by going through the normal, complicated procedures such as contacting the manufacturers, agents and other repair organisations. These organisations also charge heavy amounts, being monopolistic organisations in the field. This hampers the day-to-day work in hospitals and institutions. It is therefore, necessary to have three Medical and Health equipment units, each unit having 2 Assistant Engineers (one Electrical and one Refrigerator) and other Auxiliary staff. The cost of the schemes is Rs. 10.00 lakhs for Fifth Five-Year Plan period under first priority.

Though the population in the twin cities has grown rapidly, there has been no corresponding increase in the medical facilities of city hospitals and dispensaries. A sum of Rs. 25 lakhs is provided to expand them during the Fifth Plan under first priority.

Public Health :

Under Public Health, the programmes relating to Family Planning and control of communicable diseases like small-pox, Filaria Malaria and Cholera are taken up as Centrally Sponsored schemes. Hence the details of the programmes are not discussed below. Other schemes which are covered by State plan including Minimum Needs Programme are discussed in detail below.

Improvement of Primary Health Centres :

There are 415 Primary Health Centres functioning in the State. These Primary Health Centres are having 3,014 sub-centres including 1,245 sub-centres under Community Development pattern and 1,769 family planning centres. The average population covered by a Primary Health Centre in the State is about 85,000 persons. The norm for the coverage of a sub-centre is 10,000 rural population. As per this norm, there is need for 3,510 sub-centres. But the existing Family Planning & Health Sub-Centres are only 3,014. During the Fifth Plan, it is proposed to start 496 new sub-centres so that the coverage of population will be 10,000 as per the norm. The coverage of population by Primary Health Centres was near to the norm of 80,000 population. Hence, no additional Primary Health Centres are proposed in the Fifth Plan. It is proposed to strengthen the existing Primary Health

Centres by making additional provision for medicines and taking up construction of buildings for the Centre and staff.

Out of 415 Primary Health Centres functioning in the State, 199 centres have no buildings and 346 centres have no quarters for staff. It is proposed to construct buildings for 199 centres and staff quarters for 346 centres during the Fifth Plan.

At present, the average annual expenditure incurred on drugs for Primary Health Centre is Rs. 7,000 per year. It is proposed to increase this expenditure to Rs. 12,000 per year and Rs. 2,000 for expenditure on drugs for each Sub-Centre. It is also proposed to upgrade 81 Primary Health Centres to 80 bedded rural hospitals.

The cost of the above improvements and additions to the Primary Health Centres is estimated at Rs. 21.60 crores. This will be met from Minimum Needs Programme. The details of the cost of the schemes are indicated in Statement No. III.

In addition, it is expected that the Primary Health Centre for each of the Four Tribal Blocks which do not have Primary Health Centres now and a few additional sub-centres could be taken up at a cost of about Rs. 0.50 crores if the present proposals with Planning Commission is approved.

Public Health Laboratories :

At present only one Central Laboratory at Hyderabad for Bacteriological work is functioning even though Regional Laboratories have been established they need to be developed as they cannot cater to the needs of all the district demands. During the Fourth Five-Year Plan 6 Public Health Laboratories were upgraded in six districts. Therefore, it is proposed to upgrade 15 Public Health Laboratories in the districts by creating the posts of Civil Surgeon, Junior and Senior Analyst and Laboratory Technician and Sample Taker, etc., in a phased manner at the rate 3 per year, during Fifth Five-Year Plan at a cost of Rs. 7 lakhs.

Implementation of the Prevention of Food Adulteration :

Food Adulteration has become a big menace which has to be checked effectively by implementing the Central Prevention of Food Adulteration Act. The Act is now implemented in 62 Municipalities and 31 Panchayats through the existing Sanitary Inspectors. As the work relating to Prevention of Food Adulteration Act is not the main function of a Sanitary Inspector in a local body, he is unable to function effectively. There are also no laboratories at the district-level to analyse the samples picked up by Food Inspectors. At the Directorate Level also greater attention is not paid by the Director in view of his multifarious duties. It is absolutely necessary to establish a separate Foods and Drugs Directorate with necessary field staff including flying squads. A provision of Rs. 29 lakhs is made for this. In addition, Foods and Drugs Laboratories are to be set up at District Level, which will cost Rs. 63 lakhs at Rs. 3 lakhs per Laboratory. Thus a sum of Rs. 92.00 lakhs is necessary.

Institute of Preventive Medicine :

A Master Plan is prepared for developing public health and vaccine production facilities in the State at a cost of Rs. 11 crores. The Institute of Preventive Medicine is manufacturing Vaccine and serum for use in the State and also for export to other States. It is proposed to start a public sector corporation for production of vaccines to allow for their full development on commercial lines. A sum of Rs. 20 lakhs is provided for share-capital contribution of State to this Corporation.

Maternity and Child Health :

About 21 lakhs children have to be immunised against Polio during Fifth-Plan period for which Rs. 25 lakhs is necessary.

School Health :

There are no school health clinics at present to have medical check up of the school children. It is proposed that each district should have at least one school health clinic for which a minimum sum of Rs. 10 lakhs is necessary.

Special Engineering Unit :

Construction of Primary Health Centres and other medical buildings has not been completed as the Public Works Department are unable to give priority for the construction programme. It is therefore considered that there should be a special Engineering Unit headed by a Superintending Engineer with necessary field staff. For this purpose, an amount of Rs. 10 lakhs is necessary in Fifth Plan period.

State Health Transport Organisation :

As the fleet of the health vehicles has increased to about 1,800 it is felt that two regional workshops and seven mobile maintenance units are necessary to keep the vehicles on the road. For this purpose an amount of Rs. 10 lakhs is necessary.

Health Education :

21 Health Education units are considered necessary at the rate of one for each district to educate people on healthy habits.

Vital Statistics :

At present medical record technician posts exist only in two teaching institutions. These record technicians will be useful in collecting various data of the work turned out in the hospitals. It is, therefore, proposed to appoint statistical assistants, statistical clerks, medical record technicians and medical record clerks in 34 Hospitals and 27 Municipalities.

Training of Personnel :

Several medical officers and other auxiliary personnel are being deputed for training in specialities in India and abroad. As medical service is a developing science it is necessary to make provision for training of medical officers.

Strengthening of Directorate :

Some of the branches of the Directorate of Medical and Health Services are still located in rented buildings and the existing space in the Directorate is not sufficient. It is necessary to have one more block and extra staff for strengthening the Directorate.

Equipment to Sub-Centres :

At present there is no equipment worth the name for use by Auxiliary Nurse Midwife. Now that the buildings for sub-centres are being constructed, it is considered essential to provide equipment to all the sub-centres. This involves an expenditure of Rs. 20.00 lakhs for Fifth Five-Year Plan period under first priority.

INDIAN MEDICINE :

A sum of Rs. 86.22 lakhs is proposed for programmes under Indian Medicine under first priority.

(a) There are at present 181 dispensaries of Ayurveda, Unani and Homeopathy in rural as well as urban areas of the State. It is proposed to open 87 new dispensaries at a cost of Rs. 34.84 lakhs.

(b) It is proposed to increase the number of departments in the Nizamia Tibbia College from 2 to 8 and Government Ayurvedic College from 4 to 8 at Hyderabad at a cost of Rs. 28.16 lakhs.

(c) With a view to enhance supply of genuine medicines of uniform standards to all Government institutions of Ayurvedic and Unani, the Indian Medicine Pharmacy of the Department is manufacturing Ayurveda and Unani medicines and supplying to all the Government hospitals and dispensaries. The present capacity is for manufacturing medicines worth Rs. 4 lakhs. It is proposed to improve them at a cost of Rs. 3 lakhs.

(d) The Directorate of Indian Medicine and Homeopathy is proposed to be strengthened at a cost of Rs. 2.22 lakhs. Further in view of increase in the dispensaries and hospitals in the rural area, there is need to build up field organisation for adequate supervision of their working. Hence it is proposed to have three regional offices with adequate staff at a cost of Rs. 5.22 lakhs for the plan period.

(e) All the hospitals and colleges under the control of Director of Indian Medicine are in rented buildings paying a rent of nearly Rs. 7 thousands per month. It is necessary to construct buildings for hospitals not only to save rent but also to provide effective service. Hence a sum of Rs. 15 lakhs is provided to provide buildings to some of these hospitals during the Fifth Plan.

POLICY ORGANISATIONAL ISSUES AND DEPARTMENTAL LINKAGES

It is anticipated that nearly thirteen crores rupees worth of construction activity is involved in this sector. Therefore reorganising the procedures for construction is essential. Further replacement and maintenance of medical equipment needs to be attended to, and an organisation like Electronics Corporation of India Limited or Andhra Pradesh

Small Scale Industrial Development Corporation could be encouraged to take up this.

It is also found necessary to have Regional Offices and a Planning Cell with trained staff for meaningful plan formulation, monitoring and evaluation.

Procedurally, the Director General of Stores and Supplies Department may have to be requested to have more items approved under rate contract to avoid delays.

There are a number of organisations such as the Hind Kusht Nivaran Sangh, Andhra Mahila Sabha, Indian Red Cross Society, College of General Practitioners whose work could be dovetailed into the State Plan activity.

Further, it is proposed to encourage private practitioners to go to rural areas by appropriate channelising of institutional finance; but specific programmes are contemplated after observing the scheme under operation now.

SOCIAL JUSTICE :

By a planned expansion of public consumption facilities and strengthening of rural health facilities it is expected that the backward areas and poorer sections would derive full benefit.

EMPLOYMENT GENERATION :

It is expected that the total employment generation in the Government Sector due to these programmes would be as follows :

<i>S. No.</i>	<i>Item</i>	<i>Technical</i>	<i>Adminis- trative</i>	<i>Semi-skilled/ Unskilled.</i>
(1)	(2)	(3)	(4)	(5)
1.	Modern Medicine ..	3,008	266	266
2.	Public Health ..	1,289	98	117 + 497
3.	Indian Medicine ..	271	59	224
	Total ..	4,568	423	1,104

CENTRAL SECTOR SCHEMES :

The following schemes are continuing in Fourth Five-Year Plan. Since these programmes are not completely covered in the State they may be continued in Fifth Five-Year Plan period.

- (i) Post Graduate Medical Education.

- (ii) T. B. Control Programme.
- (iii) Leprosy Control Programme.
- (iv) V. D. Control Programme.
- (v) Psychiatric Clinics.
- (vi) Trachoma Control Programme.

The establishment of post-graduate research centres at each of the Osmania, Andhra and Kurnool Medical Colleges may be sanctioned. Another essential institute called Institute of Basic Medical Sciences in collaboration with Andhra University and Central Government may be taken up.

Financial and physical implications are being worked out and this will be submitted to Government of India.

CENTRALLY SPONSORED SCHEMES FOR CONTROL OF COMMUNICABLE DISEASES

Small Pox :

Under National Small Pox Eradication Programme, mass vaccination is undertaken in the State. During the four years of the Fourth Plan, about 18.5 lakh primary vaccinations constituting nearly 4.4 per cent of the total population and 86.5 lakh Revaccination constituting 8.6 per cent of the total population were done. Maximum number of cases of Small pox being 1869 were reported in the year 1969 and in the following years the cases reported were around three hundred. During the Fifth Plan, it is necessary to cover all the children below 15 years with primary vaccination and selected groups like labourers, slum dwellers and vagrant population with revaccination.

Filaria :

Nearly 14 million population constituting about 80 per cent of the total population in the State are having risk of Filariasis infection. The Filariasis is concentrated mainly in certain pockets of coastal area and a few pockets of hinterland. Filariasis control is taken up as Centrally Sponsored scheme. There are at present 17 control units and two urban filariasis units functioning in the State. There is also Filariasis Research-cum-training centre at Rayavaram. There is need to open up more control units by conducting a survey about the incidence of the disease for which two survey units are proposed for Fifth Plan. As per the present data there is need for 7 control units and 45 clinics in the State.

Cholera :

Thirteen out of twenty one districts in the State have been declared as cholera endemic areas. Cholera control programme is being implemented as Centrally Sponsored scheme during the Fourth Plan in the 13 districts. The incidence of cholera is severe during current year (1973-74) throughout the State. There is need to extend the programme to all districts in the State.

Malaria :

The entire State is divided into 83.5 units to eradicate Malaria. Of them, 24.5 units are in maintenance phase, 6.9 units in consolidation phase and 2.1 units in attack phase by the end of 1972-73. All the areas in attack phase are agency and forest areas and irrigation and power project areas. The total number of Malaria attacks reported in 1972-73 are 49,862. The present distribution of units among various phases is likely to be continued during the Fifth Plan also. Earlier, Malaria eradication schemes were confined to Rural areas, assuming that the municipalities in urban areas would attend to the work of Larval control. As, in practice, it is observed that the municipalities are not attending to this work satisfactorily, the Malaria Eradication Schemes are also taken up in select urban areas. They are now taken up in Hyderabad, Visakhapatnam, Vijayawada, Guntur and Warangal. It is proposed to extend it to three more towns, *viz.*, Kurnool, Karimnagar and Kothagudem.

Leprosy :

Andhra Pradesh is one of the two most hyper endemic States in Leprosy in India. According to the estimates made by the Indian Leprologists, there are about 80 to 82 lakhs Leprosy cases in India, Out of these 80 lakhs Leprosy patients, more than half are living in the States of Tamil Nadu and Andhra Pradesh. According to our estimates there are about 6.5 lakhs leprosy cases. They are not uniformly distributed throughout the State. There are few districts which are more hyper endemic compared to other districts in the State. The most hyper endemic districts are Srikakulam, Visakhapatnam, East Godavari, West Godavari, Chittoor, Medak, Karimnagar, Nizamabad and Hyderabad. In some districts there are hyper endemic foci limited to small regions like Nandigama and Jaggaiahpetta taluks in Krishna, Bapatla and Tenali taluks in Guntur, Darsi and Ongole taluks in Ongole, Venkatagiri, Sulurpet, Gudur and Nellore in Nellore district, Madhira and Khammam taluks in Khammam district Suryapet, Huzurnagar and Miryalguda taluks in Nalgonda district, Mahbubabad and Jangaon Warangal taluk in Warangal district, Narayanpet, Kodangal and Kalwakurthy taluks in Mahaboobnagar district. There are sporadic foci in the districts of Kurnool, Anantapur and Adilabad.

Leprosy control programme was implemented in Andhra Pradesh State in the year 1955. So far 31 Leprosy Control Units, 192, S.E.T. Centres, 2 Leprosy Training Centres and 5 Government Leprosy Hospitals have been established. Besides these institutions Government of India and State Government have drafted schemes under which financial assistance is being provided to encourage voluntary organisations to participate in Leprosy Control Programme. There are 8 Leprosy Hospitals run by Voluntary Organisations getting the capitation grant from the State Government. There are 10 voluntary organisations who have taken up control projects and are receiving financial assistance from Government of India. The population covered by Government and voluntary organisations so far is 1.52 crores. About 2.81 crores is left uncovered. To cover the other uncovered population, 72 Leprosy Control Units are required. The recurring cost of each control unit is Rs. 1.80 lakhs and non-recurring cost is Rs. 0.33 lakh.

Family Planning :

One of the effective measures of increasing the per capita income of under developed economies is to control the growth of population which is made possible by modern scientific methods. The population growth in the State during the decade 1961-71 was 20.9 per cent against 15.65 per cent during 1951-61. Thus, there has been a substantial increase in the population growth rate over the last two decades due primarily to a substantial decline in the death rate resulting from the control of communicable diseases and epidemics and expansion of medical care and health facilities.

The population growth rate is mainly a difference between birth and death rates. The birth rate during the decade 1951-61 was estimated at 39.7 per thousand. The birth rate estimated by sample registrations during 1970 is 37 per thousand. On the other hand, the death rate during 1951-61 was estimated at 25.2 per thousand while it was 17 per thousand in 1970. Thus while the birth rate decreased by 2 per thousand per year between 1951 and 1961 and 1961-71, the death rate decreased by 6 per thousand per year. The gap between the two rates is widening since the last 20 years. Hence, it is evident that the growth rate of population cannot be brought under check unless the increasing allocations to medical and health care are more than matched by increased efforts for reducing birth rate by modern family planning methods.

On the basis of a model study made by Sri P.B. Gupta in 1965, if 7 sterilisations are done per thousand population per year for couples with 3 or more children, the birth rate in the State is likely to decrease to 31 per thousand by the year 1978-79. If the death rate is assumed to decrease to 16 per thousand per year, the growth rate would be 15 per thousand as envisaged in the national strategy. However, if the death rate decreases further as happened earlier, the growth rate would remain at 20 per thousand, per year. Hence, it is necessary to make increased efforts to reduce the birth rate still further to 25 per thousand per year at least by 1983-84 so that the population growth rate would slide back to 15 per thousand, on the assumption that the death rate stabilises round 10 per thousand.

The reduction of birth rate to 25 per thousand by 1983-84 would require 14 sterilisations per thousand population per year against 6.46 at present, which means more than doubling the present family planning efforts in the State.

Sterilisations done in the State during the first four years of the Fourth Plan by vasectomy, Tubectomy and I.U.C.D. works to an average of 6.4 per thousand population per year. The following table shows the year-wise sterilisations done in the State during the Fourth Plan.

Statement.

Sterilisation done in the State during the Fourth Plan.

S.No.	Type of sterilisation.	Number achieved during				Average per year.
		1969-70	1970-71	1971-72	1972-73	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Vasectomy ..	1,32,222	1,22,852	1,18,781	2,57,573	1,57,857
2.	Tubectomy ..	76,456	1,02,212	1,16,088	76,033	92,697
3.	Sub-Total (Surgical)	2,08,678	2,25,064	2,75,869	3,33,606	2,60,804
4.	I.U.C.D. ..	9,204	9,874	19,612	13,508	13,049
5.	Candoms No. in lakh.	31.7	101.4	82.0	36.0	62.8

From the above, it may be inferred that an effective reduction in the growth rate of population in the State requires doubling the present efforts regarding sterilisation. To achieve the target of 14 sterilisations per thousand population per year there is need to double the field staff of Basic Health workers and health visitors and facilities for family planning methods and creating the means for motivation in the people towards family planning.

TABLE I.

FIFTH PLAN.

Department-wise outlays proposed for Medical and Public Health.

S.No.	Department.	Outlays proposed under priority. (Rs in lakhs)	
		I	II
(1)	(2)	(3)	(4)
1.	Modern Medicine ..	..	..
		.. 1,854.34	277.35
2.	Public Health ..	..	..
	(a) Normal Plan ..	..	..
		.. 274.30	..
	(b) Minimum needs programme ..	..	..
		.. 2,160.00	
		Total	.. 2,434.30
3.	Indian Medicine ..	..	..
		.. 86.22	175.00
	Total excluding minimum needs programme ..	.. 2,214.86	452.35
	Total including minimum needs programme ..	.. 4,374.86	452.35

TABLE—II.

Outlays proposed for Programmes under Modern Medicine.

S.No.	Programme.	Outlay proposed under priority.	
		I	II
1.	Spill over Commitments	172.98	..
2.	New Dispensaries in rural areas	55.00	..
8.	Improvements to taluk Hospitals :	..	..
	(a) Providing a minimum of 80 beds	825.76	..
	(b) Providing minimum necessities	195.00	..
	(c) Electrification	9.75	..
	(d) Three specialities	137.45	..
	(e) Diagnostic Facilities	4.67	104.06
	(f) Clinics for eye, T.B., V.D. & Dental Care .. ..	..	112.79
	Sub-Total	1,172.63	216.85
4.	Improvements to district Hospitals :	..	..
	(a) Stand by power generators	14.76	..
	(b) Minimum bed strength of 250 beds	116.68	..
	(c) Ten specialities and casualty service	17.92	..
	(d) Buildings	210.00	..
	(e) Mobile medical cum ambulance service units	40.00	5.50
	(f) Quarters to District Medical Officers, L.M.Os., and Nurses	399.36	5.50
	Sub Total	798.72	11.00
5.	Improvements to teaching hospitals :	..	..
	(a) Stand by power generators	19.37	..
	(b) Increase of bed strength to a minimum of 900 beds .. ..	..	20.00
	Sub-total	19.37	20.00
6.	Improvement and extension of city medical care	25.00	..
7.	Medical education .. ..	..	35.00
8.	Medical and health equipment maintenance units	10.00	..
	Total	1,854.34	277.35

TABLE—III.

FIFTH PLAN.

*Outlays proposed for Programmes under Public Health.**(Rs. in laksh)*

S.No.	Programme.	Outlays proposed under priority.	
		I	II
1. Improvements Public Health Centres:			
	(a) Minimum needs programme	2,160.00	..
	(b) Equipment to Sub-centres	20.00	..
	Total	2,180.00	..
2. Laboratories :			
	(a) Improvements to Public Health Laboratories	7.00	..
	(b) Food & Drug Laboratories	63.00	..
	Sub-Total	70.00	..
3.	Food & Drug Administration	29.00	..
4.	Production of vaccine sera	20.00	..
5. Auxiliary Health Programmes :			
	(a) Maternity & Child Health	25.00	..
	(b) School Health Service	10.00	..
	(c) Health Education	28.42	..
	Sub-Total	63.42	..
6. Other Programmes :			
	(a) State Health Transport Organisation	10.00	..
	(b) Vital Statistics	36.88	..
	(c) Training	5.00	..
	(d) Strengthening of Directorate	15.00	..
	(e) Buildings to Directorate	5.00	..
	Sub-Total	81.88	..
Total :			
	(a) Normal State Plan	274.30	..
	(b) Minimum needs programme	2,160.00	..
	Total	2,434.30	..

TABLE—IV.

FIFTH PLAN.

*Outlays proposed for programmes under Indian Medicine.**(Rs. in lakhs)*

S.No.	Programme.	Outlays proposed under priority.	
		I	II
1.	Dispensaries	34.84	..
2.	Medical Education		
	(a) Nizamia Tibbi College, Hyderabad	15.96	..
	(b) Government Ayurvedic College, Hyderabad	12.20	..
	Sub-Total	28.16	..
3.	Pharmacy	3.00	..
4.	Strengthening of Directorate	2.22	..
5.	Field Organisation	3.00	..
6.	Hospital buildings	15.00	175.00
	Total	86.22	175.00

TABLE—IV (A)

Health Programmes under Minimum Needs Programme during Fifth Plan.

Sl.No.	Scheme.	No. of Units	Outlay proposed (Rs. lakhs.)
1.	New sub-centres	496	173.60
2.	Construction of—		
	(i) Primary Health Centres	199	199.00
	(ii) Staff quarters of P.H.Cs.	346	321.22
	(iii) Sub-centres	1,245	186.75
3.	Drugs for—		
	(i) Existing Primary Health Centres	415	103.75
	(ii) Existing Sub-centres	3,014	301.40
4.	Upgradation of 81 Primary Health Centres to 80 bedded Rural Hospitals	81	874.80
	Total		2,160.42

TABLE V.

Physical Targets for Programmes under Modern Medicine.

S.No.	Programme.	Target under priority	
		I	II
1.	New Dispensaries in Rural areas (No.)	55	..
2.	Improvements to taluk hospitals :		
	(a) Beds (No. of beds)	2,879	..
	(b) Minimum necessities (No. of taluk hospitals) ..	195	..
	(c) Electrification (No. of taluk hospitals) ..	195	..
	(d) Three specialities (Medicine, Surgery and Gynaecology) (No. of taluk hospitals)	195	..
	(e) Diagnostic facilities in all taluk hospitals ..	Clinical Labs.	X-ray plants, E.C.G.
	(f) Clinics in all taluk hospitals .. ..	..	Eye, T.B., V.D., and Dental Care.
	(g) Telephone facilities in all taluk hospitals	195	
3.	Improvement to District hospitals		
	(a) Stand by Power Generators No.	16	..
	(b) Beds (No.)	1,026	..
	(c) Buildings	5	..
	(d) Mobile Medical cum-Ambulance Service Units ..	21	..
4.	Improvements to teaching hospitals—		
	(a) Stand by power generators	21	..
	(b) Beds .. ..	..	No target.
5.	Medical Education (teaching units)	6	..
6.	Medical and Health Equipment Maintenance Units ..	6	..

TABLE VI.

Physical targets for programmes under Public Health.

S.No.	Programme.	Target under priority.
1.	Improvement to Public Health Centres	
	(a) Minimum Needs Programme .. ..	.. Separately given.
	(b) Equipment to Sub-Centre (No. of Centres) ..	3,510
2.	Laboratories :	
	(a) Upgrading of Public Health Laboratories (No.) ..	15
	(b) Food and Drugs Laboratories (New Laboratories) ..	21
3.	Food and Drug Administration .. ..	.. Staff.
4.	Auxilliary Programmes :	
	(a) Maternity and Child Health Polio Vaccinations (No. of Children in lakhs) .. ..	.. 21
	(b) School Health Service Units .. ..	.. 21
	(c) Health Education Mobile Units .. ..	.. 21
5.	Other Programmes :	
	(a) State Health Transport Organisation :	
	(i) Regional Workshops .. ..	.. 2
	(ii) Mobile Maintenance Units .. ..	.. 7
	(b) Vital statistics .. ..	.. Staff
	(c) Training of Offices .. ..	.. No target fixed.
	(d) Building to Directorate .. ..	.. One

TABLE VII.

Physical targets to Indian Medicine.

S.No.	Programme.	Target under priority.
1.	New Dispensaries (No.) .. ..	.. 87
2.	Medical Education :	
	No. of new Departments in—	
	(a) Nizamia Tibbi College .. ..	.. 6
	(b) Government Ayurvedic College .. ..	.. 4
3.	Pharmacy .. ..	.. No target.
4.	Hospital buildings .. ..	.. No target.

26. URBAN WATER SUPPLY

In the National Approach it has been mentioned that greatest emphasis should be given for completion of existing schemes of urban water supply. The availability of institutional funds for the local authorities through market borrowings or L. I. C. loans is also indicated. In regard to the problems of sewerage and other urban sanitation measures, the technical implications have been highlighted and the need to work out the schemes in greater detail indicated.

In Andhra Pradesh the major effort is to ensure provision of water supply to all the urban areas by the end of the Fifth Plan, though it will not be possible to provide adequate quantities in all cases. Augmentation of water supply may be necessary in certain urban areas and while some of these are proposed to be taken up now more will be taken up in the Sixth Five Year Plan. Augmentation of water supply for the fast developing metropolitan area of Hyderabad has been given greater importance. Attention is also sought to be given to sewerage in urban areas. Andhra Pradesh State has one Municipal Corporation and 83 Municipalities including Kothagudem notified area with a total population of 8.40 millions as per 1971 Census representing 19.8% of the State's population. The Public Health Engineering Department is in-charge of water supply and prainage schemes in the Municipalities and towns in the State, while Chief Engineer (R. & B.) is in-charge of Hyderabad Water Works and Manjira Water Supply Scheme. The Corporation of Hyderabad is also implementing re modelling of the water supply system in the City. The allocations in Fifth Plan are as follows :

<i>(Rs. in lakhs)</i>		
I. Chief Engineer (Public Health)	..	1,800.00
II. Chief Engineer (R. & B.)	..	1,000.57
III. Municipal Corporation of Hyderabad	..	800.00
Total	..	3,700.57

The details are discussed below Department-wise :

CHIEF ENGINEER (PUBLIC HEALTH) :

Out of the 83 Municipalities in the State 45 Municipalities were provided with water supply facilities at the beginning of the Fourth Plan. But even in these 45 towns where the Water Supply is beginning to prove inadequate with urban growth and as such they are in need of substantial additions and improvements. It is anticipated that the expenditure by the Department in the Fourth Plan is likely to be Rs. 3.58 crores and with this new water supply schemes will be

provided in 9 Municipalities. Thus, by the end of Fourth Five Year Plan, 54 Municipalities out of 83 in the State would be provided with water supply schemes.

During the Fifth Plan the objectives of the Urban Water Supply Programmes will be :

- (i) to cover the entire urban and rural population with assured and adequate drinking water supply ;
- (ii) to provide all the towns with a population of 1 lakh and above with Sewerage schemes ; and
- (iii) to improve the environmental sanitation and prevention of water and air pollution.

An allotment of Rs. 18 crores has been made for water supply schemes in the Municipalities. The break up of this outlay is as follows :

			<i>(Rs. in lakhs)</i>
1. Spill-over Schemes	..	..	377.00
2. New Water Supply Schemes		..	339.00
3. Providing extensions and augmenting existing water supply to towns where water supply has been provided earlier		..	909.00
4. Sewerage Schemes		..	175.00
Total			1,800.00

The details of the spill-over schemes new water supply schemes and augmentation schemes to be taken up in the Fifth Plan period is given are the Statements I, II and III appended.

By the end of the Fifth Plan period all 83 Municipalities in the State would be covered by water supply schemes but due to lack of sufficient funds the water supply augmentation schemes can not be taken up in all towns where water supply schemes are already existing.

The position of underground drainage in existing areas of Andhra Pradesh is unsatisfactory when compared to that of water supply, and a great deal has to be done in this field. At present the Municipal Corporation of Hyderabad and 2 Municipalities namely Vijayawada (Eastern area) and Eluru (Southern area) have been provided with underground drainage schemes, that too partly serving about 10% of total Municipal population in the State. The sewerage schemes in four more Municipalities namely Visakhapatnam, Guntur, Nellore and Tenali have also been taken up for execution from the funds outside the Plan. These schemes will not cover these towns entirely and much further works have to be done.

It is proposed to take up the extensions and augmentation of treatment facilities to Hyderabad Sewerage System at a cost of Rs. 1.75 crores.

The following additional engineering personnel would be required during Fifth Plan in addition to 3 Engineering Circles already functioning under Chief Engineer, Public Health :

1. Superintending Engineer (P. H.)	..	1
2. Executive Engineers (P. H.)	..	5
3. Assistant Engineers (P. H.)	..	20
4. Junior Engineers/Supervisors	..	100

An amount of Rs. 3.10 crores is proposed for the following Central Sector Schemes in the Fifth Plan period :

<i>Scheme</i>	<i>Cost</i> (Rs. in Crores)
(a) Solid waste disposal	2.00
(b) Water pollution and air pollution	1.00
(c) Public Health Engineering training programme	0.10
Total ..	3.10

(a) In Andhra Pradesh State not a single town is having facilities for regular disposal of solid wastes. No proposals for solid wastes disposal have been contemplated in Municipalities as they are not in a position to finance the schemes from their own resources.

During Fifth Plan it is proposed to provide solid wastes disposal schemes in Hyderabad Municipal Corporation and in Vijayawada Town, and for this purpose an amount of Rs. 2.00 crores will be required—Rs. 1.50 crores for Municipal Corporation of Hyderabad and Rs. 0.50 crore for Vijayawada Municipality.

(b) With the increased tempo in industrialisation and urbanisation it is necessary to initiate control measures. In this connection a Prevention of Water Pollution Bill has been prepared by the Government of India, Ministry of Health and Family Planning and the same is awaiting the approval of the Parliament. The Centre should provide necessary co-ordination, guidance and advice and also set up Pilot Projects which can be utilised as demonstration units for the proper implementation of the total approach to the problem.

A provision of Rs. 1.00 crore is required during Fifth Plan under Central Sector for measures against water and air pollution in Andhra Pradesh.

(c) A training programme in Public Health Engineering is necessary for training Engineers and ancillary personnel for the investigation, design, execution, operation and maintenance of water supply and sanitation projects. A provision of Rs. 10 lakhs is required for this purpose.

CHIEF ENGINEER (ROADS AND BUILDINGS):

At present water is being supplied to the twin cities from Osman-sagar, Himayathsagar systems and Manjira Water Supply Scheme (Phase-I). The total quantity that is being supplied at present from the above three systems is 62.49 mega gallons per day against the total water supply requirements of 81 mgpd. by the end of Fourth Plan, thus showing a short fall of about 19 mgpd. by the end of Fourth Plan. Thus, it has become absolutely necessary to improve the water supply potential of the twin cities.

With a view to improving water supply potential in the twin cities it has been proposed to tap additional water available at Manjira Barrage constucted under Phase-I of the Manjira Water Supply Scheme. For this purpose the Manjira Phase-II Scheme costing Rs. 11.95 crores on the basis of the technical sanction accorded by the Government of India has been sanctioned by the State Government. The work on this scheme taken up in January, 1972 is now in progress and it is anticipated that an outlay of Rs. 3.48 crores would have been spent in the Fourth Plan period. It is expected that this scheme will be completed in the middle of the Fifth Plan period.

The Roads and Buildings Department are incharge of the Manjira Phase-II Scheme, re-modelling of Hyderabad Water Works System, and investigation and implementation of additional water supply for the twin cities from Srisailam Project.

An outlay of Rs. 10 crores is provided for these works. The break up of this allotment is as follows:

<i>Scheme</i>	<i>Cost</i> <i>(Rs. in lakhs)</i>
1. Manjira Water Supply Phase-II ..	700.00
2. Re-modelling of Hyderabad Water Works	800.57
3. Investigation and Implementation of Water Supply from Srisailam Project..	100.00
Total ..	1,600.57

(1) At the beginning of the Fifth Plan period an outlay of Rs. 3.48 crores would have been incurred under Manjira Project. An outlay of Rs. 7 crores has been proposed in the Fifth Plan. It is expected that this scheme will be completed by the middle of the Fifth Plan

period. After completion of this scheme, the total quantity of 45 million gallons per day of filtered water will be available for supply in the twin cities. This will take the water supply in the cities from 65 million gallon per day at the end of 1973-74 to 94 million gallon per day at the end of the Fifth Plan period.

(2) By the time the water supply from Manjira Scheme becomes available the remodelling of the distribution system in Hyderabad City area has got to be completed so as to utilise the Manjira Water Supply Scheme (Phase-II) water. In this connection, an estimate for Rs. 8.71 crores was submitted to Ministry of Health, Government of India for clearance, which has since been approved. An allocation of Rs. 8.00 crores has been made for this purpose in the Plan.

(3) Even with completion of Manjira Water Scheme Stage II the water supply for the City by end of Fifth Plan will be 94 million gallons whereas it is anticipated that the requirement of water by 1981 will be 109 m g p d and by 2001 it will be 153 m g p d. Since the present sources cannot be tapped any further it is proposed to investigate tapping water from Krishna river either from Srisaïlam or from Nagarjunasagar Project. For this purpose, a Committee was constituted under the Chairmanship of Sri K. V. Srinivas Rao, the Chairman of Andhra Pradesh State Electricity Board and in its second meeting, held on 9th April 1973, it was proposed that the detailed investigation should be carried out for the Srisaïlam Scheme only. In view of the urgency, the Committee agreed that the investigation work should be taken up at once and the execution of the scheme commenced during the first year of the Fifth Five-Year Plan. A provision of Rs. 1.00 crore is made for this purpose.

MUNICIPAL CORPORATION OF HYDERABAD :

The drains both main and sub-branches have to be laid from the unserved areas to connect them to the City Sewage System. The capacity of the existing purification plant is designed to take a discharge of 21.67 cusecs and is not able to take the present discharge of 42 cusecs. The plant has therefore to be remodelled to meet the present requirements.

The remodelling of water supply scheme in Secunderabad which was sanctioned in the Second Five-Year Plan has to be completed by laying balance main and by providing⁴ reservoirs at suitable places. A total outlay of Rs. 300.00 lakhs is proposed for these works.

STATEMENT-I

Statement showing the schemes included in Fourth Plan and spill-over to Fifth Plan

(Rs. in lakhs)

S. No.	Name of the Scheme Project.	Anticipated expenditure (Fourth Plan)	Spill-over outlay in Fifth Plan.
(1)	(2)	(3)	(4)
1.	Narasapur Water Supply Schemes ..	17.00	35.03
2.	Tadepalligudem Water Supply Schemes ..	24.00	29.70
3.	Bapatla Water Supply Schemes ..	22.08	43.03
4.	Chilakaluripeta Water Supply Schemes ..	26.33	18.61
5.	Tenali Water Supply Schemes (Stage-I) ..	4.00	14.00
6.	Guntur Water Supply (Improvements) ..	20.00	8.87
7.	Bobbili Water Supply Scheme ..	3.50	26.30
8.	Narasaraopeta Water Supply (Improvements) ..	15.96	2.00
9.	Gudiwada Water Supply Scheme ..	10.05	10.00
10.	Mandapeta Water Supply Scheme ..	3.00	24.06
11.	Markapur Water Supply Scheme ..	11.90	5.83
12.	Rayadurg Water Supply Scheme ..	6.67	5.67
13.	Kadiri Water Supply Scheme ..	6.00	11.48
14.	Madanapalle Water Supply Scheme ..	8.83	20.05
15.	Yemmiganur Water Supply Scheme ..	3.00	18.66
16.	Adoni Water Supply Scheme ..	5.96	1.04
17.	Khammam Water Supply Improvements (Stage-I)	9.04	6.08
	Stage II-A .. ..	..	..
	Stage II-B .. ..	..	..
18.	Remodelling Secunderabad Water Supply Scheme	35.97	20.26
19.	Narayanapeta Water Supply Scheme ..	8.77	2.00
20.	Bhongir Water Supply Scheme ..	11.80	11.73
21.	Siddipet Water Supply Scheme ..	12.01	14.08
22.	Jadcherla Water Supply Scheme ..	16.10	14.20
23.	Mancherla Water Supply Scheme ..	4.59	6.48
24.	Bodhan Water Supply Improvements ..	11.03	8.25
25.	Adilabad Water Supply Scheme ..	4.76	28.74
	Total ..	358.38	877.15
	Telangana Regional Committee ..	28.40	..

STATEMENT-II

New Water Supply Schemes included in Fifth Plan

(Rs. in lakhs)

<i>S. No.</i>	<i>Name of the Scheme.</i>	<i>Estimated cost.</i>	<i>Fifth Plan outlay.</i>
(1)	(2)	(3)	(4)
<i>Coastal Andhra :</i>			
1.	Bheemunipatnam Water Supply Scheme	9.90	8.47
2.	Samalkota Water Supply Scheme ..	30.00	26.00
3.	Tuni Water Supply Scheme ..	18.68	16.18
4.	Nidadavolu Water Supply Scheme ..	16.73	14.49
5.	Kovvur Water Supply Scheme ..	16.00	13.84
6.	Chirala Water Supply Scheme ..	93.81	93.81
7.	Repalli Water Supply Scheme ..	31.41	31.41
8.	Ponnur Water Supply Scheme ..	25.00	21.66
9.	Mangalagiri Water Supply Scheme ..	32.71	28.34
10.	Kavali Water Supply Scheme ..	40.00	34.64
	Total for Coastal Andhra ..	314.24	288.84
<i>Rayalaseema Nil</i>			
<i>Telangana :</i>			
1.	Janagaon Water Supply Scheme ..	14.00	12.12
2.	Kagaznagar Water Supply Scheme ..	14.06	12.18
3.	Kothagudem Water Supply Scheme	26.00	26.00
	Total for Telangana ..	54.06	50.30
	GRAND TOTAL ..	368.30	339.14

STATEMENT-III

New Water Supply Augmentation Schemes-Fifth Plan

(Rs. in lakhs)

<i>S. No.</i>	<i>Name of the Scheme.</i>	<i>Estimated Cost</i>	<i>Fifth Plan outlay.</i>
(1)	(2)	(3)	(4)
(a) Coastal Andhra :			
1.	Vijayawada	219.00	100.00
2.	Kakinada	200.00	100.00
3.	Tenali (Block II, III)	40.00	25.00
4.	Rajahmundry	80.00	40.00
5.	Eluru	85.00	40.00
6.	Machilipatnam	111.00	44.00
Total for Coastal Andhra		735.00	349.00
(b) Rayalaseema :			
1.	Cuddapah	80.00	47.00
2.	Proddatur	60.00	30.00
3.	Anantapur	30.00	30.00
4.	Kurnool	100.00	70.00
5.	Guntakal	50.00	30.00
6.	Hindupur	30.00	30.00
7.	Chittoor	40.00	20.00
8.	Nandyal	60.00	40.00
Total for Rayalaseema		450.00	297.00
(c) Telangana :			
1.	Warangal	800.00	263.00
Total for Telangana		800.00	263.00
Grand Total for New Water Supply Augmentation Schemes		1,935.00	909.00

27. RURAL WATER SUPPLY

In the Approach document to Fifth Plan, the need to provide drinking water facilities on a priority basis to rural areas suffering from scarcity, health hazards or special problems such as iron and flourides etc., has been stressed along with the need to cover villages with inadequate supply of drinking water, especially for Harijans and backward classes.

In Andhra Pradesh drinking water problem arises in different situations. First, there are villages which have no source of water supply at all and have to fetch water from a long distance; second, there are villages with some source but are suffering from endemic cholera, etc., third, there are villages which suffer from sources with high flouride content, etc., fourth, it has been observed that often the main villages may have drinking water facility but not the hamlets or Harijanwadass located at a distance from the main village, which constitute distinct habitations though for purposes of revenue collection and administration, they form part of the main village. It is thus necessary to provide drinking water facilities not only to the main village where the bulk of the population resides but also to all the inhabited hamlets and Harijanwadass.

REVIEW :

It was estimated that the total number of distinct habitations comprising villages, hamlets, and Harijanwadass, located at a distance of 1 Km. or more from a village or hamlet, in the State was 64,081, out of which 43,059 will have drinking water facilities by the end of the Fourth Plan.

Construction of simple wells proved to be costly and time consuming especially in the rocky and difficult areas, and hence a major programme of sinking bore-wells was introduced in 1968 with the rigs supplied by the UNICEF. So far the UNICEF supplied 15 rigs to the State in addition to 8 rig frames which were mounted on trucks provided by the State Government. With the assistance of these 23 rigs, 4,178 bore wells were drilled upto February, 1973. The State Government also purchased another 22 rigs with the help of which 1,162 bore-wells were drilled upto February 1973. The experience of the last 5 years with the drilling programme has generally shown that bore-wells are more dependable than open wells for providing drinking water facilities on a permanent footing.

The Protected Water Supply Programmes being costly ones are generally proposed in vulnerable areas in villages with larger population and in villages which have no local source of potable water supply. The assistance of L. I. C. funds is being secured for implementing this programme.

This programme was started from the year 1963-64 onwards. The State Government sanctioned 277 schemes at an estimated cost of

Rs. 4.42 crores. in addition to this, 42 protected water supply schemes were taken up under the Special Rayalaseema Development Programme. An expenditure of Rs. 250.04 lakhs is likely to be incurred under this programme during the Fourth Plan period. Out of 319 protected water supply schemes, 183 schemes were completed by 1972-73 and 110 schemes are expected to be completed by 1973-74. The balance of 26 schemes will spill-over to the Fifth Plan and the amount required for their completion is Rs. 31.59 lakhs.

Besides the above, the State Government sanctioned 181 schemes to be taken up in 1972-73 and 1973-74 at an estimated cost of Rs. 6.45 crores. These schemes are proposed to be financed with 50 per cent L. I. C. loan and the balance 50 per cent from State resources. The L. I. C. has promised to allot Rs. 125 lakhs during 1973-74. The State Government will be able to provide Rs. 48 lakhs for these schemes during this year. The balance of Rs. 4.72 crores will spill-over into the Fifth Plan. Out of this, the L. I. C. commitment is Rs. 1.97 crores. The balance commitment of the State Government is 2.75 crores.

OBJECTIVES AND STRATEGY :

The programme of rural water supply comprises two broad groups of schemes *viz.*, (a) Rural Water Supply involving sinking of simple open wells or bore-wells; and (b) Protected water supply involving the supply of water through a more elaborate system of overhead tanks and pipes. The objective of the Rural water supply programme is to provide drinking water to all the habitations in the rural areas including, in particular, all Harijanwadadas.

In taking up protected water supply schemes only very difficult villages without a local source of potable water which, therefore, have to be provided with water through the elaborate system of over-head tanks and pipes and bigger villages would be covered by the protected water supply schemes and the rest through rural water supply schemes.

PROGRAMME DETAILS :

An amount of Rs. 31.00 crores is provided for Rural water supply schemes in the State in the Fifth Plan, the break-up of which is as follows :

<i>Scheme</i>	<i>Outlay</i> (Rs. in crores)	
(a) Rural water supply schemes (Under Minimum Needs Programme)	25.00
(b) Protected water supply schemes	6.00
		<hr/>
Total	31.00
		<hr/>

Rural Water Supply Schemes :

At the beginning of the Fifth Plan, 21,742 habitations comprising 5,280 difficult and problem villages, 6,156 Harijanwadadas, 1,500 Harijan colonies and 8,806 other villages and hamlets in soft areas will be left out without drinking water facilities. It was estimated that in order to provide drinking water for all these remaining habitations, it would be necessary to drill 24,550 bores of 4" diametre, 5,280 bores of 6" diametres and 4,000 simple wells in soft areas. The total cost of the programme was estimated at Rs. 56.18 crores and the State Government proposed that this outlay should be provided under the Minimum needs programme so that all the habitations without adequate drinking water supply in the rural areas could be provided with this facility by the end of the Fifth Plan. A working group in the Planning Commission examined the above proposals of the State Government and recommended an outlay of Rs. 29 crores under the Minimum needs programme for providing drinking water facilities for 4,080 problem and difficult villages, the details of which are given in the Chapter on Minimum Needs. The Planning Commission have, however, in their final allocation, indicated an amount of Rs. 25 crores only for the rural water supply schemes.

For the bore-wells programme, there are now two Executive Engineers with 18 sub-divisions and about 60 sections to supervise the work of the existing rigs in the State. There are also Geologists to select the sites in each sub-division. Executive Engineers are directly under the control of the Chief Engineer (P. R.) and the funds are being placed at the disposal of Executive Engineers. Necessary drilling crew is also provided for the operation of these rigs.

The proposal for constituting a separate organisation to take up drinking water programmes and sanitation is under contemplation.

Protected Water Supply :

In the Fifth Plan, the following schemes are proposed to be taken with the outlay of Rs. 6 crores provided for protected water supply schemes :

<i>Item</i>	<i>Outlay (Rs. in crores)</i>
(1) Completion of 26 spill-over schemes taken up before 1973-74	0.32
(2) Completion of 181 schemes taken up in 1973-74 with L. I. C. assistance	2.75
(3) Completion of 110 new schemes out of the 300 proposed to be taken in the Fifth Plan	2.98
Total	6.00

During the Fifth Plan period 300 new villages are proposed to be taken up for the provision of protected water supply at a cost of Rs. 15.00 crores. Fifty percent of this outlay is expected from L. I. C. as loan. Out of the balance of 50 per cent, an amount of Rs. 2.98 crores will be spent from State resources,

28. HOUSING

The ultimate objective of all economic development is to increase the Welfare of the people and Welfare is closely connected with the satisfaction of three basic needs *viz.*, food, shelter and clothing. Apart from its Welfare objective, housing activity is also important for economic development because of its capacity to stimulate growth in other sectors connected with building materials and because it creates employment.

In our plans, a major part of the investments on housing will be in the private sector and the role of the Government in the provision of housing is relatively limited to the construction of houses or provision of loan assistance for house construction to the weaker sections of the society.

The problem of housing is different in rural and urban areas. While in rural areas the problem is mainly related to providing housing facilities to economically weaker and socially backward sections of the society, the problem in urban areas is related to providing adequate accommodation to rapidly growing migrant population from rural areas.

The essential tasks in the sphere of village housing will be to get appropriate layouts made for the growing villages, to provide basic amenities such as water and sanitation facilities, and to stimulate private building and renewal activity. Encouragement will have to be given to co-operative effort. Special housing schemes for the Scheduled Castes or other under privileged classes should be integrated into the village layout along with general housing programmes.

REVIEW :

The State Plan Schemes on Housing in Urban areas consists mainly of (1) assistance by way of loans for construction of houses and (2) construction of houses for giving them to needy on rental or hire purchase terms. They mainly cater to slum dwellers, industrial workers and low income groups. The schemes relating to slum dwellers are implemented by Hyderabad Municipal Corporation for Hyderabad city, and the Director of Municipal Administration in the District Municipalities. Andhra Pradesh Housing Board undertakes construction of houses for Low Income and Middle Income Groups to be given on rental or hire purchase basis. The Roads and Buildings Department constructs houses under rental Housing for Government Employees. The Registrar of Co-operative Societies and now the Andhra Pradesh Cooperative Housing Societies Federation Limited advances loans for Housing through Co-operative Societies. Housing for Industrial Workers is done by the Commissioner of Labour. Village Housing Schemes are implemented by the Director of Town Planning by providing loans to individuals through the Panchayat Samithis.

The Scheme-wise expenditure incurred in the Fourth Plan period is shown below.

<i>Scheme</i>	<i>Expenditure</i> (Rs. in lakhs.)
Subsidised and Industrial Housing	.. 11.58
Low Income Group and Middle Income Group Housing	.. 9.24
Government Housing Village Housing Projects	.. 6.50
Slum clearance	.. 61.99
Other Life Insurance Corporation Schemes	.. 643.71
Total	.. 888.02

OBJECTIVES AND STRATEGY :

The objectives of housing programmes in the State are:—

- (a) to provide house-sites and housing facilities in the rural areas especially to Scheduled Castes and Tribes;
- (b) to provide housing facilities by the Police Housing Corporation and through Rental Housing Schemes and other Housing Schemes taken up by the Local bodies;
- (c) to make a substantial effort towards slum clearance and environmental improvement in slum areas in bigger cities; and
- (d) to provide housing for industrial workers.

The effort towards housing provided in the plan is only partial and a number of other institutions like State Housing Federation, Scheduled Castes and Scheduled Tribes Housing Federation, State Housing Board etc., are expected to play a leading role in providing housing facilities.

Statement.

PROGRAMME DETAILS :

In the Fifth Plan, an outlay of Rs. 4350 lakhs is made for Housing. This includes financing by the Life Insurance Corporation which will be distributed among various schemes as per their requirements from year to year. The programme-wise distribution of this outlay is shown below:—

(Rs. in lakhs)

Programme	State Plan allocation	Minimum Needs Programme.	Total.
(1)	(2)	(3)	(4)
Housing Board ..	1550	..	1550
Slum Clearance ..	500	500	1000
Housing Societies Federation ..	100	..	100
Industrial Housing ..	150	..	150
Village Housing ..	50	..	50
House-site for landless labourers ..	..	1300	1800
Rental Housing ..	200	..	200
Total ..	2550	1800	4350

Housing Board:

The Andhra Pradesh Housing Board is a statutory body constituted under the Andhra Pradesh Housing Board Act, 1956. The Housing Board has been implementing Middle Income Group Housing and Lower Income Group Housing programmes both from the Life Insurance Corporation funds and from their own funds. Till the year 1970, the activities of the Housing Board were restricted to the twin cities of Hyderabad and Secunderabad but subsequently they have been extended to the Districts. In addition to the above schemes, the Andhra Pradesh Housing Board has also taken up the construction of multi-storeyed buildings both for commercial and residential purposes and the first project of this kind has been started in Hyderabad City at an estimated cost of Rs. 110.23 lakhs. The Housing and Urban Development Corporation have sanctioned a loan of Rs. 80.00 lakhs to the Housing Board for this purpose during 1972-73. An allocation of Rs. 15.5 crores has been made to the Housing Board to construct tenements under Lower Income Group Housing and Middle Income Group Housing schemes in the Fifth Plan period.

The Andhra Pradesh Co-operative Housing Societies Federation Limited has been advancing loans for construction of Houses through the agencies of Co-operative Societies. An amount of Rs. 1.70 crores has been obtained as loan from Life Insurance Corporation in the first two instalments. It is proposed to give Rs. 1 crore under the State Plan to the Housing Societies Federation towards share Capital to enable it to obtain loans from the Life Insurance Corporation for expanding its activities.

Under the subsidised Industrial Housing scheme the tenements so far constructed since First Plan are 5,516 houses. While the number of tenements constructed during the First and Second Plans were more than 2,000 in each Plan, only 918 houses were constructed in Third Plan. The number of houses proposed for construction in Fourth Plan is 326. In view of the growing industrial activity it is proposed to encourage the construction of houses to industrial workers by all the three agencies *i.e.*, State agency employers agency and workers Co-operative Housing Societies. Against an anticipated expenditure of Rs. 11.58 lakhs under this sector in the Fourth Plan it is proposed to allot Rs. 1.50 crores in the Fifth Plan.

Under the village housing scheme, loans are being advanced for construction of houses by individual members. Master Plans have been prepared for 450 villages which have been selected under this scheme. The scheme of advancing loans is under implementation in 217 villages. The scheme also envisages improvement of streets and drains in some of the villages. 1/6 of the outlay is given as grant and 2/6 outlay is allotted for allotment of house-sites for landless agricultural workers. An allotment of 50 lakhs has been made towards this under the Fifth Plan.

Under the slum clearance scheme, it is proposed to give a big momentum towards clearance of slums in Hyderabad City and in all Class (I) Cities. It is estimated that the population covered by slums is 5.46 lakhs in Hyderabad city and other Class (I) towns in the State. The cost of slum clearance and improvement is estimated to cost Rs. 73.50 crores. In the Fifth Plan an amount of Rs. 5 crores has been allotted for this purpose under the normal Plan and Rs. 5 crores under the Minimum Needs Programme. The amount of Rs. 5 crores approved by the Planning Commission under Minimum Needs Programme is intended for Environmental improvement of slum areas in Hyderabad, Visakhapatnam and Vijayawada, the details of which are given on the Chapter on Minimum Needs Programme. Thus an amount of Rs. 10 crores is proposed to be spent on slum clearance schemes by constituting Slum Clearance Board.

There are about 18.82 lakh agricultural labour households in the State, out of which, 14.12 lakh house-holds are landless and are in need of house-sites. Under the Minimum Needs Programme a scheme is being taken up for providing house-sites to all the landless agricultural labour households in need of them for which an outlay of Rs. 13 crores has been made, the details of which are mentioned in the Chapter on Minimum Needs Programme.

29. URBAN DEVELOPMENT.

According to the 1971 census, the urban population in the country was 1090 lakhs, constituting 19.87 per cent of the total population, against 17.98 per cent in 1961 census. The number of towns have increased from 2461 to 2921 in 1971. The State of Andhra Pradesh has recorded an urban population of 84 lakhs in 1971 constituting a percentage of 19.35 to the total population of the State against 17.44 in 1961. The number of towns in the State have increased from 212 to 224.

The National approach in Fifth Plan towards comprehensive urban development is oriented to give effect to policies and programmes (a) for making land available for the several socio-economic needs particularly to the weaker sections of the community ; (b) for implementing comprehensive area development and redevelopment schemes for composite purposes like housing, slum clearance, rehousing and other remunerative activities like shopping centres etc., and (c) for ensuring increased public ownership of land with a view to issue it as a resource for development and to check rise in urban land values and speculation. The approach further contemplates preparing of Five-Year City Development programmes, Establishing of Development authorities and clearing and redeveloping of slum areas situated in the central parts of the city.

APPROACH :

The approach of the State is preparation of Master Plan for all Class I and Class II towns, with special emphasis for the towns in the backward areas of the State. Implementation of sanctioned Master Plans and Short Term Development Plans is also envisaged. Development of central areas and urban renewal schemes are contemplated in the Metropolitan City of Hyderabad. Schemes for improving finances of the Municipalities and constitution of Development Authorities for implementation of Master Plans are also contemplated in the Fifth Plan.

REVIEW :

During the Fourth Plan a Master Plan for the Metropolitan City of Hyderabad has been prepared. All the Class I towns have been covered with the scheme of preparation of Master Plans for comprehensive development and some of them have been sanctioned so far. A Town Planning trust has been constituted for the major port town of Visahkapatnam and constituting a Town Planning trust for Vijayawada is under consideration. Many Class II Towns have also been taken up for preparation of Master Plans. Some of the programmes envisaged in the Master Plan were also implemented to some extent subject to the constraint of finances. Many remunerative schemes like construction of shops, markets etc., have been taken up and completed.

OBJECTIVES AND STRATEGY :

The objectives of Fifth Plan may be summarised as :

- (a) preparation and implementation of comprehensive Development Plans and constitution of Development Authorities for the proper growth of urban areas,
- (b) making the central parts of cities more habitable by urban renewal schemes, and
- (c) improving the financial resources of the Municipalities to effect urban improvement schemes.

The strategy is to prepare comprehensive regional and urban development plans, conducting necessary transportation studies so that a frame for optimum urban growth is provided. In preparing such plans the Regional planning and development strategies are taken into account. It is necessary to follow-up with implementation by various measures in all sectors. In the specific context of urban development it is proposed to promote remunerative enterprises, execute urban renewal schemes and create and strengthen the necessary organisational support in terms of City Development Authorities were needed.

PROGRAMME DETAILS :

The schemes proposed for Fifth Plan with their financial implications is summed-up below :

<i>Programme</i>	<i>Fifth Plan outlay (Rs. in lakhs)</i>
(i) Assistance to Municipal Towns for remunerative enterprises.	.. 250.00
(ii) Implementation of Master Plan of Hyderabad City.	.. 200.00
(iii) Urban renewal schemes in Hyderabad City	.. 100.00
(iv) City Development Authorities and Implementation of Master Plans.	.. 155.00
(v) Preparation of Master Plans for Cities and Towns.	.. 50.00
(vi) Preparation of Regional Plans for fast growing urban complexes.	.. 15.00
(vii) Traffic and Transportation studies	.. 15.00
(viii) Implementation of Town Planning Schemes.	.. 15.00
Total ..	800.00

The implementing agency for item in (i) is the Director of Municipal Administration, for items (ii) and (iii) the Commissioner, Municipal Corporation of Hyderabad and for the rest Director of Town Planning.

(a) The scheme of advancing financial assistance to all the 83 Municipal Towns in the State other than the Municipal Corporation of Hyderabad at a cost of Rs. 2.5 crores envisages the construction of shopping centres, markets, slaughter houses which will augment the financial resources of the municipal bodies. The scheme also contemplates provision of parks, play fields and street lighting where the local bodies are not in a position to finance these schemes.

(b) A Master Plan for Hyderabad City, the Capital of the State (with a population of 18 lakhs as per the latest census) has been prepared. The Master Plan covering a span of 30 years envisages many schemes for development, which include the widening of existing roads, laying out of by-pass roads, ring roads and construction of Bridges on the River Musi as well as Railway overbridges. It also envisages establishment of wholesale market, truck terminals, etc. In the past the Master Plan has been implemented in a piecemeal manner limiting its scope only to widening of roads. In the Fifth Plan, more attention is proposed to be laid on the construction of truck terminals, wholesale markets and market and shopping centres in different parts of the city on a high town-hood pattern the widening of an existing bridge and the constructing of a New Bridge on the River Musi is also contemplated in Fifth Plan. Towards this, a sum of Rs. 200 lakhs has been set apart in Fifth Plan. This amount will be transferred to the Metropolitan Development authority once it is constituted.

(c) Urban renewal schemes are proposed to be implemented in Hyderabad City. This involves the acquisition of lands and buildings in the central parts of the City areas involving huge expenditure. Areas near Charminar and Sultanbazar, etc., are proposed to be taken up under this scheme. A sum of Rs. 100 lakhs has been allotted for this purpose in Fifth Plan.

(d) Master Plan for Class I Towns with a population of over one lakh have been prepared. The number of Class I Towns in the State (excluding Hyderabad City) are 12 as per 1971 census. Master Plans for some of the Class I Towns like Warangal, Visakhapatnam and Vijayawada are already sanctioned by Government. For implementing the Master Plan a Town Planning Trust has already been constituted for Visakhapatnam. It is proposed to constitute Development Authorities for all the Class I Towns and entrust them with the implementation of Master Plans. A sum of Rs. 155 lakhs has been set apart for this purpose in Fifth Plan.

(e) Master Plans have been prepared for almost all the Class I Cities in the State during the Third and Fourth Five-Year Plans. During the Fifth Plan it is proposed to prepare Master Plans for all the towns having more than 50,000 population and towns of tourist and religious importance. A sum of Rs. 50.00 lakhs has been allotted for this purpose in Fifth Plan.

(f) Urban Agglomerations with many physical and planning problems are in existence in the State. For instance the growth of Visakhapatnam and its industrial impact on physical dimensions have many ramifications. To create a better environment, it is proposed to take up Regional Development Plans for Fast Developing Urban Complexes during the Fifth Plan period at a cost of Rs. 15.00 lakhs.

They are :

- (i) Visakhapatnam City Region with the newly coming up Steel Plant area and its township.
- (ii) Vijayawada, Tenali and Guntur Urban Complexes
- (iii) Rajahmundry Urban Complex (Rajahmundry Kakinada by Nodal point).
- (iv) Hyderabad Metropolitan Region.
- (v) Kothagudem—Paloncha—Yellandu Industrial-cum-Mining Complex.
- (vi) Cuddapah and Proddatur Urban Complex.

(g) Due to increase in traffic especially cities having more than two lakhs population, the traffic and transportation problems are increasing e.g., the traffic accidents, traffic bottle-necks and traffic congestion etc. To know the extent of the problems and to suggest solutions it is proposed to conduct Traffic and Transportation surveys at a cost of Rs. 15.00 lakhs by establishing a separate traffic cell for Hyderabad Metropolitan area, Visakhapatnam, Warangal, Vijayawada, Guntur and Kurnool.

(h) Among the Towns for which outline Development Plans have been prepared, preparation of Detailed Town Planning Schemes will be taken up during the Fifth Five-Year Plan for such of those towns which have rapid expansion possibilities. Adequate funds have to be provided during the Fifth Plan for executing Detailed Town Planning Schemes. There are about forty sanctioned Detailed Town Planning Schemes in the State which are in different stages of implementation and have not taken any shape for want of adequate funds. A sum of Rs. 15.00 lakhs has been proposed in the Fifth Five-Year Plan for this purpose.

ADMINISTRATIVE AND ORGANISATIONAL ISSUES :

The schemes relating to remunerative enterprises are executed by the concerned Municipalities under the technical guidance of the Director of Town Planning and Chief Engineer Public Health. Similarly the schemes of the Municipal Corporation of Hyderabad are also executed with the technical guidance of the said two agencies under the overall supervision of the Municipal Commissioner.

There is no comprehensive Town Planning legislation covering all the Municipalities in the State. The Town Planning activities by the Hyderabad Municipal Corporation are being done under the Hyderabad Municipal Corporation Act of 1955. The Town Planning activities of the District Municipal Towns in the State are being governed out by different Acts. A comprehensive Town Planning Bill has been contemplated; to secure a uniform procedure for all the Municipal Towns in the State.

A comprehensive legislation for constituting Development Authorities for the Metropolitan City of Hyderabad as well as to the Municipal Towns is on the anvil since the existing legislation does not provide for the constitution of such Development Authorities so as to implement the Master Plans for the Cities since the scope of Master Plan not only covers the city concerned but the immediate hinterland around it.

The High Powered Committee constituted on Municipal Finance has also made several recommendations for improving the finances of the Municipalities. Some of these recommendations have been accepted in principle by Government and some are under examination. When the recommendations are implemented the financial position of the Municipalities is likely to improve to a great extent.

30. WELFARE OF SCHEDULED CASTES AND OTHER BACKWARD CLASSES.

Of the State's population of 435 lakhs as per 1971 census the population of Scheduled Castes is 58 lakhs constituting 13.3% of the total population. The Backward Class population is estimated as 173 lakhs constituting 39.8% of the total population.

92 communities have been declared by Government as socially, educationally and economically Backward on the recommendations of the report submitted by Backward Classes Commission constituted by the State Government. These include wandering communities and traditional beggars.

The directive principles of the Constitution lay down that the State shall promote with special care the educational and economic interest of the weaker sections of the people, and in particular, of Scheduled Castes and Scheduled Tribes, and shall protect them from social injustice and exploitation.

In the Fifth Plan the strategy of development of backward classes, places greater emphasis on the role of the general sector in providing major developmental programmes. The public consumption programmes, specially in regard to minimum needs, will involve eligibility conditions which will give high priority to Scheduled Castes, Scheduled Tribes and Nomadic Tribes. Programmes of the general sector such as agriculture, land reforms, village and small scale industries, training programmes for employment in semi-skilled professions, will have to accord high priority to the development of the backward classes. Education, economic development and social legislation programmes will be directed towards improvement in the quality of life of these communities enabling them over a period of time to reach reasonable levels of development.

The national approach also stresses the need to identify the more backward among the backward classes with a view to taking up programmes covering economic development and the minimum needs. Minimum integrated Child Care Services such as supplementary nutrition programmes for the most deprived families among the backward classes is also contemplated. Special coaching for talented students towards suitable career planning and guidance with a view to securing gainful employment is contemplated. Improving of the living conditions of those engaged in unclean occupations and promotion of awareness for the removal of social disabilities has been envisaged. More emphasis is proposed to be given for research in the problems of Scheduled Castes and Denotified Tribes and training of personnel to deal with the specific problems of these communities such as social disabilities etc.

The State approach towards the problem of Scheduled Castes and other Backward Classes would be not only to continue the ameliorative measures which have been taken up in the previous Five-Year Plans but also to take up a package of measures in terms of education

and training, economic-uplift, better living conditions and social services. In the field of education the approach is to provide not only scholarships and hostels but also provide education material with stress on professional education and give such training facilities as would enable immediate employment opportunities. While these are important, they would cover only a part of the total problem and that too the younger generation in pursuit to their educational activities. The economic uplift programmes on the other hand seek to assist the cultivators, agricultural labour, professionals and artisans through financial assistance for modernisation of their avocations. Full use of institutional finance is sought to be made through the setting up of finance corporations for Scheduled Castes and Backward Classes by providing sufficient share capital. In regard to betterment of living conditions while house-sites are sought to be provided through the Minimum Needs Programme housing material especially fire proof roofing material is proposed to be provided under the State Plan Schemes a part from the construction of houses through the aid of Scheduled Castes and Scheduled Tribes Co-operative Housing Societies Federation Limited by providing the required share capital. The social services which will enable public consumption facilities through schooling, health, nutrition etc., are proposed to be provided through the Minimum Needs Programme.

REVIEW :

The expenditure on the welfare of Scheduled Castes and other Backward Classes during Second Plan was Rs. 191.04 lakhs, Third Plan Rs. 179.90 lakhs, three Annual Plans Rs. 29.50 lakhs and the anticipated expenditure in Fourth Plan is Rs. 297.94 lakhs.

The schemes implemented may be broadly classified into (i) Education, and (ii) Economic-uplift. The expenditure on these two broad categories including the anticipated expenditure in Fourth Plan is as follows:—

(Rs. in lakhs).

<i>Sector.</i>	<i>Sche- duled Castes.</i>	<i>Other back- ward classes.</i>	<i>Total.</i>
(1)	(2)	(3)	(4)
(i) Education ..	112.50	22.50	135.00
(ii) Economic uplift . .	27.00	6.00	33.00
(iii) Special Rayalaseema Develop- ment Programme ..	104.94	..	104.94
(iv) Special Coastal Andhra Deve- lopment Programme. ..	25.00	..	25.00
Total	269.44	28.50	297.94

(1)	(2)	(3)	(4)
<i>Centrally Sponsored Schemes:</i>			
(i) Education			59.25
(ii) Intergrated rural development programme			351.23
Total:			410.48

The important achievements under various programmes during the Fourth Five-Year Plan are described below :

Scheduled Castes:

Pre-Matric stipends to students of Industrial Training Institutes belonging to Scheduled Castes at the rate of Rs. 45.00 p.m. were awarded at a cost of Rs. 20.50 lakhs. The total number of targeted and anticipated achievement in the Fourth Plan are 5,200 stipends. Book-Banks were opened in 17 college hostels for the benefit of Scheduled Caste students at a cost of Rs. 1.00 lakh. 77 new hostels have been opened for which a sum of Rs. 42.00 lakhs is the anticipated expenditure. 13 hostel buildings have also been constructed during this plan-period. Hostels were constructed from other special schemes of Telangana Regional Committee (88), Rayalaseema Development Board (21) and centrally sponsored schemes (5). 54,000 pairs of stitched garments to the boarders in Government hostels are anticipated to be distributed by the end of Fourth Plan at an estimated cost of Rs. 9.00 lakhs. 3,24,000 school-going children of the age-group of 0-6 years and lactating mothers would receive CARE food at a cost of Rs 36 lakhs by the end of the Plan period.

300 Scheduled Caste agricultural families are expected to be benefited with assistance for purchase of agricultural implements and plough bullocks for which a sum of Rs. 9.00 lakhs would be spent. 300 agricultural labour families will be advanced financial assistance for the purchase of milch cattle at an anticipated expenditure of Rs. 9.00 lakhs. For providing gainful means of employment in agricultural field, interest free loans would be advanced by the end of the plan to 600 persons at an anticipated expenditure of Rs. 9.00 lakhs.

Backward Classes:

2,300 pre-matric stipends to students of Industrial Training Institutes would be given by the end of plan and an expenditure of Rs. 8.25 lakhs is anticipated. 11 Government hostels would be opened at an anticipated expenditure of Rs. 8.25 lakhs. The number of beneficiaries of CARE food would be 63,000 involving an expenditure of 6.00 lakhs. 600 Backward Classes families would be supplied with milch cattle at a cost of Rs. 6.00 lakhs,

OBJECTIVES :

The objectives of the Fifth Plan Programme for the Welfare of Scheduled Castes and other Backward Classes would be:

- (1) Providing educational and training facilities on a larger scale especially in the fields of technical and professional education with special orientation towards fields with immediate job opportunities.
- (2) Implementing a package programme for the economic uplift of the classes by providing financial assistance for cultivators, agricultural labourers, artisans and professionals resulting in higher levels of income and consumption.
- (3) Supplementing the efforts to be made under the Minimum Needs Programme through social services.

STRATEGY :

A strategy would therefore be:

I. In regard to educational programmes:

- (a) To increase scholarship facilities for Scheduled Castes and Backward Classes for formal education.
- (b) To set up special institutions for coaching the Scheduled Caste and Backward Class students for preparing them for appearing in various competitive and qualifying examinations.
- (c) To set up institutions for imparting specialised training such as Shorthand, Typewriting, Motor Driving and Village Officers Courses with the necessary financial help.
- (d) To provide Buildings and other facilities for Government hostels for these classes.
- (e) To take up special programmes for nutrition for children and vulnerable sections of the population.

II. In regard to Economic Programmes:

- (a) To provide adequate financial assistance for the economic uplift of agriculturists, agricultural labourers and cultivators by purchase of implements, bullocks, milch cattle, etc.
- (b) To provide financial assistance to professionals and local artisans and supplement such assistance available through financial institutions.
- (c) To provide roofing material which will enable the Scheduled-Castes families to have fire proof houses.

PROGRAMME DETAILS :

The outlay in the State Plan for Scheduled Castes and other Backward Classes is:

Rs. in lakhs.

S. No.	Head of Development.	Outlay		
		Scheduled Castes.	Other Backward classes.	Total.
(1)	(2)	(3)	(4)	(5)
I. Education:				
(a)	Pre-matric Scholarships & Stipends	41.00	15.00	56.00
(b)	Scholarships .. ..	..	300.00	300.00
(c)	Book Banks	5.00	5.00	10.00
(d)	Pre-examination Training Centres	10.00	12.50	22.50
(e)	Motor Driving Schools ..	9.60	..	9.60
(f)	Typewriting and Shorthand Training Centres ..	10.32	..	10.32
(g)	Opening of Village Officers Training Centres ..	1.00	..	1.00
(h)	Government Hostels ..	84.00	15.00	99.00
(i)	Construction of Government Hostel buildings ..	330.00	108.50	438.50
(j)	Monetary aid for clothing ..	65.00	..	65.00
(k)	Nutrition	72.00	15.00	87.00
II. Economic Uplift :				
(a)	Assistance to Agriculturists	18.00	50.00	68.00
(b)	Supply of Milch Cattle ..	18.00	12.00	30.00
(c)	Assistance to petty trades	40.00	25.00	65.00
(d)	Financial Assistance for Lawyers, Doctors and Chartered Accountants	10.00	10.00	20.00
(e)	Assistance to professional Backward Classes ..	..	50.00	50.00

(1)	(2)	(3)	(4)	(5)
(f)	Setting up of Scheduled Castes Finance Corporation	100.00	..	100.00
(g)	Setting up of Backward Classes Finance Corporation .. ..	..	100.00	100.00
(h)	Schemes for setting wandering communities (B. C.) .. ..	..	15.00	15.00
(i)	Supply of Fire Proof Housing Material	127.50	..	127.50
(j)	Share Capital Contribution to A. P. S. C. and S. T. Housing Societies Federation Limited	150.00	..	150.00
	Total	1,091.42	733.00	1824.42
III.	Strengthening of Administration .. ..	..	..	55.00
	Grand Total .. ..	..	..	1,879.42

SCHEDULED CASTES

I. Education :

Providing of Pre-matric Scholarships and stipends to students studying in Industrial Training Institutions on a large scale is contemplated. During the Fifth Plan period the number of Scheduled Castes Students who are likely to attend Industrial Training Institutions are expected to double themselves due to the increase of students from year to year. An allocation of Rs. 41.00 lakhs has been made to award 9,000 stipends against the Fourth Plan achievement of 5,200.

It is proposed to continue the scheme of Book-Banks of providing books in the hostels at a cost of Rs. 5,000 lakhs thus providing this facility in 110 hostels against 20 in the Fourth Plan.

It is proposed to open pre-examination Training Centres since the Scheduled Castes candidates are hardly qualifying themselves to fill up the reserved seats in different professional institutions due to the poor coaching they had. For instance 33 seats in the Medical Colleges were not given to Scheduled Caste candidates during the year 1972-73 as they could not qualify in the entrance examination conducted.

This scheme envisages the setting up of 33 centres covering all the 21 District Headquarters and in a few big Taluk Headquarters. The students will be imparted training for a period of about 2 months in the subjects that are required for appearing to the entrance examinations. A sum of Rs. 10,00 lakhs has been allotted for this purpose.

Opening of Village Officers Training Centres for Scheduled Castes is contemplated in the Fifth Plan. If the Village Officers belong to Scheduled Caste they can pay whole-hearted attention on the welfare of weaker sections. Such of the students who have discontinued after passing 7th Class may be given training of Village Officers by imparting a training programme for a period of 3 months giving a stipend of Rs. 50 per month per candidate. It has been proposed to train 100 candidates per batch by setting up of two training centres so that 500 candidates can be trained at a cost of Rs. 1 lakh during the Fifth Plan period.

It is proposed to start Motor Driving Training Centres for the benefit of Scheduled Caste candidates to improve their employment opportunities. Number of candidates studied upto 5th or 6th Class belonging to Scheduled Castes continue to be idle as they could not present their studies beyond that level for various reasons. Imparting of training in driving vehicles would create a good job opportunity both in public and private sectors. It is proposed to establish 3 training centres with an intake of 15 candidates per batch with a duration of 4 months so that 3 batches can be turned out in one year. Each candidate will be offered a stipend of Rs. 50 per month. At the rate of 135 candidates per year it is proposed to turn out 675 persons during the Fifth Plan period at a cost of Rs. 9.60 lakhs.

Training in Typewriting and Shorthand is proposed to be given to Scheduled Caste Students who pass Matriculation Examination and who seek employment; so as to enrich the possibilities of securing immediate employment. If one qualifies himself in Typewriting and Stenography there are vast chances of securing employment both in public and private sector. The present district level training centres under the control of Director of Employment and Training are notable to cope up with the requirements of the Scheduled Caste Students. It is proposed to start 6 training centres exclusively for the benefit of Scheduled Caste candidates by giving them coaching facilities and stipends. These will be kept under the supervision of the district level training centres. It is proposed to turn out 600 students at the rate of 120 per year during the Fifth Five-Year Plan period at a cost of Rs. 10.32 akhs.

It is proposed to open Scheduled Caste Government Hostels, where Junior Colleges are functioning. At present 15 Taluk Headquarters, 67 Samithi Headquarters and 28 other places where Junior Colleges have been opened do not have any Scheduled Caste Hostels. During the Fifth Plan period 110 Government Hostels are proposed to be opened and maintained at a cost of Rs. 84.00 lakhs against the opening up of 77 Scheduled Caste Hostels during the Fourth Plan period.

The Government took a decision to open 560 Scheduled Caste Hostels with a strength of 26,412 borders. It has therefore been proposed to take up the construction of buildings in a phased programme. In addition to the above proposals for opening up of 560 new Hostels there are at present 467 existing Hostels inclusive of 54 girls Hostels. Of these 127 have been provided with buildings leaving 340 Scheduled Caste Hostels yet to be provided with buildings. The total number of borders to be accommodated in these Hostels would be 49,000. It is

proposed to construct 330 Hostels to accommodate 16,500 borders at a cost of Rs. 330.00 lakhs during the Fifth Plan period against 127 which have been constructed in the Fourth Plan period.

It is proposed to distribute stitched garments at the rate of Rs. 20 per student per annum for those students who reside in Hostels. With opening up of 560 Hostels during the 1973-74 the number of students to be provided with stitched garments would be in the order of 66,000 against 18,000 persons during the Fourth Plan period. A sum of Rs. 65.00 lakhs is allotted for this purpose in Fifth Plan.

The CARE supplies would be stopped from 1974-75 as per the policy of the Government of India. It is proposed to feed each year 1.30 lakhs children of the age-group of 0-6 including lactating mothers and nursing mothers with the locally available food materials. Approximately 6.50 lakhs Scheduled Caste children are proposed to be covered in the Fifth Plan against 3.24 Scheduled Caste children in the Fourth Plan. An allocation of Rs. 72.00 lakhs has been made in the Fifth Plan for this purpose.

II. Economic Uplift :

There are about a lakh of Scheduled Caste families who live on Agriculture as per 1971 Census. In order to enable them to bring their land under proper cultivation, it is proposed to give an assistance of Rs. 1,000 per each Scheduled Caste family. 1,800 Agricultural families are proposed to be covered at a cost of Rs. 18.00 lakhs under this scheme during the Fifth Plan period against Rs. 9.00 lakhs and 900 persons in the Fourth Plan.

There are 15 lakhs of Scheduled Caste Agricultural Labour as per 1971 Census. It is proposed to provide Rs. 1,000 per each family to enable them to purchase the milch animals. It is proposed to cover 1,800 such families against 900 covered in the Fourth Plan. This scheme is to cost Rs. 18.00 lakhs.

Interest Free Loans are proposed to be advanced to Scheduled Caste persons engaged in household industries and those engaged in trade and commerce. There are about 1.98 lakhs of Scheduled Caste people engaged in household industries and 0.80 lakhs in trade and commerce as per 1971 Census. It is proposed to give aid at the rate of Rs. 1,000 per each beneficiary towards the opening of petty trades. It is proposed to cover 4,000 families for which a provision of Rs. 40 lakhs has been made in the Fifth Plan. In the Fourth Plan 900 beneficiaries have been covered under this scheme.

Scheduled Caste personnel, who graduate in Law, Medicine and Cost Accountancy are not able to set up practice in their respective professions due to lack of financial assistance. This is more so in case of personnel who graduate in Law and Cost Accountancy. It is proposed to give a financial assistance of Rs. 2,500 per medical graduate and Rs. 1,500 in case of Law graduates and Cost Accountant each. A sum of Rs. 10.00 lakhs has been proposed under the Fifth Plan to give assistance to 250 Medical graduates and 150 Law graduates and 150 Cost Accountants.

With a view to mobilise more resources for economic development schemes, Government have decided to establish a Finance

Corporation for Scheduled Castes. It is proposed to allot Rs. 1 crore as share capital for setting up of this Corporation in the Fifth Plan.

The Scheduled Castes and Scheduled Tribes, Co-operative Housing Societies Federation Limited has been constructing houses since 1972 taking assistance from Life Insurance Corporation. It is proposed to contribute an amount of Rs. 150.00 to Scheduled Caste and Scheduled Tribe Co-operative Housing Societies Federation Limited to enable more number of houses to be constructed for the benefit of Scheduled Castes.

It is proposed to supply fire proof roofing material for Scheduled Caste families who reside in thatched huts which are subjected to fire accidents often. This is to supplement the efforts of the Scheduled Castes and Scheduled Tribes Housing Federation Limited which will be constructing about 1 lakh of houses by the end of Fourth Plan period. It is proposed to give assistance of Rs. 850 per house as loan and Rs. 250 as subsidy under the present scheme. An amount of Rs. 127.50 lakhs has been set apart for this purpose.

OTHER BACKWARD CLASSES :

I. Education :

Scholarships are being awarded for Backward Class students under non-plan and no provision has been made in Fourth Plan for the Same. In view of the fact the reservations for the backward Classes has come to stay after the Supreme Court judgement. It is proposed to supplement the scheme of awarding States Scholarships for Backward Classes in the plan schemes also. Under the scheme of State Scholarships for Backward Class pupils, assistance is given for the Backward Classes persons whose parents income does not exceed Rs. 3,600 per annum and for the students belonging to the economically backward classes whose parents income does not exceed Rs. 1,500 per annum. There are two kinds of Scholarships residential and non-residential. The Backward Classes Commission strongly recommended that every eligible Backward Class Student should be awarded Scholarships and observed that it is necessary to ensure that no Backward Class student is denied education for want of financial aid as in the case of Scheduled Castes or Scheduled Tribes. It is anticipated in the period 1974-1979, 1.60 lakhs of students will be sanctioned Scholarships and an amount of Rs. 300.00 lakhs will be spent on this. However, this provision was only under non-plan. As per the projected figures in the Fifth Plan period, the Backward Class students, who could be considered for awarding of Scholarships will be 20.52 lakhs and an amount of Rs. 20.11 crores will be required for this purpose. Regarding economically backward classes, the figures for the Fifth Plan period are 43.49 lakh students and the amount involved is 34.72 crores.

Certain criteria has also been evolved to allot Scholarships for the persons belonging to economically Backward Classes depending upon the percentage of marks secured by them during Fifth Plan. It is proposed to set apart Rs. 3 crores in the Fifth Plan for the awarding of Scholarships for Backward Classes and economically backward classes in addition to the provisions made under the non-plan for this purpose. 1.60 lakhs of Backward Class Students are proposed to be benefitted in the Fifth Plan out of the provision made from the plan funds.

Pre-matric stipends are being given for the students who belong to backward class and studying in Industrious Training Institutes. It is proposed to award stipends to 3,000 students during the Fifth Plan against only 2,300 stipends awarded in Fourth Plan. This is to cost Rs. 15.00 lakhs in the Fifth Plan.

Book Banks are proposed to be provided on the same analogy of Scheduled Caste Students Hostels. It is proposed to set-up Book-Banks in 50 Backward Community Students hostels at a cost of Rs. 5.00 lakhs.

Coaching facilities are proposed to be given to bright Backward Class students. On the same pattern relating to Scheduled Caste candidates for undergoing specialised training to enable them to be successful in the entrance tests conducted for medical and other professional colleges. It is proposed to train 500 candidates in the Fifth Plan period and an amount of Rs. 12.50 lakhs has been allotted for this purpose in the Fifth Plan.

There are 68 Government Hostels for Backward Class students which include 11 which were opened from the Fourth Plan provision. It is proposed to open up 15 Hostels for backward college boys during the Fifth Plan for which an allocation of Rs. 15.00 lakhs has been made.

All the Backward Class student Government Hostels are located in rented buildings. At some places in rural areas it is very difficult to secure buildings for rent. There is no provision for construction of Hostel buildings in non-plan budget. It is proposed to construct Hostel buildings for all the Hostels in a phased way. There will be 222 Government Hostels in all by the end of Fourth Plan. It is proposed to construct 111 Hostels during the Fifth Plan period at a cost of Rs. 108.50 lakhs to provide Hostel accommodation to 5,415 borders.

During the Fifth Plan period the CARE supplies would be stopped. It is proposed to feed 31,000 Backward Class children of the age group of 0.6 against 20,000 students fed in the Fourth Plan. A sum of Rs. 15.00 lakhs has been allocated for this purpose.

II. Economic Uplift :

The main occupation of backward classes is agriculture. Most of them are agricultural workers and some others own land and others owner cultivators. The Backward Classes Commission has recommended that adequate aid be given to Backward Classes engaged in agriculture and other occupations to improve their yield and earning capacity. Under this scheme an amount of Rs. 500 is to be advanced as loan and Rs. 500 as subsidy per family as in the case of Scheduled Castes. An amount of Rs. 50.00 lakhs is allocated for this purpose in the Fifth Plan to benefit 5,000 families.

It is proposed to give assistance for the purchase of milch cattle to Backward Class families on the analogy of Scheduled Castes i.e., at the rate of Rs. 1,000 per family. It is proposed to give assistance to 1,200 Backward Class families during the Fifth Plan against 600 families benefitted in the Fourth Plan period. For this purpose an amount of Rs. 12.00 lakhs has been allotted.

Interest free loans to set up petty trades like setting up Flour Mills, Saw Mills, Stone Crushing Units, Taxies, Auto Rickshaws, Workshop etc. are proposed to be given in consultation with the Nationalised Banks who may be willing to finance these Schemes on the basis of 5 times the initial amount deposited by the beneficiaries. The schemes will be viable and will stabilise the economy of the backward classes. A sum of Rs. 25.00 lakhs is set apart for this purpose in Fifth Plan.

There are a number of Backward Classes engaged in the professional trades like barbers (Mangali), Washermen (Chakali), Pottery (Kummari) etc., whose economic condition is very poor as they depend on the old and primitive instruments. If they are given some modern equipment their economic condition can be improved very much. It is proposed to give assistance at the rate of Rs. 500 per each individual, to develop his trade by means of modern equipment. An amount of Rs. 50.00 lakhs has been provided for this purpose to benefit 10,000 persons at the rate of 2,000 persons each year in the Fifth Plan period.

On the same pattern of assistance for Scheduled Caste candidates assistance will be provided to the Backward Class candidates who graduate as Lawyers, Doctors and Cost Accountants at the rate of Rs. 2.00 lakhs each year of Fifth Plan. 1,500 such persons will be benefitted.

With a view to mobilise resources for economic development the Government have decided to set up a Backward Classes Financial Corporation to give proper assistance for the general economic uplift of the backward classes. A sum of Rs. 1.00 crore has been set apart in the Fifth Plan as share capital for this purpose.

Backward Classes Commission has recommended that special steps are to be taken to settle the wandering communities and traditional beggars among Backward Classes such as Jangam, Pichakuntla, Mondivaru, Veeramusti, Balasanthu etc. It is proposed to rehabilitate the people in some suitable colonies and provide them assistance to set up petty trade or give agricultural land for cultivation, Construction of housing colonies for settling these people through the aid of Scheduled Castes and Scheduled Tribes Housing Federation Limited is also envisaged. It is proposed to earmark a sum of Rs. 15.00 lakhs for this purpose.

III: Strengthening of staff in Social Welfare Department.

It has been proposed in the Fifth Plan to strengthen the staff for administration and supervision of the Social Welfare Schemes at various levels. The financial implications are as follows:

	<i>(Rs. in lakhs.)</i>
(1) Additional staff in the Directorate	21.42
(2) Staff at Headquarters for Twin Cities of Hyderabad and Secunderabad	2.38
(3) Regional Establishment	8.00
(4) Strengthening of District Establishment	7.50
(5) Divisional Establishments	15.70
Total	<u>55.00</u>

The details of the schemes are given below :

At present the staff of the Directorate is one which has been sanctioned about a decade back and there has been many fold increase in the number of activities and the work of Department. With taking over of many Hostels and construction of Hostel Buildings it is necessary that the staff at the Directorate is strengthened.

There are good number of Government Hostels in the Headquarters i.e. in Twin Cities of Hyderabad and Secunderabad and there is need to increase the number of Hostels in the twin Cities, to meet the demands of the students from the Scheduled Castes and Backward Classes for Hostel facilities. At present the Hostels and other Social Welfare Institutions in the Twin Cities are under the control of District Social Welfare Officer at Hyderabad. In view of the increase in the activities in the mofussil area of the district it is not possible to the District Social Welfare Officer (G) to look after the work in the Twin Cities. It is therefore proposed to create a separate establishment to deal with the matter of the Twin Cities under the jurisdiction of a Deputy Director.

At present there are no regional offices to ensure effective implementation of the Social Welfare Schemes. The work of the District Social Welfare Officer is directly supervised by the Director. It is, therefore, proposed to have 3 regional officers each headed by a Deputy Director with the necessary establishment.

The District Social Welfare Officers are touring Officers for the whole district. When they are out of the Headquarters there is no responsible person to manage the office. Hence the each District Social Welfare Office is to be strengthened by sanctioning of additional staff consisting of an Office Superintendent for each of the district office.

At the divisional level corresponding to the Revenue Divisional Officer in the Revenue Department, it is proposed to create a post of Assistant Welfare Officer to help in opening up of the Government Hostels and day to day functioning of these Hostels on proper lines. They will also ensure sending of regular reports to the District Social Welfare Officer, etc.

It is proposed to construct an office building for the office of the Director of Social Welfare at a cost of Rs. 5.00 lakhs in the Fifth Plan period.

CENTRALLY SPONSORED SCHEMES :

The scholarships scheme in the plan is intended only for awarding scholarships to pre-matric Scheduled Caste students. To supplement provision for issuing of general post matric scholarship in the normal budget of the Social Welfare Department, the Central Government allots funds for this purpose. The anticipated expenditure under this scheme in the Fifth Plan is Rs. 47.65 lakhs. An amount of Rs.100.00 lakhs has been proposed in the Fifth Plan period for this purpose in view of the fillip to be given to the Scheduled Castes students.

The policy of the Government of India has been to fully finance the construction of Scheduled Castes Girls Hostels. Five Girls Hostels

have been completed during the Fourth Plan and a sum of Rs. 25.00 lakhs has been proposed for this purpose in the Fifth Plan.

Integrated Rural Development Programme has been proposed to be started during the year 1973-74 for which a sum of Rs. 350.00 lakhs has been proposed. This Integrated Rural Development Programme includes the provision of drinking water, land and water resources scheme, additional economic assistance etc. A sum of Rs. 1,210 lakhs is provided in Fifth Plan. The total amount proposed thus works out to Rs. 13.35 crores under the Central Sectors schemes.

MINIMUM NEEDS PROGRAMME :

The objective of the Minimum Needs Programme is the provision of minimum levels of social consumption which satisfied the essential minimum needs of the poorer and weaker sections of population, and for this purpose, certain norms have been fixed which would have to be reached in the sectors included in the programme. Since a vast majority of the Scheduled Castes belong to the lowest per capital income groups and since the levels, of social consumption reached by them are, in most cases, the lowest, in regard to the attainment of these norms they would be the ones that would benefit most. Thus, for instance, the Scheduled Castes will be the largest beneficiaries under the various incentives, such as book grants, free-uniforms, attendance scholarships and mid-day meals mentioned in the programme for expansion of elementary education. Similarly, the supplemental feeding programmes for pre-school children and expectant and nursing mothers under the Nutrition programme will also benefit largely the Scheduled Castes. Since a large part of the landless labourers in the State belong to Scheduled Castes, the programme of house-sites for landless labourers will also benefit this section of the population most. Similarly, the environmental improvement programme in the slum areas in Hyderabad, Visakhapatnam and Vijayawada will benefit the Scheduled Castes most, as they generally live in slum areas because of poverty. Since the location specific exercises for to the Minimum Needs Programme have yet to be completed, the actual allocation that would be available for Scheduled Castes cannot, however, at this stage, be pointed out. The allocations in this sector i.e., welfare to Scheduled Castes as such would be supplemental and are intended for such items as are proposed to be taken up in addition to the Minimum Needs Programme or in support thereof.

31. WELFARE OF SCHEDULED TRIBES.

In the National approach removal of poverty is the main task which has been set out to be accomplished in the Fifth Five-Year Plan. All programmes which are being designed to achieve this objective have to be necessarily so oriented that certain classes of people and regions which have been lagging behind derive maximum benefits. In pursuance of this policy, development effort will have to be specially directed towards the welfare of Scheduled Tribes, Denotified Tribes, Nomadic Tribes and Semi-Nomadic Tribes and the tribal areas. "In the Fifth Plan, the strategy of development of Backward classes places greater emphasis on the role of general sector in providing major developmental programmes. The public consumption programmes, specially in regard to minimum needs will involve eligibility conditions which will give high priority to Scheduled Castes, Scheduled Tribes and Nomadic Tribes. Programmes of general sector which include Agriculture, Land Reforms, Village and Small Industries, Training Programmes for Employment in semi-skilled Professions and Communications will accord high priority to development of backward classes. Education, Economic Development and Social Legislation programmes will be directed towards improvement in the quality of life of these communities, enabling them over a period of time to reach reasonable levels of development"*

An exercise in integrated area planning for tribal areas as well as for small pockets of tribal concentration has to be undertaken in this regard. The need to ensure that the more backward among the various tribal groups derive optimum benefit from economic development and minimum needs programme has been recognised, and for this purpose identification of the relatively backward tribal groups has to be made.

The approach of the State has to be within the frame work of the National Approach, but appropriately designed to suit the special circumstances of the State. For appreciating the tribal problem, distinction has to be made between the agency areas, smaller but contiguous pockets of tribal concentrations and dispersed tribal groups apart from denotified tribes. The spatial setting and economic base differ for each of these categories, and consequently the policies and programmes have to vary. In the more backward tribal areas it is possible to distinguish between agriculturists, pastorals and food gatherers. The agriculturists may be indulging in settled or shifting cultivation or a combination of the two types. Further in almost all the areas, there is a distinct class of agricultural labour. The problem of tribal development has to be understood this socio-economic setting on the one hand and the identified resource base and the tribal groups with

* Approach Paper on Fifth Five-Year Plan.

their peculiar ethnic groupings and varying social responses on the other. The approach of the State would therefore consist of :

- (a) Appreciation of the Socio-Economic and ethnic setting ;
- (b) Identification of the resource base in its spatial setting ;
- (c) Programmes for immediate economic uplift including training in avocations involving semi-skilled tasks ;
- (d) Provision of economic infrastructure such as roads, coupled with measures of social infrastructure having long term significance such as education and health.

With this approach schemes have been designed in the Tribal Welfare sector and are described here. Programmes that would benefit tribals are being identified in the general sectors fore also and the finances these programmes from Centre and other institutions are proposed to be dovetailed into this plan of action.

REVIEW :

The total expenditure during 1951-1969 on tribal development was Rs. 621.51 lakhs. In the Third Plan period, 24 Tribal Development Blocks were also started in addition to the 4 Multipurpose Projects. An amount of Rs. 179.71 lakhs during Third Plan and Rs. 73.80 lakhs during the subsequent Annual Plans was spent for implementing various tribal welfare programmes covering Agriculture, Minor Irrigation, Soil Conservation, Communications and other economic uplift schemes. In the Third Plan, an amount of Rs. 87.48 lakhs was spent on communications alone and in the subsequent Annual Plans, the tempo was maintained by incurring an expenditure of Rs. 34.49 lakhs, which indicates the emphasis laid on creating this important infrastructure facility.

Upto the beginning of the Fourth Five-Year Plan major programmes for development of Scheduled Tribes have been in the Central sector. In the Fourth Plan period however the contribution of State sector was double that of the Central Sector. An amount of Rs. 515.03 lakhs has been allocated for the Fourth Five-Year Plan from the State sector while the allocation from the Central sector was only Rs. 219.00 lakhs. The programme-wise allocations and expenditure [including the anticipated expenditure in 1973-74] in Fourth Five-Year Plan at a glance are as follows :

<i>Scheme</i>	<i>Allocations</i>	<i>(Rs. in lakhs). Expenditure</i>
I. State Sector :		
A. Education	145.47	163.606
B. Economic Uplift ..	296.77	275.739
C. Health & Other Schemes	72.79	66.057
Total ..	515.03	505.402

<i>Scheme</i>	<i>Allocations</i>	<i>Expenditure (Rs. in lakhs).</i>
II. Centrally Sponsored Schemes (Scheduled Tribes & Denotified Tribes) :		
A. Education	43.88	50.877
B. Economic Uplift and other schemes ..	175.12	200.011
Total ..	219.00	250.888

While the per capita expenditure spread over a period of 18 years (1951-69) was Rs. 47, the per capita expenditure in the Fourth Five-Year Plan alone is Rs. 45 which is indicative of the increasing attention paid to welfare of Scheduled Tribes.

The important achievements under various programmes upto the beginning of Fourth Five-Year Plan period and the achievements during the Fourth Five-Year Plan are described below :

Impressive advances were made in the field of education. In the period, 1951-69, 1,17,540 students were supplied with books, slates and clothing and in the Fourth Plan, the total number of beneficiaries under the scheme will be 33,263. By the end of Fourth Five-Year Plan 1,50,803 tribal students would have been benefited by this scheme. Upto the end of 1968-69, 16,000 students were awarded scholarships and in the Fourth Plan, about 4,000 students will be awarded scholarships, bringing the total number of beneficiaries to 20,000. At the beginning of the Fourth Plan, there were 357 hostels for tribals, in the Fourth Plan period 97 new hostels have been opened bringing their number to 481 with about 16,750 boarders. There were 69 Ashram Schools at the beginning of the Fourth Five-Year Plan and now there are 189 Ashram Schools with a strength of 10,150 students.

Certain new schemes were introduced in the Fourth Plan period. During the first four years 118 Tribals were trained as Village Officers and about 400 tribals will be trained in the last year of the Fourth Plan, if the proposals to create 400 posts of Village Officers in the tribal areas materialise. Under the programme of training tribals as masons, 312 persons were trained. Apprenticeship training was imparted to 50 tribals in various public sector undertakings. Sixty tribals were trained as Motor Drivers. 33 tribal Graduates and Post-graduates were given unemployment allowance. A scheme for promoting cultural talents among the tribal children was introduced in 1972-73 by opening 2 centres where 193 tribal children were trained. Scouting programme was introduced in the tribal welfare educational institutions with 150 units. 81 Ashram Schools and 77 Hostel buildings were taken up, of which 66 were completed.

Economic uplift is yet another field in which significant effort has been made. Upto the end of 1968-69, 1,684 pairs of plough bullocks were distributed and in the Fourth Plan period 3,847 cultivators were supplied with plough bullocks. 312 Minor Irrigation sources were taken up benefitting an area of about 8,000 acres. Five Land Colonisation Schemes were taken up. 525.84 Sq. Km. of land in scheduled areas was surveyed and settled. 718 tribals were given financial assistance to set up trades. 52 villages were electrified, bringing the total number of electrified villages to 108 in scheduled areas. 13,320 acres were benefitted by improved agricultural practices. 1,445 improved agricultural implements were supplied. Short term loans were given to 19,974 tribal agriculturists. 50 Godowns were taken up for the Girijan Co-operative Corporation with the assistance provided by N. C. D. C., New Delhi. 28 Veterinary dispensaries were opened bringing their total number to 46 in tribal areas. 18 Roads with a length of 139 Km. at an estimated cost of Rs. 150 lakhs were taken up in the scheduled areas. These works are in progress.

In regard to Housing, and Health, upto the beginning of the Fourth Five-Year Plan 1,242 persons were given assistance at Rs. 500 each to construct houses. In the Fourth Five-Year Plan, 1,002 tribals benefitted by this scheme. 350 Drinking Water Wells were taken up for construction and there will be still 2,177 tribal villages to be provided with drinking water facilities. Three 10 bedded hospitals were opened during the Fourth Plan period bringing their number to 15 in the scheduled areas. There are 19 dispensaries as against 15 at the beginning of the Fourth Plan Six Mobile Medical Units were added to the existing 14.

Under Central Schemes, Post-Matric Scholarships were awarded to 1,682 students, of whom 176 students belong to professional courses. 38 Hostel buildings were taken up for construction. One pre-Examination Training Centre was established. Assistance was continued to 24 Tribal Development Blocks on the pattern prescribed by the Government of India. Financial assistance was provided to the Girijan Co-operative Corporation for expansion of its activities. The Denotified Tribes Programme provided for opening of 15 hostels and construction of six buildings. 59 Drinking Water Wells were sunk and 1,111 persons benefitted by the supply of plough bullocks and milch animals. Besides the above scheme, special mention may be made of the Special Nutrition Programme launched in the year 1970-71 to improve the health standards of pre-school children below 8 years. In 1971-72, this programme was extended to cover all pre-school children upto 6 years age and expectant and nursing mothers. At the end of the Fourth Five-Year Plan, there will be 2,06,293 beneficiaries under this Programme.

The Girijan Co-operative Corporation which has been set up to eliminate the exploiting middlemen from operating in the scheduled areas, operates in 16 out of 21 districts of the State. It has a three-fold objective of purchasing from the tribals the minor forest produce and agricultural produce at reasonable prices ; of selling to them their daily domestic requirements at fair prices and providing institutional agro-credit facilities to the tribals in seven districts where the normal

agency, *i. e.*, Co-operative structure, is weak. It has 30 Primary Co-operative Societies affiliated to it with a net work of 311 Daily Requirement Depots. The Corporation enjoys monopoly rights over the purchase of minor forest produce in Scheduled area and it completes with the middle men in the purchase of agricultural produce. Backed by a Government guarantee, the Corporation has been given a credit accommodation of Rs. 40.00 lakhs by Reserve Bank of India. It has been recognised as an Apex Co-operative Institution for the purpose of extending Agro-credit to tribals. The total turn-over of the Corporation has registered a gradual increase in the past few years and it is likely to reach the Rs. 3 crore target by the end of Fourth Plan.

Andhra Pradesh Scheduled Castes and Scheduled Tribes Co-operative Housing Societies Federation has been established with a view to provide houses at an annual cost of Rs. 10.00 crores. Assistance for this programme has been taken from L. I. C. of India in the shape of loan. So far, 55,546 houses were taken up and 39,161 houses were completed, out of which 5,946 were taken up for tribals, and about 4,200 were completed.

In the year 1971-72, a Pilot Project for Tribal Development (Girijan Development Agency) was launched in Srikakulam district. This project has an outlay of Rs. 1.50 crores for the development of Agriculture and allied infrastructural facilities. 20,011 participants have been identified who are mostly small and marginal tribal cultivators. An amount of Rs. 32.11 lakhs has been spent since the inception of the Project. The Project envisages assistance to both cultivators and the landless and comprises of schemes like Agriculture, Minor Irrigation, Animal Husbandry, Marketing, Agro and Forest based industries and debt redumption.

Evaluation :

Since the problems of development posed in the tribal sector are particularly complex special studies of ongoing schemes were conducted to throw up results with policy and operational significance. Some of the important studies are described as a background for the plan for tribal development.

A study was conducted on the problem of wastage and stagnation in elementary schools of tribal areas by a sample of 6 residential and 14 non-residential schools. It revealed the following percentage of wastage and stagnation index.

	<i>Wastage</i>	<i>Stagnation (Index)</i>
(1) Residential	.. 57.92%	32.85
(2) Non-Residential	.. 73.00%	45.75

Hence more and more Ashram Schools are being opened, with the ultimate objective of converting all schools into Ashram Schools.

A comparative study of the functioning of Government and Aided hostels was taken up. The study revealed that a majority of the subsidised hostels are mis-managed. This was corroborated by the findings of the sub-committee of the Legislature which recommended opening of Government Hostels in lieu of subsidised hostels. This has since been implemented.

The Girijan Co-operative Corporation and its pricing policy in particular was studied in depth. It was found that while generally the Corporation is serving the purpose for which it has been established, but for the minor forest produce sold by them, a fair price was not being paid. This has been overcome by adopting a revised formula for computing the market price.

A study of the Animal Husbandry Programme has revealed that although the tribals have availed of the dispensary facilities provided, they have not been in a position to manage the breeding bulls supplied to them. It is observed that of the 260 bulls supplied, only 140 have given the required service. In the Fifth Plan, therefore, the scheme will be implemented with suitable modifications.

TOTAL DIMENSIONS §

The total population of scheduled tribes in Andhra Pradesh is 16.57 lakhs as per 1971 Census constituting 3.81% to the population of the State. The scheduled area extends over 30,031 sq. K. Ms. with 4,346 villages distributed in Srikakulam, Visakhapatnam, East Godavari, West Godavari, Khammam, Warangal, Adilabad and Mahaboobnagar districts. There is no Scheduled area in other districts. Of the 16.57 lakh tribals, 11.08 lakhs are in the districts mentioned above concentrated either in the Scheduled area or in pockets outside the Scheduled area. The remaining population of 5.54 lakhs is distributed in the remaining districts.

There are 33 Scheduled Tribes in the State. Among them Gonds, Kolams, Thoties, Pradhans, Naikpods, Hill Reddis and Andhs are confined to the Telangana region only. Chenchus and Koyas, are found in both the regions. The remaining tribes are exclusively found in the Andhra region. Sugalis are recognised as Scheduled Tribes in the Andhra area and not in Telangana, but they are found living in this region also. Yerukulas, Yenadis and Sugalis are mostly found living in the districts where there is no Scheduled area.

For the purpose of drawing up schemes for an integrated development of the tribals in Andhra Pradesh, they can be broadly categorised as those living in the tribal areas, *viz.*, in the districts having Scheduled area and in pockets of Scheduled Tribe population in these districts and they living in plains areas. In both these regions, there are tribal cultivators and landless labourers. The following table shows the distribution of tribal cultivators and landless labourers in the two regions.

ESTIMATED NO. OF FAMILIES				
		<i>No. of Cultivator families.</i>	<i>No. of landless labourers.</i>	<i>Total.</i>
		(1)	(2)	(3)
<i>I. Tribal Areas :</i>				
(A) Andhra	..	50,527	86,101	1,36,628
(B) Telangana	..	33,265	50,706	83,971
		83,792	1,36,807	2,20,599
<i>II. Plains Areas :</i>				
(A) Andhra	..	10,508	93,951	1,04,459
(B) Telangana	..	819	3,645	4,464
		11,327	97,596	1,08,923
GRAND TOTAL	..	95,119	2,34,403	3,29,522

The average size of holding in tribal areas is 5 acres and outside the tribal areas, it is 3 acres. The land held by tribal cultivators in the tribal areas is estimated to be 4.19 lakh acres, whereas in the plains areas, it is only 0.34 lakh acres. 95,119 tribal cultivator families depend on land and 2,34,403 tribal families make out their livelihood as Agricultural labourers, and by engaging themselves in other allied wage-based occupations.

Even amongst the cultivators and landless labourers levels of development vastly vary between one tribe and the other, due to certain inherent differences in the levels of development and other factors. Massive integrated development programmes have neither reduced the gap between the tribals and the non-tribals nor have achieved uniform development of the various tribal groups. This situation calls for a deliberate effort to bridge the growing gaps between the tribals and non-tribals on one hand and various tribal groups on the other. The uneven distribution of benefits, is the result of a 'Communication Gap' and differential receptivity of various tribes towards development programmes which are, in turn, products of certain inherent traits in socio-economic structure. Only versatile, vocal and assertive tribal groups have derived maximum benefits of every development scheme, on account of which it has become necessary to identify the relatively backward tribes, and take special steps for their uplift.

Transformation of tribal society for acquiring skills and knowledge, so that tribals and the areas they inhabit could catch up as far as possible with their relatively advanced ones in the plains is an enormous task. It is not merely a problem of establishing more institutions or introducing new schemes but is one of imparting skills to provide the motivating force and stimulating the tribal to learn and equip himself for the purpose of increasing production and of imparting the requisite skills for this purpose. The tribals and the tribal areas lag behind the general population and the plains areas in every respect. The tribal will have to be prepared to take a giant leap and the official machinery will have to be prepared for a herculean task if some ground has to be gained in the field of education economic development, etc. The task ahead is briefly discussed below sector-wise.

Literacy amongst the Scheduled Tribes is alarmingly low. According to 1961 Census, the percentage of literacy among the scheduled tribes was only 4.41. The enrolment of tribal children in primary, secondary and post-matric stage as compared to the total enrolment is as follows (1967-68) :

<i>Stage</i>	<i>Total enrolment</i>	<i>Scheduled Tribes enrolment</i>	<i>Percentage of Scheduled Tribes enrolment to the total</i>
(1)	(2)	(3)	(4)
Primary stage (I to VII)	44,06,403	94,396	2.14
Secondary Stage (VII to XII)	5,48,361	3,076	0.56
Post-matric stage	79,079	287	0.36

The above position has not perceptibly improved even today inspite of providing increasingly, incentives like scholarships, boarding facilities, freebooks, etc., on an increasing scale. The magnitude of the problem to be tackled is therefore enormous if by the end of Fifth Plan 100% enrolment is to be ensured in the age group 6-11 and 60% in the age group 11-13.

By the end of Fourth Five-Year Plan, there will be about 27,000 tribal students in the Ashram schools and hostels constituting about 20% of the total school going children. This facility is being utilised by tribal children whole-heartedly as is evident from the fact that there are hardly any hostel seats vacant. Hence there is ample scope to expand this facility even if necessary by providing double the number of existing seats. This will be besides the other incentives such as scholarships, free supply of text books, dresses etc.

Directly or indirectly the tribal derives his livelihood mainly from agriculture. The tribal is a primary producer at a low level of production as a number of adverse factors operate on his economic environment. Small agricultural holdings, low fertility, paucity of agricultural implements, lack of quality inputs such as seeds, fertilisers and in some cases even drought cattle have held the tribal in vice like grip at the present ridiculously low level of consumption and production standards. The problem to be tackled can be best stated by comparing the percentage of area irrigated in the plains and Scheduled areas which is 31 and 6.21, percentage of villages electrified which is 21.92 and 1.3; average yield per acre which is 507 kgs. and 100 kgs. respectively. The problem of improving the lot of those who do not have land and who are under employed is much more difficult.

The existing medical and health facilities are very inadequate in the tribal areas. The difficult terrain and the apathy of the tribal necessitate the establishment of number of institutions so as to be within the easy reach of the tribal. In spite of the addition of 3 ten-bedded hospitals, the number of beds per lakh of population still continues to be at 14 only. If it is presumed that the situation in plains areas also has not changed much, there will still be a gap of 42 beds per lakh of population. 2,177 tribal villages still require to be provided with drinking water wells. The problem of housing and house sites is acute in the plains areas, where certain sections of tribal population live. It is estimated that about 4,000 acres of land will be required for providing house sites to 85,000 households at 5 cents per household in plains areas.

The population of Denotified Tribes, Nomadic Tribes, and Semi-nomadic Tribes has not been enumerated in the decennial Census. There are 67 Denotified Tribes communities, 60 Nomadic Tribes and Semi-nomadic Tribe groups. On the basis of 1941 Census, the Denotified Tribe population was 6 lakhs in the Madras Presidency and about 4 lakhs in the Hyderabad State. Consequent on the formation of Andhra Pradesh, the Denotified Tribe population may be reduced by half. Presuming that the Denotified Tribe population in the areas which now form part of Andhra Pradesh was 5 lakhs in 1941 and taking the decennial increase of 15% of the total population of Denotified Tribes is estimated to be about 7.60 lakhs. In addition to Denotified Tribes, the 60 Nomadic Communities distributed through out the State number about 5 lakhs.

The Denotified Tribes are a diverse group of communities with different traditional callings, varied ethnic groups and variegated economic and social status. While the Kintali Kalingas are now a settled plains agricultural class inhabiting various taluks of Srikakulam district, the Yerra Gollas or the Telugu Pamulas are the nomadic snake charmers eking out a precarious livelihood by displaying the snakes in the country side.

There is another group of nomadic communities earning their livelihood by roaming about in the villages and pursuing their traditional occupations which vary from ballad singing to snake charming

or tatooning. The Nomadic groups can broadly be classified into (1) Bards and Ministerals, (2) Entertainers, (3) Religious Mendicants, (4) Peddlars. The Nomadic groups have been living as a satellite community serving their patrons in the villages. But with the introduction of various technological innovations and modern education, etc., the traditional roaming communities have been deprived of their traditional patronage for their traditional arts and crafts. This situation has thrown these groups into socio-economic maladjustment and most of them are struggling hard to earn livelihood by taking to certain subsidiary occupations. Their living conditions are miserable.

Very little has been done so far to ameliorate their conditions. It is therefore a problem of providing suitable employment avenues, so that they can adjust themselves to the new situation. It is really a gigantic task to bring about transformation of these traditional nomadic groups, hitherto neglected. Any programme launched for their development, will only mark the beginning of an era of development for these communities.

OBJECTIVES :

Removal of constraints that have been operating upon both the individual tribal and his environment will be the main objective, as it is the main cause for the perceptible difference in levels of development of the tribal and general population. This is proposed to be accomplished by :

- (1) Implementing a Package Programme for the economic uplift of the tribals, resulting in higher levels of incomes and consumption soon ;
- (2) Providing educational and training facilities on a larger scale creating a base for general uplift ;
- (3) Providing public consumption avenues through social services ; and
- (4) Implementing schemes aimed at rehabilitation of Nomadic and Semi-Nomadic tribal groups.

STRATEGY :

It is proposed to ensure that the general sectors of development described in the plan devote the much-needed attention to these areas by identifying the programme content through location-specific exercises particularly in the context of district planning. In this chapter, a detailed description of tribal welfare programmes as a supplemental effort in the State Plan is undertaken. In addition, the schemes relevant for tribals under Minimum Needs Programme are identified and an indication of the central sector schemes expected is however, made.

Under education, apart from the Minimum Needs Programme certain incentives and training programmes are essential in view of the special needs of the tribals. This programme will be implemented through out the State in such a manner that all Scheduled Tribes, Denotified Tribes, Nomadic Tribes and Semi-Nomadic Tribes derive maximum benefits.

For the purpose of implementing economic development schemes, however, the backward regions and the backward tribes have been identified. These programmes comprise of schemes to provide Short Term and Medium Term inputs and improvement of land of individual cultivators. Provision has been made for increasing irrigation facilities and expanding the Animal Husbandry activities. For the landless persons, schemes like trade assistance, cottage industries, training in skilled and semi-skilled professions have been envisaged. In order to provide as wide a coverage as possible, it is imperative that this programme is linked with the loaning programme of the co-operatives and commercial banks. As the success of this programme will mainly depend upon timely flow of credit, provision has been made for share capital contribution of the tribals.

Priority under the Agricultural Programme especially in respect of Medium Term inputs, improvement of land, etc., will be given to minor or backward tribal groups. Those who have been assigned land newly will be given second priority. Such of these tribal cultivators whose lands have been restored under the Land Transfer Regulation belonging to both backward and relatively advanced tribal group will be covered, as this is necessary to make the protective legislations work more effectively. Under the other programmes, first preference will be given to those who possess no land at all and to those who are drop outs from schools and colleges and such of those families whose holdings are uneconomical. Under each scheme, suitable subsidies have been provided keeping in view the magnitude of the investment required.

PROGRAMME DETAILS :

The outlay in State Plan for tribal areas consists of :

- (a) the allocation of these areas in plans for general sectors.
- (b) the allocation under Tribal Welfare, and
- (c) the allocations under Minimum Needs Programme.

The outlays under items (b) and (c) are summarised as follows :

(Rs. in lakhs.)

<i>Scheme</i>	<i>Fourth Plan expenditure (anticipated)</i>	<i>Fifth Plan outlay</i>
(1)	(2)	(3)
<i>Tribal Welfare :</i>		
(a) Education	163.606	435.15
(b) Economic uplift	275.789	880.14
(c) Housing, Health, etc.	66.057	..
(d) Administration .. ..	..	75.47
Total	505.402	1,390.75

(Rs. in lakhs.)

<i>Scheme</i>	<i>Fourth Plan expenditure (anticipated)</i>	<i>Fifth Plan outlay</i>
(1)	(2)	(3)
<i>Minimum Needs Programme— Tribal Programmes.</i>		
(a) Elementary Education	*
(b) Electricity	500.00
(c) Roads	1,000.00
(d) Public Health	}	*
(e) Nutrition		
(f) Drinking Water Supply		

*The exact share for Tribals has not yet been determined.

According to indications available an amount of Rs. 121.39 lakhs would be required by Chief Engineer (Roads & Buildings) for completion of road works taken up in agency areas of Coastal Andhra which are being provided in the Transport plan.

EDUCATION :

There is provision for elementary education under Minimum Needs Programme but it provides for award of scholarships, opening of hostels, Ashram Schools, training of tribals, scouting programme, scheme for promoting cultural talents and construction of Ashram Schools and hostel buildings, hence these schemes have been included in the Tribal Welfare Plan. Provision has been made for free Supply of Nationalised text books, clothing etc., to cover such of those tribal students who may not get these items from the Minimum Needs Programme.

Statement.

The schemes and their financial allocations for education under State Plan can be presented in the form of a table.

(Rs. in lakhs)

Sl. No.	Scheme	<i>Anticipated expenditure during Fourth Plan.</i>	<i>Fifth Plan Outlay</i>
(1)	(2)	(3)	(4)
<i>Education :</i>			
1.	Supply of Books, slates and clothing..	4.562	Separate schemes suggested
2.	Award of Scholarships	5.692	8.40
3.	Hostels for tribals	51.869	108.64
4.	Ashram Schools	63.653	145.86
5.	Free supply of nationalised text-books	6.950	Separate scheme suggested.
6.	Training of tribals as Village Officers		
7.	Training of tribals as Masons		
8.	Training of tribals as Apprentices in public and private sector undertakings.	2.898	8.00
9.	Training of tribals as Motor Drivers		
10.	Assistance to unemployed tribal youth		
11.	Scheme for promoting cultural talents	1.400	1.25
12.	Construction of hostel buildings	16.080	50.00
13.	Construction of Ashram School buildings	2.470	50.00
14.	Scouting facilities	8.547	10.00
15.	Supply of education material .. ..	..	58.50
	Total ..	163.606	435.15

In the Fifth Plan, under award of scholarships 22,700 residential and non-residential scholarships are proposed.

By the end of Fourth Five-Year Plan, the number of new hostels opened will be 97 in addition to the 357 existing, with a strength of 16,750. In the Fifth Plan, opening of 50 hostels is proposed with a strength of 5,000 boarders. By the end of Fifth Plan, 21,750 students will be covered by hostels representing 16.6% of the total school going children.

There are 187 Ashram Schools with a strength of 10,150 students, which include 118 Ashram Schools established in the Fourth Five-Year Plan period. In the Fifth Plan, it is proposed to open 75 Ashram Schools at a cost of Rs. 145.36 lakhs, benefitting 7,500 students. By the end of Fifth Plan, 17,650 students will be provided with Ashram School facilities constituting 13.4% to the total school going children.

The scheme of Training Programmes and Employment assistance envisages training of tribals as Village Officers, Masons, Apprentices in Private and Public Sector undertakings and as Motor Drivers. So far, 118 tribals have been trained as Village Officers. 312 tribals were trained as Masons. 50 tribals underwent Apprenticeship training. 60 tribal Boys were trained as Drivers and 33 Graduates and Post-graduates were sanctioned unemployment allowance. It is proposed to continue these programmes during Fifth Five-Year Plan for which an amount of Rs. 8.00 lakhs has been allotted. The duration of Village Officers Training as approved by the Government is 3 months. In the Fifth Plan it is proposed to train 250 tribal Boys and employ as Village Officers, mostly in the Scheduled Areas. Under the training programme for Masons, it is the practice to employ trainees as apprentices under experienced Masons for a period of one month and supply implements also, so that the trained candidate can continue to eke out his livelihood in the profession. It is proposed to train 1000 tribals as Masons during Fifth Plan period. Six hundred boys are proposed to be trained as Motor Drivers. The duration of this training will be 3 months. During the period of training, each trainee will be paid R . 50/- per month towards Boarding and Lodging. For training of tribal boys for specific jobs in private and public sector undertakings, a stipend of Rs. 150/- will be paid per month. It is proposed to provide stipend to 500 tribal boys in Fifth Plan. Under unemployment relief, only a lumpsum provision has been made as it is not possible to forecast the number of beneficiaries under this scheme.

In the Fourth Five Year Plan, two units were set up to promote cultural talents among tribal children through the National Council of Child Arts Clubs. In the Fifth Plan, it is proposed to set up 5 of 3 months duration each at a cost of Rs. 1.25 lakhs.

Out of 481 hostels, only 81 were provided with buildings. In some of the buildings, certain facilities like bath, kitchen etc., are to be provided and accommodation is insufficient in some of the buildings. Therefore, it is proposed to take up construction programme by giving first priority to provision of facilities in the existing buildings and expansion of accommodation. Rs. 13 lakhs will be spent for this purpose and

the balance of Rs. 37 lakhs will be utilised for construction of buildings for 37 hostels at Rs. 1.00 lakh per hostel.

Out of 187 Ashram Schools, only 81 have buildings. It is proposed to construct 50 Ashram School buildings at a cost of Rs. 50 lakhs during Fifth Plan.

Under a scheme for supply of education material, it is proposed to provide a set consisting of books, slates, and two dresses each to the school going children. For the tribal students in the hostels and Ashram Schools, provision has been made in the respective schemes for the supply of dresses. Therefore this scheme envisages supply of only slates, note books, pencils, etc., and nationalised text books to boarders of hostels and Ashram Schools and a full set to all others.

The Scouting programme introduced in the tribal welfare educational Institutions, is proposed to be continued in the Fifth Plan. There are 150 units at present. In the Fifth Plan, besides continuing these units, 50 more units will be newly started. An amount of Rs. 10. lakhs has been earmarked for re-equipping the old units and registration and supply of equipment etc., to the new units.

Economic Uplift :

A Package Programme for economic development has been proposed mainly with a view to provide necessary assistance in a systematic manner to the tribal cultivators and the landless. The programme envisages assistance to substantial number of cultivators and landless in tribal areas and non-tribal areas. A special feature of this programme is that the financial assistance received by each tribal family will go to generate credit. Government in their Order No. 586 (Rev.) dated 1-6-1972 have given a guarantee for the long term loans to be advanced by the Land Mortgage Banks in the Scheduled areas. This facility is not being availed by the tribals at present. Now sufficient amount is being provided as subsidy towards share capital contribution and separate subsidy is being provided under each scheme which will in effect enable the tribal to borrow sufficient credit without bearing the burden of interest.

The Package Programme comprises of schemes like land development, supply of short term and medium term inputs, electric motors and oil engines, promotion of horticulture, Plant protection and soil conservation under Agriculture, under Animal Husbandry, schemes like supply of breeding bulls, fodder and pasture development, strengthening of the livestock farm at Chintapally, supply of milch animals etc., are proposed. Other schemes such as cottage industries, trade assistance have also been included in the Package Programme.

For the purpose of implementing the economic development programme, the tribals have been categorised as Cultivators and Landless and again as those living in tribal areas and the plains areas. According to the estimated figures, there are 83,792 cultivators and 1,36,807 Landless households in the tribal areas and there are 11,327 cultivators and 97,596 landless households in the plains areas. The total estimated land held by tribal cultivator households worked out to 4.52

lakh acres of which 4.19 lakh acres is in the tribal area and the remaining in the plains. This programme envisages separate schemes for (1) cultivators in tribal areas, (2) landless in tribal areas, (3) cultivators in plains areas and (4) landless in plains areas. Further assistance to Girijan Co-operative Corporation which operates in all areas is proposed.

The allocations are as follows :—

(Rs. in lakhs.)

Scheme	Fifth Plan outlay
I. Scheme for cultivators in tribal areas	586.87
II. Scheme for landless in tribal areas ..	175.92
III. Scheme for tribal cultivators in plains ..	37.01
IV. Scheme for landless Tribals in plains ..	31.00
V. Girijan Co-operative Corporation. ..	50.00

Details of the schemes relating to cultivators and landless Scheduled Tribes in tribal areas and plains and subsidy for share capital contribution to Girijan Co-operative Corporation are given below :

I. Schemes for cultivators in tribal areas :

The details of the Schemes are as follows :

(Rs. in lakhs.)

Sl. No.	Scheme.	Fifth Plan outlay.
1.	Agriculture :	
	(a) Land Reclamation.	31.42
	(b) Tractor Ploughing	8.38
	(c) Short Term Inputs	62.84
	(d) Medium Term Inputs :	
	(i) Plough Bullocks.	33.52
	(ii) Agricultural Implements.	41.90
	(iii) Electric Motors.. ..	28.13
	(e) Coffee Plantation	200.00
	(f) Horticulture.	4.19
	(g) Plant Protection Measures.	6.28
	(h) Soil Conservation.	31.42
	(i) Minor Irrigation	83.79
2.	Subsidy for Share Capital contribution of Tribals to Cooperative Banks.	30.00
3.	Animal Husbandry	25.00
	Total	586.87

(a) Land Reclamation scheme will benefit 20,948 acres i.e., 5% of the total area, held by 4,192 tribal cultivators. An amount of Rs. 62.84 lakhs will be required to undertake reclamation of land to make it fit for cultivation and convert dry lands into wet under the new irrigation schemes @ Rs. 300 per acre. As this is a costly scheme it is necessary to provide 50% of the cost of the scheme as subsidy. The balance will be in the shape of a long term loan from the Land Mortgage Banks.

(b) There is sufficient scope to bring a new area under plough in the tribal areas. In order to make it fit for cultivation, tractor ploughing is proposed to be taken up on an area of 41,896 acres constituting 10% of the land held by tribals, at a cost Rs. 16.76 lakhs @ Rs. 40—per acre. 50% of the cost of the scheme is provided in the form of subsidy.

(c) The important basic inputs for improving agriculture in tribal areas are pure seed and fertilisers. It is proposed to supply short term inputs to cover 30% of the total area (1,25,688 acres) at a cost of Rs. 1,25.68 lakhs. Half of the outlay on this scheme will be subsidy and the other half will be loan from the Co-operative and Commercial Banks.

(d) It is estimated that 10% of the cultivators are in need of medium term inputs such as plough bullocks and improved agricultural implements. The total outlay for supply of plough bullocks is Rs. 67.03 lakhs of which 50% will be subsidy and the remaining will be loan from the Cooperative and Commercial Banks. It is also proposed to supply improved agricultural implements to 41,896 cultivators at a cost of Rs. 83.79 lakhs on 50% subsidy. As electrification of tribal villages is being taken up it will be necessary to provide loans for electric motors so as to enable the tribal to make profitable use of the electricity. It is proposed to supply 4,500 electric motors at a cost of Rs. 112.50 lakhs 25% of which will be in the form of subsidy.

(e) About 3,000 tribals in the tribal areas own Coffee plantations which are 50 years old mainly as back yard cultivation. In about 10,000 acres remnants of old Coffee plantation were seen. The Coffee Board has extended its area of operation to Andhra Pradesh and also established Research Station at Paderu. At present, the Coffee Board has taken up a scheme wholly financed by the Government at a cost of Rs. 1.5 lakhs for the benefit of 100 tribal families each owning 2 acres. 35 acres have already been replanted. In the Fifth Five-Year Plan, an amount of Rs. 2 crores is proposed to be spent on the scheme, benefiting 3,000 tribal families with 10,000 acres.

(f) There is scope for popularising fruit and vegetable cultivation among the tribals and tribal areas. This programme is proposed to be taken up on farms or homesteads of the tribals. Vegetables and fruits like loose jacket orange, pine apple, tomatoes, cauliflower, papaya etc., can be popularised. The aim is to encourage consumption of vegetables and fruits and provide subsidiary source of income if there is any surplus production. It is proposed to cover 23,792 tribal

households at a cost of Rs. 4.19 lakhs by way of supplying free seeds and seedlings.

(g) As improved seeds and fertilisers are proposed to be supplied, it is essential to supply plant protection equipment and pesticides. An area of about 1.25 lakh acres is proposed to be covered at a cost of Rs. 12.57 lakhs of which 50% will be in the shape of subsidy.

(h) In view of the undulating terrain vast tracts of land under cultivation in tribal areas require protection from soil erosion. There are numerous gully formations which require treatment by check dams, and vegetative protection of their banks. On steeper slopes bench terracing is necessary. It is estimated that Rs. 62.84 lakhs will be required to benefit 20,948 acres at Rs. 300/- per acre, 50% of which will be in the form of a subsidy.

(i) About 8,000 acres are likely to be brought under irrigation as a result of the minor irrigation works taken up in the Fourth Plan. There is ample scope in the tribal areas to tap the streams. It is proposed to bring an area of 20,948 acres under irrigation at a cost of Rs. 83.79 lakhs.

(2) It is proposed to sanction funds required for contribution by the tribals towards share capital to avail credit facilities from co-operative institutions. In order to obtain loan from these institutions a loanee has to pay a preliminary share capital of R. 10, entrance fee Rs. 0.50, valuation fee of Rs. 30, encumbrance certificate fee of Rs. 10 and village officers fee of Rs. 5 and 1/6 of the loan to be borrowed as share capital contribution. As the entire scheme is based on the assumption that credit facilities will be availed on a large scale 1/10th of the total outlay on these schemes has been provided as share capital contribution.

(3) For the benefit of the cultivators in tribal areas, it is considered necessary to expand the present animal husbandry programme. This programme envisages upgrading of local livestock for both draught and milk purpose. An amount of Rs. 12.75 lakhs is provided for stationing of breeding bulls at 100 centres which includes Rs. 2.25 lakhs for fodder development. In these areas upgrading can be taken up only by establishing natural breeding centres as artificial insemination is not possible due to various reasons. It is proposed to strengthen the existing Livestock farm at Chintapally which is undertaking breeding of bulls of improved breed for supply in Visakhapatnam district. With the strengthening of the farm at a cost of Rs. 12.25 lakhs, it will be in a position to cater to the needs of the other tribal areas also.

II. Schemes for landless in Tribal areas :

These schemes have been formulated keeping in view the assignment policy.

In the tribal areas, it is estimated that there are, 36,807 landless tribal households. As there is scope for assignment of Government land for cultivation, it is assumed that at least 5% of the households

will be benefitted. On this basis it is estimated that 34,205 acres of land will be assigned to 6,841 households. The programme for the landless does not cover all the families, but it can be safely estimated that sufficient employment opportunities will be provided for a considerable number of persons of this category in the massive labour intensive schemes envisaged for the cultivators in the same region. The following programme for the landless will directly benefit them. The most backward among the tribal groups will be the main beneficiaries of this programme. The financial allocations are as follows :

(Rs. in lakhs)

Sl. No.	Scheme.	Fifth Plan outlay
(1)	(2)	(3)
1.	Agriculture :	
	(a) Development of Assigned Land.	68.41
	(b) Short term Inputs.	17.10
	(c) Medium term Inputs.	68.41
2.	Trade Assistance.	6.00
3.	Cottage Industries.	10.00
4.	Animal Husbandry.	6.00
	Total	175.92

Land Development scheme provides for developing 34,205 acres of land to make it fit for cultivation at a cost of Rs. 200 per acre. An amount of Rs. 68.41 lakhs has been provided as out right subsidy in view of the fact that the landless persons will not be in a position to borrow and repay loans at least for a period of 5 years. Provision has also been made for supply of seeds of improved variety at the rate of Rs. 50 per acre for 34,205 acres as out right subsidy. An amount of Rs. 68.41 lakhs has been provided for the supply of a pair of plough bullocks at Rs. 800 per pair and for supply of improved agricultural implements.

Under the scheme approved for implementation in the Fourth Five-Year Plan, loans are being granted for the setting up of grocery shops, fair price shops, sweet meat stalls, cloth shops, flour mills etc. This amount is being converted into outright grant, provided the loan is utilised for the purpose for which it is granted. So far 715 tribals have been benefitted by this scheme. For the landless in the tribal areas, an amount of Rs. 6 lakhs has been earmarked which will benefit 600 persons at Rs. 1,000 each.

In the previous plans, several tribals were trained in different trades like carpentry, blacksmithy, pottery, weaving, sisal fibre extraction etc. It is considered desirable to help such trained persons to set up cottage industries. Further there is scope for establishing certain processing industries for which raw-material is available in the tribal areas. Some of these industries are (1) Myrobolam crushing (2) Manufacturing of twine with Koperu grass (3) Fruit canning (4) Extraction of non-edible oils (5) Bee keeping (6) Gum industry etc. An amount of Rs. 10 lakhs has been earmarked for starting processing industries for landless tribals in tribal areas.

The landless households in tribal areas subsist mainly on agricultural labour and have subsidiary occupations like collection of minor forest produce. They supplement their income by rearing and selling pigs, sheeps, poultry etc. Therefore, it is proposed to establish 230 piggery units for the benefit of 230 households. Each unit will comprise of one cross bred boar and 5 local sows. It is estimated that an amount of Rs. 3 lakhs would be required for establishing 230 piggery units. Similarly, 500 sheep rearing units will be started for the benefit of 500 landless tribal households. Each unit will comprise of 1 ram and 5 ewes. An amount of Rs. 3 lakhs has been provided for 500 sheep rearing units at Rs. 600 per unit. The cost of the above programmes is Rs. 6 lakhs.

III. Schemes for Tribal Cultivators :

The Schemes meant for tribals in plains areas have been formulated keeping in view their dispersed nature. In the plains areas, there are about 11,327 tribal households who possess land. The average size of land holding is 3 acres. Almost all of them are in need of Short term inputs and about 10% need plough bullocks and another 20% are in need of agricultural implements. About 500 holdings can be provided with electric motors or oil engines. Supply of milch animals is also envisaged for cultivators in plains areas. The financial outlays are as follows :

				<i>(Rs. in lakhs.)</i>
Scheme			Fifth Plan outlay	
(a)	Short term Inputs.	.. ..	..	16.99
(b)	Medium term Inputs :			
	(i) Plough Bullocks.	.. ..	..	4.58
	(ii) Agricultural Implements.	.. ..	..	2.83
(c)	Supply of Electric Motors, Oil Engines etc.			3.13
(d)	Supply of Milch Animals	.. ..	..	5.66
(e)	Share Capital Contribution of Tribals to Co-operative Banks.	.. ..	..	3.87
Total			..	37.01

Supply of improved seeds to cover an area of 33,981 acres at a cost of Rs. 33.99 lakhs is envisaged, 50% being subsidy. It is proposed to supply 1,183 pairs of plough bullocks at a cost of Rs. 9.07 lakhs at Rs. 8 per pair, 50% being subsidy.

It is also proposed to supply improved agricultural implements to 2,882 cultivators representing 20% of the total cultivators at a cost of Rs. 5.66 lakhs. Each cultivator will be given implements worth Rs. 200 on 50% subsidy basis, 500 electric motors or oil engines will be supplied to progressive tribal cultivators at a cost of Rs. 12.50 lakhs on 25% subsidy basis. It is proposed to supply 1,000 milch animals to 1,000 cultivators at a cost of Rs. 10.00 lakhs on 50% subsidy basis. Further an amount of Rs. 3.87 lakhs has been provided for share capital contribution of tribals to Co-operative Banks which will enable them to borrow loans.

Schemes For Landless Tribals :

There are 97,596 landless tribal households in the plains areas who mainly derive benefit from the general sector programmes being implemented in the plains. Under the tribal welfare sector, however, an amount of Rs. 56 lakhs of which Rs. 31 lakhs will be subsidy, has been provided for the benefit of 5,600 families. The break up of subsidy portion among different schemes is as follows:

Sl. No.	Scheme.	Fifth Plan outlay (Rs. lakhs.)
(i)	Trade Assistance	6.00
(ii)	Supply of milch animals	20.00
(iii)	Supply of plough bullocks, carts etc.,	5.00
	Total.	31.00

It is proposed to provide financial assistance to 600 persons to set up petty trades like cigarette bunks, flour mills, tea shops etc., and an amount of Rs. 6 lakhs has been earmarked for this purpose. It is also proposed to supply 4,000 milch animals at a cost of Rs. 40 lakhs on 50% subsidy basis to 4,000 tribal landless households living in the milk shed areas. Further 1,000 tribal households will be supplied with either bullock carts or rickshaws for plying them on hire at a cost of Rs. 10 lakhs on 50% subsidy basis.

V. Girijan Co-operative Corporation :

The Girijan Co-operative Corporation plays an important role in the tribal economy, particularly in the agency areas.

The activities of the Corporation fall into three main categories:

- (1) Purchase of minor forest produce gathered by the tribals, while ensuring them a fair price in relation to that prevailing in the organised markets to which the tribals have no access.

- (2) Sale of a range of domestic requirements to the tribals through a net work of depots scattered all over the agency areas. This Civil supplies net-work ensures the passing on Governmental subsidies relating to rice, controlled cloth etc., to the tribals.
- (3) Operating an agro-credit scheme for short and medium term loans to the tribals. This ensures flow of credit to the tribals in "Unbanked" areas.

In addition, the Corporation carries on a number of activities, covering functional societies like Auto Rickshaw Drivers society Fuel Coupes and Timber exploitation Society, Land Colonisation Societies, Small processing units etc.,

Recent Government deliberations on the price and costing policy to be adopted by the Girijan Cooperative Corporation, the pattern and quantum of Governmental subsidies involved and the approximate staffing pattern, have lead to the following conclusions:

- (1) The Corporation, shall pass on the entire price realisation from the organised market to the tribal without making any deductions for expenditure on staff and rentals.
- (2) It follows that the total expenditure on staff and rentals will have to be met by way of grants-in-aid from the Government to be adjusted in advance each year. (Vide Orders issued in G. O. Ms. No. 303, Revenue (T.W.-II) Department dated 31st March 1973).
- (3) Requirements of the working capital for trading operations, including purchase and sales will be met by credit limits raised from Co-operative or Commercial Banks. These limits are guaranteed by the Government.
- (4) It follows from (1) above, that the pricing policy which passes on full realisation to the tribal will not permit generation of own resources for capital investments and investments in infrastructure facilities such as godowns, transport etc. The expenditure on these, will therefore have to be met as grants-in-aid from the Government from time to time.

The present operations of the Girijan Cooperative Corporation conforms to the above pattern.

As on date, the Corporation has 311 depots and 30 primary societies. During the Fifth Plan period, the Corporation proposes to cover the entire population of 16 lakhs of tribals of Andhra Pradesh. This involves establishing approximately 800 depots and 45 primary societies. This is based on the norms accepted by the Government Viz:s (i) Setting up of a depot to cover 2,000 tribals and (ii) Organising a primary society in every district with a population of 50,000 tribals Vide G. O. Ms. No. 303, Revenue (T.W.-II) Depot., dated 31st March 1973.

The total requirements in financial terms for the scale of operations may be summed up as follows :

<i>Staff:</i>				<i>Rs. in lakhs.</i>
General Staff .. .. .	..	..	..	500.00
Agro-Credit Staff .. .. .	..	..	..	100.00
				<hr/> 600.00 <hr/>
 <i>Capital Investments,</i>				
Godowns .. .. .	..	..	..	25.00
Transport .. .. .	..	..	..	40.00
				<hr/> 65.00 <hr/>
 <i>Margin Moneys,</i>				
Margin Money for Cash Credit Operations ..				25.00
Non-over due cover .. .. .	..	..	..	25.00
Trading Losses .. .. .	..	..	..	25.00
				<hr/> 75.00 <hr/>
				<hr/> 740.00 <hr/>
			GRAND TOTAL.	740.00

These amounts are proposed to be met partly from the regular grants from the State Government, from the Central grants and for essentially developmental activities from plan outlays. Except staff and trading losses the balance amounts may have to be provided for as Plan outlays either in State or Central sectors.

For the time being it is proposed that an amount of Rs. 50 lakhs be provided for the Girijan Corporation for this purpose. Subsequently on a review of the working of the Corporation and of the availability of assistance from Central sector etc., it might be necessary to reorient the priorities and make a larger provision.

Administrative setup.

The existing administrative setup requires to be strengthened to undertake a plan of the magnitude envisaged.

The financial implications are as follows:		Outlay
scheme		(Rs. in lakhs.)
(a)	District Tribal Welfare Officers with Staff ..	27.81
(b)	Additional Extension Officers (Agriculture) ..	5.70
(c)	Educational Career Guidance Officers ..	7.18
(d)	Administrative Intelligence Unit ..	9.78
(e)	Other expenditure for District Offices and at State Level :	
	(1) Jeeps with trailers 17. ..	5.10
	(2.) Equipment, furniture, rents, contingencies, T. A., etc.. ..	20.00
	Total	75.47

(a) At present the tribal welfare schemes are being implemented by the Collectors assisted by District Social Welfare Officers and Reclamation Officers. Certain schemes which involve construction activity such as sinking of drinking water wells, construction of minor irrigation works and buildings are entrusted to the Zilla Parishads and Public Works Department. In view of the expansion of the various programmes proposed during the Fifth Plan, it is proposed that every district should be provided with a District Tribal Welfare Officer. The District Tribal Welfare Officer will assist the Collector in Coordinating the various Tribal Welfare Programmes both under Tribal Welfare sector and the general sector. At present there is sanction for 6 posts of District Tribal Welfare Officers with the requisite staff for 6 districts mentioned above. Therefore 13 posts of District Tribal Welfare Officers are proposed in this plan for the remaining districts in the State.

(b) Further Additional Extension Officers for tribal area in the seven districts, numbering 20 are proposed at a cost of Rs. 5.70 lakhs.

(c) Educational Career Guidance Officers numbering 25 for supervising hostels, and Ashram schools at a cost of Rs. 7.18 lakhs is proposed.

(d) An administrative intelligence unit for collection of statistics, and planning cell for plan and project formulation at a cost of Rs. 9.78 lakhs are proposed.

(e) Towards jeeps, equipment, furniture etc., an amount of Rs. 25.10 lakhs is suggested.

Minimum Needs Programme :

The approach adopted in the Minimum Needs Programme is that certain levels would have to be reached in the sectors included in that programme and for this purpose norms have been fixed. Thus, for instance, under Education the Minimum Needs Programme aims at achieving an enrolment of 100% for boys and 75% for girls in 6-11 age group and 50% for boys and 80% for girls in the 11-14 age group.

Since the levels reached in the tribal areas are in most cases the lowest in regard to the attainment of these norms, they would be the ones that would benefit most. Thus, for instance, the teachers required to be appointed in the various schools for achieving the above targets of enrolment would be provided for under the Minimum Needs Programme. So also will be the various incentives for attendance mentioned in that programme. The allocations in this sector of Welfare of Scheduled Tribes will cover such items as would be supplemental and intended for such items as are proposed to be taken up in addition to the Minimum Needs Programme in the tribal areas in view of the Special conditions there. Since the location specific exercises for the Minimum Needs Programme have yet to be completed, the actual allocation that would be available for tribals or tribal areas cannot at this stage be pointed out. This general position applies to Nutrition, Water Supply and allocation of house-sites for landless labourers.

In regard to Elementary Education and Medical and Public Health, the programmes attributable to the 24 Tribal Development blocks have been worked out and they involve an outlay of Rs. 2.67 crores and Rs. 1.45 crores respectively.

INTER SECTORAL LINKAGES AND INSTITUTIONAL SUPPORT ETC.

It is observed that during the past the attention of the general sectors of development to the tribal areas and tribals has been comparatively inadequate. In the Fifth Plan it is expected that full attention would be given by the general sectors of development to the problems of tribals also by a set of well-conceived measures. Firstly, a total plan for tribal areas is being worked out in which the role of various departments and programmes would be made clearer. Secondly, even in the initial exercise an attempt is being made to identify the activities in the general sectors which will be of relevance to the tribals. Thirdly, special institutions like Girijan Cooperative Corporation and Girijan Development Authorities are likely to be made full use of for purpose of coordination.

In ensuring adequate coordination the role of the institutional agencies particularly cooperatives and to certain extent commercial banks should be emphasised. It is proposed to involve these agencies in a more intimate way in future.

CENTRAL SECTOR SCHEMES :

The allocations suggested under Central Sector Schemes are as follows :—

(Rs, in lakhs)

Programme		Likely ex- penditure in outlay Fourth Plan	Fifth Plan
(a) Education	(STs)	.. 32.876	61.450
	(DNTs.)	.. 18.001	85.000
(b) Economic uplift	(STs.)	.. 188.800	380.000
	(DNTs.)	.. 11.711	25.000
(c) Health, Housing and other Schemes	(STs.)	.. ..	..
	(DNTs.)	.. ..	18.000
Total	(STs.)	.. 221.176	391.450
	(DNTs.)	.. 29.712	128.000

S.T Scheduled Tribes, DNTs Denotified Tribes.

(a) Education :

Under a scheme for postmatric scholarships 3,500 students will benefit. However there is no ceiling on this particular item under Centrally Sponsored Schemes as the Government of India will reimburse the actual expenditure. An amount of Rs. 9.45 lakhs has been suggested for this scheme. It is also proposed to construct 40 Girls Hostels buildings at a cost of Rs. 20 lakhs. Further provision has been made to expand the activities of the Pre-examination Training Centre and also provide for coaching of tribal students for entrance examination to professional courses. Provision has been made for construction of building for Pre-Examination Training Centre at a cost of Rs. 5 lakhs. The total outlay proposed for this scheme is Rs. 22.00 lakhs.

The Tribal Cultural Research and Training Institute has been functioning since 10 years. It has been conducting studies into socio, economic and cultural life of various tribal groups. The Training Wing has been imparting orientation training to official and non-official development functionaries. In the Fifth Five Year Plan, it is proposed to strengthen the Institute, so that the problems of Scheduled Tribes could be continued to be studied and also to cover new areas of research. It is proposed to reorganise the Institute in such a manner that it will have the six additional units, with the help of which, the problems of Scheduled Castes and Denotified Tribes could also be studied as desired by Government of India. These six units are, Athoropology Unit, Sociology Unit, Applied Anthoropology Unit, Tribal Economy Unit, Statistics and Surveys Unit and Information and Publicity Unit. An amount of Rs. 10.00 lakhs will be required for strengthening the Institute.

(b) Economic Uplift :

In Andhra Pradesh there are 24 Tribal Development Blocks. According to the pattern approved by the Government of India central assistance is provided to these 4 Tribal Development Blocks on stage-wise basis. Out of 24 Tribal Development Blocks, 2 are in post Stage-III 9 are in Stage III and the remaining 13 are in Stage-II. Besides the Tribal Development Blocks there are 24 Tribal Blocks which are not in receipt of Central assistance as they have not been declared as Tribal Development Blocks as Government of India had taken a decision not to open any new Tribal Development Blocks in the Fourth Plan. These four Blocks may also have to be declared as Tribal Development Blocks and Central assistance provided during the Fifth Five Year Plan. During the Fifth Five Year Plan all the Tribal Development Blocks will not receive Central assistance as per the present pattern prescribed by Government of India which will result in virtual stoppage of all developmental activities which is not desirable. Continued financial assistance for post-Stage-III Blocks is imperative in view of the fact that the Blocks need assistance for some more time due to their extreme backwardness. It is desirable to adopt a uniform rate of Central assistance for all the Blocks as the levels of development between one Block and the other do not vary much. As the present level of development has to be necessarily maintained, it is imperative that Central assistance is provided to all the Tribal Development Blocks at Rs. 2 lakhs per year throughout the Fifth Five Year Plan period uniformly. On this basis, the central assistance that would be required during the Fifth Five Year Plan including those 4 Tribal Blocks requiring central assistance at the rate of Rs. 2 lakhs per year throughout the plan period will be Rs. 280 lakhs.

Girijan Co-operative Corporation :

An amount of Rs. 50 lakhs is proposed for strengthening of the Girijan Co-operative Corporation from Central Sector.

Denotified Tribes :

It is proposed to open 30 hostels with a strength of 100 boarders each. The outlay on this is Rs. 73 lakhs. During 1971-72, post-matric scholarships were sanctioned to 440 denotified tribal students incurring an expenditure of Rs. 1.61 lakhs from the Non-Plan Budget 615 applications were rejected for want of provision. The same situation continued during 1972-73 also. During 1972-73, 393 applications were sanctioned and 1087 applications were rejected. The expenditure involved for sanction of the above said applications was Rs. 1.53 lakhs only. For sanction of more number of scholarships to denotified tribal students during 1973-74 an amount of Rs. 1.96 lakhs has been included in the proposals as by denial of scholarships a number of students who have reached the post-matric level of education are forced to drop out. This scheme is therefore included in the Fifth Five Year Plan also with an outlay of Rs. 12 lakhs. The economic support programme for the denotified tribals will be on the model of the package programme of agricultural development for Scheduled Tribes. The total population of Denotified

tribes, Nomadic tribes and Seminomadic tribes is estimated to be 12.60 lakhs. For the uplift of these communities a modest economic support programme with an outlay of Rs. 25 lakhs has been suggested and a housing programme of Rs. 18 lakhs is also envisaged. 1,000 households belonging to the above communities will be selected and rehabilitated in ten colonies. Housing facilities will be provided by undertaking construction of houses on the model of houses being constructed by Andhra Pradesh Co-operative Housing Federation for Scheduled Castes and Scheduled Tribes. The economic support programme for the nomadic, semi nomadic and Denotified tribes communities will comprise of traditional occupation oriented schemes such as manufacturing of whigs, combs, mats etc., Besides these schemes, pig rearing, supply of bullock carts for plying on hire etc., will also be introduced.

32. SOCIAL WELFARE.

With the level of illiteracy being still high and the social outlook towards women still not being one of equal partnership in spite of constitutional guarantee and with the age old social prejudices persisting, efforts have to be made to provide effective welfare measures to women and children especially those belonging to the poorer sections of the society. The social responsibility towards children is extensive due to acute poverty conditions.

While the welfare of women and children requires utmost attention, the social defence measures relating to the welfare of those who are imprisoned for different offences also require attention specially because imprisonment is no more treated as one of punishment but only as a process for corrective action and rehabilitation.

The population of the State consists of 220 lakhs of males and 215 lakhs of females. Of these 47.0 lakhs are under the age of 18 years. The magnitude of the problem of taking care of women and children is therefore, quite extensive. So far the direct services provided by the Women Welfare Department, to the different institutions have been for a total number of 3,740 women and 8,060 children,

REVIEW.

During the Fourth Plan, two Children Homes were established. Twelve creches have been set. Fifteen Women's Welfare Branches, eight units for manufacture of uniforms, one home each for the physically handicapped children and for disabled and destitute widows have also been established. An orphanage has also been set up at Warangal with facilities for training. While the above schemes were for the Welfare of Women and Children, the Social Defence Programme consisted of setting up of a Remand Home at Rajahmundry and appointment of additional probationary officers where the case load under Probation of Offenders Act 1958 has been substantial. The following expenditure is anticipated on different Social Welfare Programmes during the Fourth Plan period.

	<i>Rs. in lakhs.</i>
(a) Women Welfare	21.09
(b) Social Defence Programmes (I.G. of Prisons) ..	8.40
(c) Social Welfare (Director of Social Welfare) ..	2.50
Total	26.59

OBJECTIVES AND STRATEGY:

5. The objective of social welfare programmes in the Fifth Plan are to continue the Welfare Schemes already started on the one hand, to expand the activities by opening homes for collegiate girls, working womens' hostels, orphanages etc., on the other and to expand the activity under Social Defence Programmes.

PROGRAMME DETAILS :

The following are the programmes contemplated in the Fifth Plan under Social Welfare.

<i>Programme</i>	<i>No.</i>	<i>outlay</i>
<i>(Rupees in lakhs.)</i>		
(a) Women Welfare :		
(i) Children Homes ..	10	21.70
(ii) Collegiate Children Homes ..	2	6.77
(iii) Working Women's Hostels ..	2	8.35
(iv) Creches including paying creches ..	10	7.40
(v) Free distribution of books and uniforms ..	..	1.00
(vi) Legal Assistance cell. ..	..	0.50
(vii) Strengthening of Administration ..	..	14.14
		59.86
(b) Social Defence Programmes		
<i>Jail Wing :</i>		
(i) Establishing a new Borstal School ..	1	4.80
(ii) Implementation of Training and treatment programme. ..	..	1.80
(iii) Expansion of Welfare Services ..	..	1.90
(iv) Establishing of Research and Statistical Cell ..	..	1.95
(v) Strengthening of Administration ..	..	2.55
<i>Probation Wing.</i>		
(vi) Starting of certified schools ..	1	3.15
(vii) Starting of Middle Schools in Junior Certified Schools ..	2	2.20
(viii) Opening of Reception Homes ..	1	3.35
(ix) Strengthening of existing Reception Homes. ..	2	1.30
(x) Appointment of care workers ..	4	1.32
(xi) Appointment of Probation Officers ..	3	0.68
		25.00
(c) Social Welfare :		
Establishing one new orphanage and continuing the existing orphanage. ..	2	5.00
Grand Total ..		89.86

Women and Child Welfare.—

There are 40 Children Homes in the State. In spite of extending many facilities, more girls from economically poorer classes, particularly destitutes and other orphans are still compelled to stay away from schools for purely economic reasons. It is therefore considered essential to have one Children Home at least for each Block, i.e., Panchayat Samithi. The present number works out to only 1/8th of the need. As this is a vital programme both in terms of eradication of illiteracy and prevention of the spread of social evils, it is necessary to open at least 10 Children Homes during the Fifth Plan.

The Department of Women's Welfare will be running 40 Children' Homes as at the end of the Fourth Plan. The programme envisages provision to retain girls up to the age of 18 years and to enable them to pass the S.S.C. or the 10th class examination, which is currently the minimum general educational qualification. Some of the girls who are far below the age of 18 years do come out successful at the 10th Class with good record. Such girls have every reason to be frustrated if they are simply turned out when they are of no age to secure employment. As a special case some of them have been sent to the local colleges and their performance had been quite good. Coming as they do from conditions of abject poverty and being socially backward, they may require support to improve their performance in the field of education. The destitute or orphan girls by themselves would not be able to wait for scholarships to prosecute higher studies. It is therefore, proposed to establish 2 Special Children Homes for Collegiate girls at Hyderabad and Visakhapatnam for 30 girls in each. Admissions into these will be made by transfer from among the inmates of the Children Homes in the region who pass their high school examination strictly in the order of merit. The period of stay will be limited to 5 years or attaining the age of 22 years whichever is earlier subject to adjustment upto the end of the academic year.

Working Women's Hostels have been started by voluntary agencies in the capital city (Hyderabad) but their intake capacity is not commensurate with the demand. Over the past decade, numerous establishments have come into being in the twin cities increasing enormously the scope for employment for women. The increased avenues are not utilised by the local population only. People from the districts migrate to the city for appointment and the number of women so doing is quite appreciable. Once they get a job they need a place to stay befitting their employment. It is therefore proposed to open the Working Women's Hostels run by the Department one at Hyderabad and another in Visakhapatnam.

Many of the illnesses of Children are due to the careless way in which they are exposed to all sorts of infection with hardly anyone to look after them when their mothers also have to work.

In urban areas also, people living in slums have no place to leave their children while their mothers go out for work. Creches have therefore to be opened at all places where there is a good number of labour class women. A beginning has been made by opening 45 creches so far in the State. These do not cover even one per cent of the need. However due to financial limitations it is proposed to open 10 creches in the Fifth Plan.

In metropolitan cities and in larger towns many women have taken to white collar employment. When both the husband and wife are working, they find it difficult to arrange for the care of 0-6 age group children. Such ladies will gladly leave their children in institutions if they are equipped decently and will be prepared to meet the cost of the care of the children in such institutions. It is therefore, proposed to open a paying creche for children of middle class people at Hyderabad with an intake capacity of 30.

Even after making education free upto 10th class the attendance of girls in schools is still far from satisfactory, especially in rural areas. While no fee is charged by the schools, the cost of books and uniforms has risen so high that it actually forces the poorer sections to abandon the idea of sending their children to schools. Cost of education includes the cost of books and uniforms and unless it is made free, the weaker sections of the society will continue to lag behind. While some of the students get scholarships, most do not get any assistance. In the present programme, it is therefore proposed to supply books and uniforms free to poor deserving girls studying in high school class. Under Elementary Education in the Minimum Needs Programme Book Grants, free Uniforms and attendance scholarships are proposed to be given to girls studying in primary and upper primary classes.

It is proposed to give legal aid to the needy women to protect them from unscrupulous elements. The Women Welfare Department will provide necessary guidance under the scheme, retention, fees will be paid to lawyers of repute in the District Headquarters.

An orphanage was opened in the Fourth Plan at Warangal with an objective of providing education to orphan children including a few handicapped also. It is proposed to start two orphanages in the Fifth Five Year Plan with a capacity of 80 at each centre in the State.

In view of the fact that the set up of the Department is hardly adequate to meet the requirement, it is proposed to strengthen the Department of Women Welfare by the appointment of 2 more officers and 2 sections for the Directorate. It is also proposed to standardise the ministerial set up in the office of the District Women Welfare Officers by appointing one U.D.C., and Typist for each of the office where they do not exist at present. It is also proposed to provide Jeeps to all the District Women Welfare Officers so as to effectively supervise the welfare institutions and schemes which are spread-out throughout the District.

SOCIAL DEFENCE :

Jail wing :

(a) The Andhra Pradesh Borstal Schools Act, 1936 is in force in the State. According to this Act adolescent offenders convicted by a Court of Law can be sent to a Borstal school for detention and training instead of being sent to a jail. One Borstal School at Visakhapatnam was started during the Second Five Year Plan and this is not sufficient to meet the requirements of the State. It is proposed to start one more Borstal School to implement the provisions of the Borstal Schools Act during the Fifth Plan.

According to the policy decision taken by the State Government the object of imprisonment is correction and rehabilitation and it is no longer aimed at punishment. If this objective has to be fulfilled effectively the Prisons have to be provided with well qualified and trained personnel who could study individual prisoners classify them according to their problems, aptitude and ability and devise treatment programmes for them and supervise the vocational and educational programmes. So far none of the Central Jails where prisoners sentenced to long terms are confined are provided with such qualified persons. It is proposed during the Fifth Plan, to create posts of Deputy Superintendents of Jail in all four Central Jails for introducing scientific classification and treatment programmes.

Welfare services in Jails were first introduced in our State during the Third Five Year Plan period. The Central Jails at Visakhapatnam, Rajahmundry, Warangal and Hyderabad the State Jail for Women Rajahmundry and the Prisoners Agricultural Colony at Anantapur were provided one Welfare Officer each. According to the Yardstick formulated by the Central Bureau of Correctional Services Welfare Officers have to be provided at the rate of one post for every 200 prisoners. In big Central Jails at Rajahmundry and Hyderabad where not less than thousand prisoners are confined in each Jail, large number of Welfare Officers have to be employed to attend to the needs of the prisoners according to the yardstick. However to begin with one more Welfare Officer is proposed to be added to the four Central Jails at Visakhapatnam, Rajahmundry, Warangal and Hyderabad and to create a post of Chief Welfare Officer at the Headquarters i.e., Office of the Inspector-General of Prisons to co-ordinate the work in various Jails and to provide necessary guidance.

It is universally agreed that research plays an important role in all fields of human activity and especially in the Correctional field. The Central Bureau of Correctional Services, have advised all State Prison Administrations to develop research and statistical sections for collection of data, analysis and research so that the efficacy or otherwise of various programmes could be objectively evaluated and new and purposeful programmes could be developed. With this object in view, it is proposed to create a Research and Statistical Cell in the Head Office i.e., Office of the Inspector-General of Prisons with one Research Officer and the required staff.

Although the Jail Department has been entrusted with new programmes from time to time and inspite of the fact that the number of institutions under its control is increasing year after year, no effective steps have been taken so far to strengthen the office of the Inspector General of Prisons. It is proposed to create a post of Deputy Inspector General of Prisons, one post of P. A. to Inspector-General of Prisons and the necessary ministerial staff to work under them.

Probation Wing :

According to the Children Act in force in the State, children undergoing trial have to be lodged in Reception Homes during the period of their trial and not in Jails. At present there are Reception Homes at Hyderabad, Vijayawada and Rajahmundry only. In other Districts where there are no Reception Homes, Children undergoing trial are

lodged in Jails which is not desirable. It is therefore proposed to start one Reception Home in one of the districts of Rayalaseema region during the 5th plan period.

According to the Children Act, no child can be sentenced to imprisonment but such Court convicted children have to be detained in Certified Schools for their education and training. During the Second and Third Five Year Plan, one Girls Certified Schools at Hyderabad, one Junior Certified School at Hyderabad, one Senior Certified School at Hyderabad and one Junior Certified School at Eluru have been started. There are no certified schools in Rayalaseema and children belonging to this region are now lodged in Eluru or Hyderabad. Moreover, all the existing Certified Schools are overcrowded and there is no accommodation for fresh admissions. It is therefore proposed to start one Junior Certified School during the Fifth Five Year Plan in Rayalaseema region.

Appointment of Case Worker :

In the Certified Schools existing in the State, there is no arrangement for individualised treatment of inmates as case workers are not appointed so far. It is essential to introduce individualisation in the treatment of juvenile delinquents especially when each Certified School is having a population of not less than 400 children. It is therefore proposed to appoint two Case Workers each at Junior Certified School.

In the Junior Certified Schools at Hyderabad and Eluru, the present arrangements are confined to teaching of the children upto 4th standard. As most of the children are detained in these institutions until they attain the age of 14 years, it has become necessary to start Middle Schools by increasing the number of teachers as per the advice of the Education Department. Accordingly it is proposed to start middle schools in the two Junior Certified Schools located at Hyderabad and Eluru.

The Government Reception Home at Vijayawada was started prior to 1st November 1956 in the former Andhra State and the Auxiliary Home for boys, Hyderabad was also started prior to 1st November 1956 in the former Hyderabad State. As full time Superintendents posts are not provided, they are managed by Probation Officers and thereby, probation work is suffering. In order to relieve the probation Officers of the Institutional work and to provide full time supervision over these institutions, it is proposed to provide Superintendents post to these two institutions.

With the bringing into force of the Central Probation of Offenders Act, 1960 in the entire State, the work load of Probation Officers has increased in most districts. According to the yardstick evolved by the Central Bureau of Correctional Services, Government of India, each Criminal Court has to be provided with a Probation Officer by the end of 5th Five Year Plan and according to this yardstick, every district requires 10 to 12 Probation Officers. At present some districts are having three Probation Officers, some two officers and other one officer each. It is proposed to appoint three more Probation Officers during the 5th Five Year Plan in such of the areas where the case load is quite heavy.

33. LABOUR AND LABOUR WELFARE.

The programmes under this sector consist of three groups. The first group relates to the schemes for training of Craftsmen in order to provide technical personnel to meet the manpower requirements of the factories. The second group comprises the schemes of setting up of employment exchanges, collection of employment marketing information and establishment of vocational guidance units etc. The third group includes labour welfare schemes, administrative machinery for conciliation and disputes of assistance to trade unions.

OBJECTIVES AND STRATEGY :

The objectives of the programmes under Labour and Labour Welfare are :

- (a) to reorient the courses which are being imparted in the I.T.Is so as to make them suitable for getting immediate employment ;
- (b) to start different short term courses and impart apprenticeship training so as to make the persons suitable for self-employment schemes ;
- (c) to provide more information and render necessary assistance in employment registration and improvement of employment opportunities ; and
- (d) to provide labour welfare services by way of adequate counselling and provision of more labour welfare measures such as starting of labour relations advisory services etc.,

<i>Scheme</i>	<i>outlay</i>
PROGRAMME DETAILS :	<i>(Rs. in lakhs.)</i>

The following are the Fifth Plan Schemes :—

I. EMPLOYMENT AND TRAINING :

Training Wing :

(a) Construction of I.T.I. in Hyderabad City and providing equipment.	50.00
(b) Starting of production wing	10.00
(c) Replacement of unpopular trades and retraining of I.T.I. staff.	5.00
(d) Starting of short-term courses in self-employment trades.	10.00
(e) Establishment of two Girls I.T.Is.	8.00

<i>Scheme</i>	<i>Outlay</i> <i>Rs. in lakhs.</i>
(f) Strengthening of I.T.Is. with revised staffing pattern.	5.00
(g) setting up of Rural Training Institute.	15.00
(h) Establishment of basic training centres for chemical trades.	15.00
(i) Construction of Hostels for I.T.I. apprentices.	} 15.00
(j) Providing additional staff in the districts including provision of vehicles.	
(k) Strengthening of Administration for Craftsman and Apprentice Training programmes.	10.00
	148.00
 <i>Employment Wing :</i>	
(a) Strengthening of E.M.I units at the Exchanges.	} 10.00
(b) Strengthening of Employment Exchange.	
(c) Strengthening of Vocational guidance units.	
(d) Opening of Employment Exchanges in Agricultural University and Technological University.	
(e) Town Employment Exchanges.	
(f) Cell for Special Employment Scheme.	
(g) Regional Research in Vocational Guidance.	
(h) Strengthening of District Employment Wing.	
Total Employment & Training	153.00

II. LABOUR AND LABOUR WELFARE :

(i) <i>Labour Unit.</i>	
(a) the Labour Welfare Centres.	3.00
(b) Upgrading of two Deputy Commissioners posts into Joint Commissioners of Labour, appointment of two Deputy Commissioners, the Regional Assistant Commissioners of Labour, Strengthening of Bulletin section appointing Five Industrial Relations Officers and Six Labour Welfare Officers with staff.	14.45
(c) Appointment of 25 Assistant Inspectors of Labour with staff.	7.70
(d) Training of Officers in Labour Department.	0.40
(e) Purchasing Vehicles for the Officers of the Department.	3.45

<i>(ii) Factories Unit :</i>	<i>Rs. in lakhs.</i>
(a) Appointment of one Regional Inspector of Factories, Thirteen Inspectors, 7 Asst. Inspectors, one Deputy Chief Inspector of Factories etc., and upgrading of the posts of Chief Inspector of Factories and Deputy Chief Inspector of Factories.	19.97
(b) Purchasing of books for Library .	0.16
(c) Improvement of Institute of Industrial Safety and Productivity.	0.38
 <i>(iii) Boilers Unit :</i>	
(a) Strengthening of administrative machinery.	0.60
(b) Laboratory equipment and purchase of books.	1.00
Total Labour & Labour Welfare	52.00
Grand Total :	205.00

The scheme-wise details under Employment and Training and Labour welfare are described below:

1. EMPLOYMENT AND TRAINING TRAINING WING

It is proposed to construct permanent buildings for I.T.Is. in the old city of Hyderabad and also procure equipment for which sanction was accorded in the Fourth Plan period. For providing self-employment opportunities for the I.T.I. passed boys and to provide them with job training it is proposed to start production wings in a phased manner. New trades are proposed to be introduced in the various I.T.Is. by abolishing unpopular trades for keeping pace with the technological changes and to meet the changing needs of industries. This is an essential one for increasing the employability of those who pass out from the I.T.Is. Under the reorganisation it is proposed to introduce trades that are suitable for chemical industry and steel plant, medical equipment, instrumentation and mechanical refrigeration and air-conditioning. Intensive training is proposed to be given to those who pass out from I.T.Is for getting themselves self-employed without waiting for jobs. To meet the needs of industries for girl technicians in the trades like electronics instrumentation, commercial and catering group etc., and to meet the aspirations of the girls it is proposed to start two new I.T.Is. exclusively for girls in the trades of cutting, tailoring stenography (English and Telugu) Mechanics (Radio and Television), Electronics, Draftsmen Civil, Instrumentation Hand composing and trade printing, Plasting Technology and Refrigeration. Starting of basic training centre in Chemical trades at I.T.I. Hyderabad is also envisaged in the Fifth Plan. At present the existing District Level Training Centres are located only in the big towns and it is difficult for the local artisans living in rural areas to have the facility of this training. Moreover the poor people may not be in a position to go

to the town for acquiring technical qualifications. Hence it is proposed to reorganise the existing District Level Training Centres to meet diversified training requirements from rural areas at district and taluk levels inclusive of construction of buildings and retraining of staff etc. As per the recommendations of the N.C.T.V.T. additional posts have to be in the I. T. Is. such as upgrading of Principal's post, Technical Store-keeper etc. It is proposed to take up the same during Fifth Plan. To improve the placement of apprentices and to provide adequate hostel accommodation it is necessary to construct hostel buildings in Industrial areas where there is concentration of apprentices. Hence it is proposed to construct hostel buildings at Hyderabad and Visakhapatnam. It is proposed to provide additional staff in the districts for conducting surveys for location of new places and for supervision of apprenticeship training programmes including provision of transport facilities to the Principals to visit various establishments etc. The Directorate for craftsmen and apprenticeship training programme is proposed to be strengthened so as to have more effective supervision on the working of the I.T.Is. and the District Level Training Centres.

Employment Wing :

It is proposed to strengthen the employment market information wing at the Employment Exchanges and also in the Directorate. Under this scheme all the employers in the public sector and those private employers employing 25 or more persons are required to render returns under provisions of Employment Exchanges Act. The information collected under the programme is compared and consolidated at the district level showing industry-wise changes in employment. This programme was initiated about a decade back and the volume of work has increased consequent on the number of factories which have grown up during this period. It is therefore proposed to strengthen the Employment Exchanges at Visakhapatnam, Kakinada, Vijayawada, Guntur and Hyderabad with the minimum staff required to cope-up with the increased work under employment market information surveys.

It is proposed to strengthen the Employment Exchanges also in view of the increased volume of work. The present Employment Exchanges are functioning with the staff which was sanctioned when the Employment Exchanges were started except in case of the two Exchanges at Hyderabad and Visakhapatnam for which additional staff has been sanctioned. The number of persons on the live registers of Employment Exchanges by the end of 1972 were 3,70,000 persons. As per norms fixed by the Director-General of Employment and Training, more than 150 additional L. D. Cs. will be required for the Exchanges. The volume of work in processing the data and in the registration and renewals is quite enormous. It is therefore proposed to strengthen the Employment Exchanges by appointing 15 Upper Division Clerks, 87 Lower Division Clerks and 5 Typists. This is the barest minimum required for the proper functioning of the Employment Exchanges.

It is proposed to strengthen the State Vocational Guidance Unit or properly supervising the existing 15 Vocational Guidance Unit

located at the Employment Exchanges and the Employment Information and Guidance Bureau located in the three Universities in the State. At present the State Vocational Guidance Wing is manned by Assistant Director with 2 Lower Division Clerks. Since the work of manning of Vocational Guidance Wing is of technical and highly professional in nature it is proposed to strengthen this wing by appointing Vocational Research Officer with the necessary staff.

It is proposed to set up Regional Research Centres of Vocational Guidance at Warangal, Hyderabad, Vijayawada, Visakhapatnam and Kurnool. These wings will be entrusted with the work of undertaking of depth studies relating to Vocational Guidance. It is proposed that each wing is manned by an Officer in the cadre of District Employment Officer.

A Technological University and Agricultural University are functioning in the State. It is proposed to set up two Employment Exchanges one in the Technological University and other in the Agricultural University manned by one Officer of the cadre of Regional Employment Officer with the necessary staff.

It is also proposed to set up Vocational Guidance Programme wings in the districts of Adilabad, Medak, Nalgonda, Srikakulam, Ongole and Cuddapah where these wings are not yet set up, on the same pattern of other Vocational Guidance Units which are functioning in the other districts. Setting up of Town Employment Exchanges at Rajahmundry, Machilipatnam, Tenali and Kothagudem which are not district headquarters towns, and at the same time which are places with heavy employment potential is also proposed. The staff pattern for these four Employment Exchanges will be on the same pattern of District Employment Exchanges. This is in accordance with the recommendations of the National Commission on Labour which recommended the opening of Employment Exchanges in all Towns having a labour force of 10,000 and above with a view to make available the Employment Exchange facilities to Semi-urban population.

The need for providing guidance and help to rehabilitate certain kinds of persons like ex-servicemen, scheduled castes, women, physically handicapped and other weaker sections of the society has been realised and some concessions have already been provided to them by Government. There has been considerable work done to implement these concessions with the existing machinery at Employment Exchanges. But it is undeniable that the attention given to guide and place these categories of applicants has not been the optimum. With the existing personnel and the machinery with the Employment Exchanges, it is not possible to give extra attention to these applicants. This obviously leads to dis-satisfaction of these under-privileged categories of applicants. To implement the concessions and safeguards of these applicants it is necessary that a separate cell be created in every Employment Exchange. The work being skilled and requiring careful attention, it is proposed that it should be manned by a Gazetted Officer assisted by a Clerk. It is therefore proposed to create a post of Employment Officer and a Clerk to attend to this item of work exclusively.

LABOUR WELFARE :

There are 11 Labour Welfare Centres functioning in the State. These centres have been constructed at a great cost. There is not enough recreational and educational facilities in these Welfare Centres. It is therefore proposed to provide adequate equipment and material in the Fifth Plan period in these Welfare Centres.

It is proposed to upgrade two posts of Deputy Commissioner of Labour to that of Joint Commissioners one to deal with complex problems on labour and the other to cope up with the increased work at regional and district level in the matter of effective implementation of Minimum Wages Act in agricultural employment. Two posts of Deputy Commissioner of Labour are proposed, one to deal with Labour relations Advisory Services and the other to deal with periodical refresher course and in-service training to the Officers of the Department. It is also proposed to appoint two Regional Assistant Commissioners of Labour, and appoint Five Industrial Relations Officers with staff to investigate the strength of various units for purpose of recognition, enquire into the complaints of unfair labour practices and intra and inter-union rivalries.

It is also proposed to train Officers of the Labour Department by sending them to Calcutta, Delhi and Bombay. The research section for the publication of Labour Bulletin is also proposed to be strengthened. It is proposed to strengthen the Factory Inspectorate by appointment of 38 Inspectors of Factories, one Regional Inspector and 7 Assistant Inspectors and by upgrading the posts of Chief Inspector of Factories and Deputy Chief Inspector of Factories.

The Boiler Inspectorate is proposed to be strengthened both at the Inspectorate level as well as at the district level.

34. STATISTICS.

In the Fourth Plan, a sum of Rs. 14.58 lakhs was spent in conducting ad hoc economic and statistical surveys and studies with a view to improve the data base. There is a scheme for conducting the Family Living Surveys to ascertain the latest consumption pattern of the Industrial working class families in selected centres for revising the weighting diagram in order to compile fresh series of C.P.I. Numbers, a scheme for collecting House Building Statistics, a scheme to study various aspects of the distribution of trade with details of capital, commodities, inputs and outputs, profit and loss, labour employed etc., a scheme for the conduct of Livestock Census, a scheme to build up regional accounts and to prepare estimates of capital formation and a scheme to instal additional rainguages to ensure a more representative geographic coverage.

In addition, four Centrally Sponsored Schemes have also been taken up for implementation. They are a scheme for conducting assessment surveys of High Yielding Varieties for determining the spread and yield rates of these varieties in cultivators fields and extent of adoption of improved practices ; a survey of small scale and village industries to fill up the gap in the available information relating to small scale industries in the unorganised sector ; an Agricultural Census to collect holding-wise information relating to area under crops and irrigated area, etc., on a complete enumeration basis as a part of World Agricultural Census sponsored by F.A.O. and Timely Reporting of Agricultural Statistics for improving the accuracy and timelines of Agricultural Statistics in the State.

The field work relating to Family Living Surveys, World Agricultural Census, Survey of Small Scale industries and live-stock was completed and the tabulation work is in progress and the reports will be finalised in current year. The field work relating to first round of Survey of Distributive Trade is in progress and this also is expected to be completed before the end of the current year. Under the scheme for Timely Reporting of Agricultural Statistics, 60 per cent of the villages would be covered in a phased manner by the end of Fourth Plan. The schedules collected in Survey of High Yielding Varieties are being scrutinised and sent to Government of India regularly. The data relating to Housing Construction activity is being collected Compiled and furnished to the National Building Organisation, periodically.

[Statement]

It is proposed to take up the following schemes in the Fifth Plan.

<i>Name of the Scheme.</i>	<i>Fifth Plan Outlay (Rs. in lakhs).</i>
1. Surveys on goods traffic by road	9.14
2. Preparation of Municipal year book	2.35
3. Strengthening the Machine Tabulation unit in the Bureau of Economics and Statistics.	12.75
4. Extension of Crop cutting Experiments to other principal crops in the State	2.10
5. Conduct of Livestock Census, 1976	6.86
6. Installation and maintenance of additional raingages	11.20
7. Construction of Buildings in the Bureau of Economics and Statistics	5.60
Total	50.00

Of the above schemes, the first three schemes are core schemes recommended by Government of India for implementation during the Fourth Plan which, however, could not be implemented due to limited provision available for statistics. The scheme relating to installation and maintenance of additional raingages is a spillover scheme from the Fourth Plan. The scheme relating to the conduct of Livestock census is a periodical scheme to be taken up once in Five years for the collection of data relating to various aspects of Livestock in the State.

35. PLANNING ORGANISATION.

An allocation of Rs. 1.5 crores is made in the Fifth Plan for taking up schemes to strengthen the planning machinery in the State in keeping with the recommendations of the Planning Commission, Government of India, the Administrative Reforms Commission and the thinking of the State Government itself in this regard. The strengthening of the Planning machinery has been necessitated because of the need :—

- (a) for continuous advice of an expert body, adequately assisted by technical staff to bring about more scientific planning at the State level in view of the complex and growing Governmental role in the process of economic development ;
- (b) to evolve appropriate strategies for various areas based on their resource endowment and their specific problems ;
- (c) to formulate projects and schemes more scientifically not only to overcome existing deficiencies in the present process of project formulation which have led to under-estimation of cost and over-estimation of benefits, but also to enable more rational priorities and choices based on comparative cost benefit analysis ;
- (d) to build up an adequate machinery for monitoring plan progress ;
- (e) to ensure continuous project evaluation and re-organisation of the project and plan priorities from time to time ;
- (f) to ensure that augmentation and diversification of employment becomes an essential component of the strategy for sectoral as well as area development ;
- (g) and lastly, to bring about a realistic approach to planning from below by strengthening regional and district Planning through an appropriate machinery set up for the purpose.

The strengthening of the Planning machinery would primarily involve building up of the technical expertise in the preparation of long term perspective plans, project formulation, project evaluation, estimating manpower and employment, monitoring the plan progress and in the preparation of Regional and District Plans.

The long-term perspective plan will have to be based on continuous economic analysis and detailed studies involving use of econometric methods and statistical techniques. The project formulation work would involve the establishment of project formulation units

in development departments which would scrutinise each of the projects in the concerned field in terms of their investment, income employment implication, cost benefit ratios and locational significance over a time dimension. In manpower and employment the existing gaps in the information system will have to be identified and suitable procedures have to be devised for improvement of the information system. The need for comprehensive and scientific project evaluation needs no emphasis as ultimately the experience gained in implementation of the projects taken up will be extremely useful in increasing the efficiency in project formulation and in implementation of the future projects. With the increasing emphasis being placed on an area and spatial approach to planning problems, it is imperative to prepare regional and district plans on scientific lines.

The building up of the technical expertise will, therefore have to be at three levels *viz.*, State level, departmental level and the district level.

At the State level the Planning organisation would have to be considerably strengthened to discharge the functions mentioned earlier. The question of having a State Planning Board is also under examination of the Government. The more important Departments at least would have to be strengthened in regard to project formulation and project analysis by the appointment of necessary experts in these fields. For District Planning appropriate expertise would have to be built up at the district level and any strengthening of the data base that is considered essential would also have to be taken up. Proposals in regard to all these aspects are already under examination of Government and it is hoped that it would be possible to strengthen the planning machinery at all these levels by the time the Fifth Plan commences.

36. LAND REFORMS

Broadly speaking, the major programmes under Land Reforms comprise :

- (a) Abolition of intermediary tenures ;
- (b) Tenancy Reforms ; and
- (c) Ceilings.

Abolition of Intermediary tenures :

All major intermediary tenures such as Zamins, undertenures, Jagirs etc., have already been abolished and converted into Ryotwari tenure both in Andhra and Telangana. As regards minor inams, most of them situate in Andhra Area have also been abolished. A comprehensive Act was passed in the year 1967 for abolition of minor inams in Telangana. But it was struck down by the High Court of Andhra Pradesh in the year 1970. The State Government have gone in appeal to the Supreme Court against the judgment of the High Court and a proposal for having a new legislation or in the alternative to implement 1955 Act with some amendments for the purpose is also under the active consideration of the Government. The muttadari and the malguzari tenures in the Scheduled areas of the State have also been abolished.

Tenancy Reforms :

So far as the Telangana region is concerned, comprehensive Tenancy reforms have already been undertaken. In the Andhra region also a comprehensive bill for amending the Andhra Pradesh (Andhra Area) Tenancy Act 1956 was passed by both Houses of the State Legislature in the year 1970, but the Government of India have returned the Bill with certain suggestions for consideration of the State Government. It has been tentatively decided to bring in fresh legislation keeping in view the suggestion of Government of India; as soon as the new Agricultural Ceiling law is implemented.

Ceilings :

In the year 1961 an agricultural ceiling law was passed which seeks to impose a ceiling on agricultural holdings at $4\frac{1}{2}$ times the family holding for existing holdings and 3 times the family holding for future acquisitions, the family holding ranging from 6 acres for Class 'A' lands to 72 acres for Class 'B' Lands. Following the evolution of certain broad outlines by the Central Land Reforms Committee in the year 1971 for framing revised ceiling laws all over India and in the light of the National Guidelines formulated by the Government of India subsequently, a revised ceiling Bill was passed by both Houses of the State Legislature in September, 1972. It received the assent of

the President of India on 1st January, 1973 and was Gazetted as Act 1 of 1973 on the same day. The important provisions of the Act are the following :

(a) The Ceiling area in the case of a family unit of not more than five members (individual, his or her spouse, their minor sons and unmarried minor daughters), an individual, who is not a member of a family unit, or any other person is one standard holding. In the case of a family unit consisting of more than five members, the ceiling area is increased by one-fifth of the standard holding for every such member in excess of five, so however, the ceiling area does not exceed the over all limit of two standard holdings. The standard holding ranges from 4.05 hectares (10 acres) to 21.85 hectares (54 acres), with marginal adjustments for drought prone areas etc.

(b) The act provided for constitution of Tribunals for determination of ceiling area and taking over of surplus lands on payment of amounts to surplus holders.

(c) It also provides for distribution of surplus lands for use as house-sites and for agricultural purposes to landless poor persons, with suitable reservations for Scheduled Castes, Scheduled Tribes and Backward Classes.

(d) Lands held by State and Central Government, local authorities, religious, charitable and educational institutions, including a wakf, of a public nature, Public Sector corporations and certain co-operative farming Societies of weaker sections among others, are exempted from the provisions of the Act.

The Act has not yet been implemented. Certain amendments to the Act are under the consideration of the Government of India. The Act when implemented will require the constitution of about 200 Tribunals besides the appointment of a large staff of revenue officers and staff of the rank of Deputy Collector and below. Approximately an amount of Rs. 45 crores will be required for payment of amounts to surplus holders and Rs. 5 crores for meeting the expenditure on employment of special staff.

Since it is yet to be decided as to how the compensation of Rs. 45.00 crores would be provided for, the expenditure on staff to the tune of Rs. 5.00 crores is provided in the plan.

37. AREA PLANNING PROGRAMMES

In appreciating the overall problems of the State and in indicating a general approach to the Fifth Five-Year Plan it was mentioned that the three most important issues relate to :

- (a) reduction of regional imbalances ;
- (b) reduction of income disparities ; and
- (c) bringing up of the economic level of the lowest sections.

Appropriate regional development policy based on full appreciation of the spatial angle resulting in Area Development Approach as an important element in meeting these requirements has to be appreciated. In the exercise relating to Minimum Needs Programme and other sectoral programmes some of the minimum items of public consumption have been taken into account and their location would be appropriately integrated into an Area Planning Approach. However, it is necessary to ensure that more definitive studies are made in course of time relating to micro-aspects such as location of services, identification of socio-economic programmes at micro level and ensuring appreciation of the spatial linkages at these levels. This requires continuous study particularly in the context of special regional problems of the state on the one hand, and programmes to fill in area and locational gaps in public service functions on the other.

It is therefore proposed to have an Institute of Area and Regional Planning in the State. While it is yet to be decided whether it should be an institute sponsored by the State Government or assisted by the State Government, the need for such institute is recognised. A tentative allocation of Rs. 1.50 crores involving an average annual grant of Rs. 30 lakhs is proposed.

Further, even with preliminary identification a number of lags may be revealed in course of time in terms of area gaps and locational gaps relating to certain primary services and amenities. It is quite possible that the ' Minimum Needs Programme ' and the reorientation of the sectoral programmes would still leave certain areas uncovered. Pending more detailed field work particularly in the context of District Planning it is now proposed to provide a tentative allocation of about Rs. 6.72 crores.

38. INFORMATION AND PUBLICITY

The development of information services is essential in the context of dissemination of information on various developmental activities to keep the people informed about the developments in the various sectors of the economy of the State. In the earlier plans, the State Directorate of Information and Public Relations had taken various programmes to organise facilities such as information centres, community radio sets, mobile publicity vans and organising cultural programmes and exhibitions. In the Fourth Plan, the anticipated expenditure on information and publicity programmes is Rs. 12.83 lakhs. In the Fifth plan, it is proposed to intensify these activities for which a sum of Rs. 26.68 lakhs is provided, the break up of which is as follows:—

<i>Serial No.</i>	<i>Name of Scheme</i>	<i>Outlay</i> <i>(Rs. in lakhs)</i>
1.	Song & Drama Programmes	3.75
2.	Running of Block Information Centres	8.01
3.	Purchase of Audio-visual equipment	4.50
4.	Organising Exhibitions	4.49
5.	Purchasing Publicity Vans	5.93
		26.68

Under the scheme of Song and Drama, a continuing scheme, Republic Day celebrations will be organised in all the 324 Blocks in the State. Cultural programmes will be organised including Kavim-sammelanams. The existing Block information centres will be continued in the Fifth plan. Providing Audio-visual equipment to as many blocks as possible in the Fifth Plan period is also envisaged. Exhibitions are proposed to be organised in order to disseminate information to public. It is also proposed to purchase 7 Publicity vans for some of the districts which are absolutely in need of them.

*Part III—Regional Development and
District Profiles*

I DEVELOPMENT OF BACKWARD AREAS

I. REGIONAL DEVELOPMENT POLICY :

Despite the development achieved over the three Plan periods in various sectors, Andhra Pradesh happens to be one of the less developed States in the Union. However, within the State also problems of regional imbalances have been arising. While, therefore, at the national level the State should be the unit for judging relative levels of the development and evolving policies for reducing the disparities between these levels, there is need now to consider the position within the State itself and to see how far, within the constraints of the overall plan outlays which are feasible for the State as a whole, policies and programmes could be adopted to reduce intra-State regional disparities. This will necessarily involve the preparation of regional Plans as part of the State Planning process.

In terms of Plan process, regional problem could be approached in different terms, *viz.*

- (a) disaggregation of national Plans and expression of national Plan in regional scales;
- (b) aggregation of regional Plans prepared in regional setting;
- (c) a Plan for a particular region in the over-all context.

A successful policy would invariably involve a combination and co-ordination of all the three aspects. To work out a rational policy of regional development a study of the process of regional development is essential. A purposeful regional development policy must define the goals both social and economic which must be consistent with the dominant national aspirations.

The tasks of regional Development could be summarised as follows:

- (1) The national policy itself should express the regional policy element in terms of regionalisation, the broad framework in terms of spatial order desired and in terms of time dimension;
- (2) The regions have to be clearly delineated;
- (3) A series of regional studies should be done by collecting the data on regional and inter-regional relations;

- (4) A Plan strategy has to be evolved related to each type of region in the context of over-all national developmental policy; and
- (5) Detailed Plans and programmes have to be worked out in the light of the strategy evolved.

Essentially the basic proposition in a regional development policy has to be in terms of provision of a lead sector or export base for the region, differentiating the region by appropriate specialisation and greater integration of the region with the rest of the national economy. This being the basic principle, the strategy has to be based on, how the specific activities are to be distributed between different regions.

In the context of a specific region the strategy would necessarily evolve out of all these considerations. Thus, it is clear that adequate regional balanced development has to be appropriately planned at the National, State and regional level. The long term measures would involve a detailed and integrated planning for which effort has already been initiated in the State of Andhra Pradesh for preparation of regional Plans on the following lines:

- (1) A survey of—
 - (a) The existing physical potential.
 - (b) The structure of the economy of the region.
 - (c) The economic linkages existing with other regions.
 - (d) The unique advantage available to the region or that could be developed.
- (2) Based on the above an identification of the Primary activity and Secondary activity.
- (3) Evaluation of a strategy for regional development in the light of the above.
- (4) Expression of the strategy in terms of programmes viz. the infrastructural investment, the administrative machinery, the lineages in terms of the various technical processes for the activity, the need to create external economies, the need to provide well thought out spatial distribution of activities and urban hierarchy etc.
- (5) The financing of such a programme by Government, by institutions, etc., and the concomitant policy orientation for all these institutions.
- (6) evolving supporting measures in terms of research and policy.

Andhra Pradesh has distinct advantages for dovetailing the work of economic planning with that of regional economic planning in as much as the State has three distinct regions namely Telangana,

Rayalaseema and coastal Andhra. Each of these regions has broad characteristics required for being treated as a distinct physical planning region in itself.

The State of Andhra Pradesh came into existence on 1st November 1956. Andhra Pradesh now comprises of 21 districts. The Telangana region covers 9 districts, viz., Mahbubnagar, Nalgonda, Hyderabad, Medak, Nizamabad, Adilabad, Karimnagar, Warangal and Khammam, while the Andhra region covers 12 districts viz., Srikakulam, Visakhapatnam, East Godavari, West Godavari, Krishna, Guntur, Ongole, Nellore, Chittoor, Anantapur, Cuddapah and Kurnool. Within the Andhra region Chittoor, Anantapur, Cuddapah and Kurnool districts and Giddalur and Markapur taluks now in Ongole district constitute the Rayalaseema region while the rest form the Coastal Andhra region.

According to the provisional figures of 1971 population Census, the population of Andhra region in 1971 was 276.24 lakhs against 157.71 lakhs in the Telangana region. Thus, the population of the Telangana region constitutes 36.3 per cent of the total population of the State. The area of Telangana region however, constituted 41.8 per cent of the area of the State being 44.31 thousand square miles out of 106.05 thousand square miles.

Rayalaseema covers an area of 28.38 thousand square miles with a population of 83.28 lakhs. The population of Rayalaseema is slightly less than one-fifth of the State.

The Coastal Andhra region of the State is more densely populated than either the Telangana region or the Rayalaseema region. The density of population in Coastal Andhra in 1971 was 578 persons per square mile against 356 in Telangana and 293 in Rayalaseema. Thus, the density in Telangana was about 3/5th of that in Coastal Andhra.

II. REGIONAL STRATEGIES :

Efforts have been made to study the broad characteristics of each of these regions and identify the strategies of their development based on these characteristics.

(A) TELANGANA :

The Telangana region comprises of the nine districts of Adilabad, Hyderabad, Karimnagar, Khammam, Mahbubnagar, Medak, Nalgonda, Nizamabad and Warangal. After the Reorganisation of States on 1st November 1956, Bhadrachalam and Nugur taluks of East Godavari district were added to Khammam district, while Munagala paraganas comprising 23 villages was transferred from Krishna district to Nalgonda district.

This region extending over a vast stretch of about forty-four thousand square miles and covering a population of about 1½ crores presents a picture of varying resource endowment and socio-economic development in different parts of the region. For instance, as one

traverses from north to south and east to west of the region, the variations in rainfall, forest and mineral wealth, agricultural development, population concentration etc. will all become too evident. The areas in the north and north-east of the region comprising parts of Adilabad, Karimnagar, Warangal and Khammam districts receive an annual rainfall of 40"-45" and are covered with dry deciduous forests. Some of these areas are also rich in minerals such as coal, iron ore, limestone etc. These areas are the most sparsely populated areas of the whole region. To the South of this forest region lies the intensive agricultural tract which comprises parts of Nizamabad, Medak, Karimnagar, Warangal, Khammam and Nalgonda districts. This tract has substantial irrigation facilities, both surface and underground, and will also receive extensive irrigation facilities under Pochampad project in the north and Nagarjunasagar left bank canal in the south. This tract is the most densely populated area in the whole of the Telangana region, barring Hyderabad city metropolitan areas. The transport and communication facilities are also relatively more developed in this area compared to the rest of the region and the major railway line connecting Vijayawada to Balharshah traverses across this tract. The annual rainfall in this tract is well over 30". To the south of this intensive agricultural tract lies Hyderabad metropolitan industrial complex which exhibits a high degree of urbanisation and concentration of industry and services. In the south of the Telangana region lies the semi-arid tract covering Mahbubnagar district and parts of Medak, Hyderabad and Nalgonda districts and Jangaon taluk of Warangal district where the rainfall ranges from 23"-30". The forests in this area are mostly of scrub type and the mineral resources are extremely limited. Soil erosion is a major problem of this tract. This area is the most backward in the Telangana region and poses many problems for its development.

In the light of the differences in the resource endowment in different parts of Telangana region, an exercise to identify the homeogenous economic zones within the region applying the factor analysis approach was undertaken. Considering the limitations of the availability of the statistical data, the taluk was taken as the smallest unit for the purpose of this study and 25 indicators, representative of the various sectors of the economy were considered for the analysis. This exercise has indicated that there are four broad zones of development within the Telangana region viz.,

- (1) Urban industrial;
- (2) Forest and mineral;
- (3) Intensive agriculture; and
- (4) Dry farming.

The taluks covered under each of these four zones are as follows:

Sl. No.	Zone	Taluks covered	District.	
I.	Urban Industrial	Hyderabad Urban, Hyderabad West, Hyderabad East.	Hyderabad	
		Warangal	.. Warangal	
		Nizamabad	.. Nizamabad	
II.	Forest & Mineral	Asifabad, Boath, Chinnur, Khanapur, Luxettipet, Sirpur, Utnoor.	Adilabad	
		Manthani	.. Karimnagar	
		Bhadrachalam, Burgampadu, Yellandu, Kothagudem, Nugur, Mulug.	.. Khammam Warangal	
III.	Intensive Agriculture.			
		(a) Canal irrigation.	Banswada, Bodhan	.. Nizamabad
			Huzurabad, Metpalli, Jagtial, Peddapalli.	Karimnagar
			Khammam, Madhira	.. Khammam
			Miryalaguda, Huzurnagar	.. Nalgonda
		(b) Tank & Well irrigation	Medchal	.. Hyderabad
			Karimnagar, Sirsilla	.. Karimnagar
			Armoor	Nizamabad
			Gajwel, Medak, Narsapur, Siddipet.	Medak
			Kamareddy, Yellareddy	.. Nizamabad
	Narsampet, Parkal	.. Warangal		

Sl. No.	Zone	Taluks covered	District.
(c)	Dry farming	Ibrahimpattam, Chevella, Tandur, Vicarabad, Pargi.	Hyderabad
		Atmakur, Achampet, Kalva-kurthi, Kollapur, Nagarkurnool, Shadnagar, Wanaparthy, Mahbubnagar.	Mahbubnagar
		Bhongir, Devarkonda, Nalgonda, Ramannapet, Suryapet	Nalgonda
		Jangaon, Mahbubabad	.. Warangal
		Adilabad, Mudhol, Nirmal	.. Adilabad
		Andole, Narayankhed, Sangareddy, Zaheerabad	Medak
		Madnoor	Nizamabad
		Kodangal, Makthal, Gadwal, Alanpur.	Mahbubnagar

Another exercise was also undertaken to identify the central places in the region on the basis of a study of the existing settlement hierarchy and the availability of social functions in them. These are indicated in a separate Chapter.

The strategy of development of the region is broadly based on a spatial approach. The four zones of development identified on the basis of the factor analysis and the growth pole, growth centres, market-service centres and service centres will together constitute the basic planning framework for the region. While the area development zones facilitate the drawing up of an over-all plan taking into account the intra-regional differences in resource endowment and economic activities, the central places mentioned above would serve as nodes or foci of these development zones for the location of social facilities and infrastructure. The scheme of economic regionalisation implicitly suggests a gross pattern of production specialisation in each development zone of Telangana in terms of lead sectors. These lead sectors are industries in the urban industrial zone, forest and minerals in the forest and mineral zone, irrigated agriculture in the intensive agriculture zone and dry crops in the dry farming zone. These lead sectors

will be given priority for development in the respective zones. This however, does not preclude the development of the potential in any of the other sector in these zones, to the extent feasible.

The broad strategy of development of each sector in Telangana region is as follows:

Agriculture and allied sectors:

Since nearly 70 per cent of the people of the region are dependent on agriculture and allied activities, these are the essential sectors which require immediate strengthening to create more job opportunities and more prosperity in the rural areas. The strategy for the development of agriculture and allied sectors, therefore, consists of the following:

(i) Since irrigation is the most important input for agriculture and since the region has a low percentage of irrigated area, emphasis will be laid on provision of irrigation facilities to the maximum extent possible. The limited available surface irrigation potential under major, medium and minor projects including the spillover Nagarjuna-sagar left bank canal project and Pochampad project stage-I, will be developed by the end of the Vth plan itself or in the early years of the VIth plan, while some new major projects such as Pochampad project stage II, Tungabhadra extension scheme etc., are proposed to be taken up in the sixth plan, by which time the award of the inter-State Water Disputes Tribunal will be available and the detailed investigation of the projects would also be completed.

(ii) It is estimated that the development of the entire surface irrigation potential, excluding the new major projects likely to be taken up as a result of the award of the inter-State Water Disputes Tribunal, would only take the percentage irrigation in the region from the present 20 per cent to about 35 per cent of the cropped area. It is, therefore, essential that simultaneously steps are taken to explore and develop the underground water potential to the maximum extent possible. Detailed hydrogeological surveys to prove the ground-water potential receive a high priority in the plan and these are proposed to be completed in the next 2 or 3 years.

(iii) To conserve the limited water resources of the region, the long term solution lies in the economical management of water for which improved methods of water management, such as lining of canals, localisation of maximum area for irrigated dry crops, growing of short duration crops, multiple cropping etc., should be taken up to the largest possible extent. Research and surveys relating to the most economical use wherever necessary, are given priority in the plan.

(iv) As regards crops, the strategy is to bring about a shift from low value crops to high value crops both under irrigated and dry conditions. A large proportion of the cultivated area in the region is under low income yielding millet crops and this should be reduced, and the area under high income yielding commercial crops such as groundnut, cotton, tobacco etc., should be progressively increased.

The region has a sizeable area under black cotton soil and this should be made use of in growing commercial crops, such as cotton and tobacco much more extensively than now. Development of horticulture and crops such as turmeric, onions, potatoes etc., as localised crops will also form an essential component of the strategy of agricultural development.

(v) The soil conservation programme has to be taken up in a big way both to conserve the top soil as well as to conserve rain water for dry cultivation. The problem of soil erosion is most severe in the dry farming zone and, therefore, this region should receive priority under this programme.

(vi) The dry farming techniques should be developed and adopted on a large scale, especially in those areas where the irrigation resources are low such as the tract in the south-western part of the region.

(vii) It is expected that with the creation of irrigation facilities and with popularising the dry farming techniques, production will pick up substantially. The application of the chemical fertilisers and adoption of improved technology should be accelerated from the present low levels. Accordingly emphasis is laid on research, demonstration and extension which could bring about the necessary technological break through in the long run.

(viii) Animal Husbandry is given special importance (in the Plan) as this sector will provide not only supplemental income to the people but also the essential nutritional supplemental foods. The programmes will be largely oriented towards the upgrading of livestock, development of dairying, poultry and sheep rearing and marketing of these products. These programmes will receive high priority for development in the dry farming zone.

(ix) Though the region has a large number of tanks and reservoirs, most of them are unsuitable for development of fisheries on a commercial scale, except for a few, such as the Nagarjunasagar reservoir, Nizamsagar reservoir etc. Fisheries will have to be developed under the Plan mainly from the point of providing supplemental incomes to the people and also supplemental food. The fisheries in large reservoirs can however be developed on a commercial scale while the other smaller tanks are used for the development of inland fisheries for local consumption.

(x) The region has rich forest resources. The forests in the forest and mineral zone are of high commercial value while the forest areas in the dry farming zone are mostly of scrub type and are of low income yielding. The strategy for the development of the forest in the region, therefore, consists in the optimal exploitation of the forest resources in the forest and mineral zone and taking up adequate afforestation programmes covering commercial species in this zone while in the rest of the region specially in the dry farming zone the programme would consist of developing the forest land for soil conservation, pasture and for supplying fuel woods.

Power :

Power is essential for rapid economic growth. Its importance both for groundwater development as well as for the development of small-scale and large scale industries needs no emphasis. Electricity, besides being considered as a growth generating element, should also have to be considered as a social amenity for improving the quality of life. (In the perspective Plan) therefore, maximum emphasis is given for development of power consumption and for rural electrification. It is proposed that all the villages in the region should be electrified as early as possible before the end of the Sixth Plan. However, in the Fifth Plan, priority will be given for the electrification of those villages which have either a large population or a large number of wells so that the electricity system as a whole would work on economic lines.

Minerals and Industries :

Accelerated industrial development is an essential prerequisite for a sustained high rate of economic growth in the long run. A rapid industrialisation also is essential from the point of view of diverting the surplus population from agriculture and allied activities in the shortest possible time. The region offers good scope for establishing agro-mineral and forest based industries. These possibilities will be fully explored in the perspective Plan. The strategy of development of minerals and industries in the Perspective Plan, therefore, broadly consists of the following:

(i) The region possesses large resources of coal, limestone and iron ore. The exploitation of these minerals is, however not commensurate with the available reserves. The coal available in the region is of a non-cooking type and not directly useful for conventional steel production. The large coal resources available in the region therefore, should be put to best use in producing Thermal Power. Besides, experiments should also be carried up to use them in the manufacture of pre-reduced pellets containing 89 to 95 per cent of iron with the lower grade iron available in the region. Similarly, the possibilities of low temperature carbonisation of these coals should also be explored.

(ii) Mineral such as quartz, dolomites and graphite which are located in the region, but for which no prospecting has been taken up, should be explored quickly and their commercial exploitation expedited.

(iii) A study of the industrial development in the region indicates that the industrial base of Hyderabad city is mostly non-resource based covering general and electrical engineering, chemical and pharmaceuticals. Agro-based manufacturing and processing units are comparatively less important in the metropolitan industrial structure. The growth of industries in the metropolis, therefore does not preempt the growth in the centres of the region, where resources based industries could be developed on a large scale. Considering this position, it is proposed to strengthen and develop the non-resource based

industries in Hyderabad metropolitan industrial complex and developed Warangal, Nizamabad, Khammam, Mahabubnagar, and Karimnagar as large scale agro-based industrial complexes. One centre in or near Nagarjunasagar ayacut and another in or near Pochampad Ayac will also be developed as agro-based industrial complexes. Beside the service centres in the region are proposed to be developed a suitable locations for the establishment of small scale rural industries such as foodgrains processing and extraction of oil depending on the annual resource base of these centres.

(iv) Adequate incentive should be offered in the form of developed sites, concessional supply of water and electricity etc., for attracting large, medium and small industries in the private and central sectors in the region.

Transport and Communications:

The development of transport and communications, especially roads, on a large scale would have to be seen both from the point of view of creating large scale immediate employment for the unemployed and under-employed in the rural areas as well as from the point of opening the backward areas and thereby furthering the economic growth in those areas. In the rural areas of the region about one-third of the villages are more than 5 miles away from the nearest bus-stop and about one-fifth of them have a population of more than 2,000. Nearly 45 per cent of the villages in the region are connected to a main road only by means of foot-paths or cart-tracks. This means that many of the possible service centres are not even near a road. In the settlements below the level of service centres, the situation is worse. In the Perspective Plan, therefore, it is proposed to give priority for improving the road net work with a view to making service centres more accessible to their respective rural hinterlands on the one hand and to connecting them with each other and with the centres of higher order on the other. The bus transport facilities will also be developed further (in the Perspective Plan).

Social Services :

Even if we succeed in providing vast employment opportunities for the poor, they will not be able to buy themselves, with their levels of earning all the essential goods and services which constitute the quality of life. The programme for providing larger employment and incomes to the poorer section of the population will therefore, have to be supplemented by a massive plan for the provision of Social Service facilities such as elementary education, minimum public health facilities, drinking water supply, house-sites for landless labour etc., and slum clearance in the larger towns. (In the Perspective Plan) the social service facilities, therefore, will be given high priority especially those listed above which serve the poorer section of the population.

The zonal strategy of development of the different economic zones within the region will be spelt out taking into account the lead sectors, the sectoral and regional strategies mentioned above and the

inter-zonal linkages. The strategy of development of a district necessarily flows from the zonal strategy. Since the districts as constituted now are mostly administrative units and do not constitute homogeneous economic units, each district may consist of portions of more than one zone. The strategy of development of the district is an integration of the zonal strategy depending upon the number of zones coming within the district.

B. RAYALASEEMA :

Rayalaseema comprises Anantapur, Chittoor, Cuddapah and Kurnool Districts and also the Giddalur and Markapur taluks of Ongole District. With an area of about 28,000 square miles and a population of 8 millions this is a predominantly agricultural region. Agriculture itself is dependent on rainfall with only 10 per cent of the area under assured irrigation sources. Rainfall is low, uneven and uncertain. It is a dry humid area. The major crops are groundnut, millets, cotton and paddy.

Rayalaseema is treated as a division in the natural region of Deccan. It is also treated as a natural economic region for planning in India. It is a distinct physiographic region known as the Rayalaseema plateau.

Nature is unfavourable to the area. While rain-fall, is scanty uneven and uncertain the region is endowed with predominantly red shallow soils. Surface water has been almost exhausted. Ground water potentiality is low. The mineral potential is primarily in terms of lime stone, barytes, asbestos, china clay and low grade iron ore. (The existence of diamond and gold is indicated). The levels for socio-economic development and resource potential are low. On its own, the regions capacity diverting rural population to industrial and urban area is considered low both in the immediate and distant future. This is therefore treated as a "problem region". (Economic Regionalisation of India—Problems and Approaches 1968).

Large scale manufacture accounted for about 1.5 per cent of regional income during the last decade while small scale manufacturing accounted for 4 per cent. The number of establishments registered have declined from 644 in 1957 to 595 in 1968. There has been a marginal increase in the number of workers employed from about 17,000 to about 18,000. The total factory employment in Rayalaseema is only 7 to 8 per cent of the total factory employment in the State. With regard to the Industrial structure, the small units predominate. There are a few mineral-based industries which could be termed as producing a basic goods in this area employing about 1/7th of workers (1969). Capital goods are not manufactured at all in the region. Intermediate goods in terms of chemicals and engineering goods employ less than 30 percent of the labour force. Consumer goods, especially agro based production, account of a major portion of the existing employment. A large percentage of the growth during the period 1962-1969 has been accounted for by transport equipment, repairs and services, metal and agro-based industries.

The major report items of the region are oil seeds. Minerals and mineral products are important followed by vegetables and fruits. Minerals and metals are mainly transported by rail. In 1970, for instance of the total movement, 25 per cent was agricultural products, 60 per cent mineral products including cement and the rest was sugar and vegetable oils which could be categorise as "unmanufactured-products".

The few major centres of activity of the region are mostly situated around the railway lines and all of them fall under the influence the metropolitan centres of Madras, Bangalore, Hyderabad and to some extent Bombay.

Regions:

Broadly Rayalaseema may be divided into a number of regions for purposes of Agriculture and allied activities.

(a) The Tungabhadra low level Canal area covering the western portion of Alur, northern portion of Adoni, parts of Yemmiganur and a small portion of Kurnool taluk. But this project serves patches of lands in number of villages and therefore would not constitute a solution to the area in any substantial way.

(b) The K.C. Canal area flowing from north to south covering parts of Nandikotkur, Atmakur, Allagadda and Koilkuntla, Proddatur, etc., taluks has to be viewed as one Zone for purposes of planning.

(c) The Central Rayalaseema region could be broadly divided into the black soil belt and the red soil belt. The black soil belt generally with Groundnut, Cotton, Korra, Jowar mix dependent mostly on dry farming has only a sprinkling of tank irrigation. The concentration of wells is not very substantial except in patches. This belt covers western portion of Kurnool district, parts of Anantapur district and the western portion of Cuddapah district. There are certain pockets covered by Thungabhadra High level Canal which is under execution and Pulivendla Project which is under contemplation and therefore require a separate treatment. Otherwise the whole zone has to be treated a dry farming zone with predominant black soils.

(d) The other zone constitutes again the Central Rayalaseema area with red soils which have a fairly good concentration of wells and quite a few tanks.

(e) Yet another zone could be the eastern zone of Rayalaseema covering Giddalur, Markapur, Badvel, Sidhout, Rajampet, Kalahasti, etc. This zone has red soils and heavy concentration of wells and tanks and economy is dependent on rainfall only.

(f) Another zone is the southern portion of Rayalaseema covering Madanapalle, Voyalpad, Punganur, Hindupur, etc., where there is a good concentration of tanks and wells. The soils are red except in patches of Kuppam sub-taluk. It has comparatively cool climate therefore, this possibly could have a different strategy.

Sub-Regional Strategies and Area Plans:

In terms of different areas, it is proposed to identify appropriate agricultural strategy and develop the marketing and infrastructural facilities. On the basis of tentative appreciation of the potentialities Rayalaseema has been divided into a number of sub-regions. The various sub-regions demarcated and the primary agricultural strategy may be summarised as follows.

Kurnool District :

Alur Taluk .. ..	.. Cotton.
Adoni Block .. ..	.. Cotton and paddy
Yemmiganur Block .. ..	.. Groundnut, Cotton and paddy.
Pathikonda Taluk. .. ..	.. Groundnut, Cotton and Jowar.
Dhone Taluk .. ..	.. Groundnut, Jowar and Korra.
Kurnool West Region .. ..	.. Paddy and Sugar-cane.
Kurnool East region.	Vegetables, Groundnut & Jowar.
Banganpalli Taluk .. ..	.. Groundnut and Cotton.
Koilkuntla East region .. ..	.. Paddy and Groundnut.
Koilkuntla West region .. ..	.. Groundnut, Cotton, Korra and .. Jowar.
Allagadda East Region	Groundnut and Jowar.
Allagadda West region .. ..	.. Paddy.
Nandyal West region-K.C. Canal area. .. ..	.. Paddy and Groundnut.
Nandyal Dry region .. ..	.. Groundnut, Jowar and Vege- tales.
Nandikotkur West region K.C. Canal area. .. ..	.. Paddy and Groundnut.
Nandikotkur Dry region .. ..	.. Groundnut, Korra & Jowar.
Atmakur sub-Taluk Dry area .. ..	.. Groundnut, Korra and Jowar.
Atmakur sub-Taluk K.C. Canal area	Paddy and Groundnut.
Markapur Taluk .. ..	.. Groundnut, Jowar, Korra and Cotton.
Giddalur Taluk .. ..	.. Paddy Groundnut and Jowar.

Chittoor District:

Chittoor Block	..	.. Paddy and Sugar-cane.
Bangarupalem Block	..	.. Paddy and Sugar-cane
Palamaner Block	..	.. Groundnut, Vegetables and Grapes.
Punganur Block	..	.. Groundnut, Tomatoes, Grapes and Vegetables.
Chowdepalli Block	..	.. Groundnut, Tomatoes Vegetables.
Mandanapalli Block	..	.. Vegetables, Tomatoes, Grapes and Groundnut.
Thamballapalli Block	..	.. Vegetables, Tomatoes, Grapes Groundnut.
Voyalpad Block	..	.. Vegetables, Tomatoes, Grapes and Groundnut.
Pulicherla Block	..	Paddy and Sugarcane.
Chandragiri Block	..	.. Paddy, Sugar-cane, Bananas, Vegetables, Onions and Chillies.
Chinnagottigallu Block	..	.. Grondnut, Vegetables and commercial crops like Onions, Turmeric, Chillies and furits like Bananas.
Kalahasti Block	..	.. Paddy, Vegerables, Sugar-cane and Bananas.
Ti. ottembedu Block	..	.. Paddy Vegetables, Sugar-cane and Bananas.
Satyavedu Block	..	.. Paddy, Vegetables, Sugar-cane and Bananas.
Pitchatur Block	..	.. Paddy, Vegetables, Sugar-cane and Bananas.
Puttur Block	..	.. Paddy Vegetables, Sugar-cane, and Bananas.
Karvetinagar Block	..	.. Paddy and Sugarcane.
Gangadhara Nellore Block	..	.. Paddy, Sugarcane, Vegetables like Chillies, Tomatoes and Brinjals.
Kuppam Block	..	.. Frutis and Vegetables.

Cuddapah District :

Rajampet Taluk	..	..	Banana, Citrus and Commercial crops like Turmeric and onions.
Sidhout Taluk	..	..	Paddy, Jowar, Ragi, Commercial crops like Turmeric, Onions and to some extent Groundnut.
Badvel Taluk (Lower Sagileru Project area)	..	..	Paddy Sugarcane, Banana, Turmeric and Onions.
Badvel (Non-Lower Sagileru Project)	..	..	Paddy, Jowar, Bajra, Ragi, Groundnut and Chillies.
Rayachoti Taluk	..	..	Banana, Citrus and Commercial crops like, Turmeric and Onions.
Cuddapah Taluk (K.C. Chanal)	..	..	Paddy, Turmeric, Sugarcane Chillies, Onions and Groundnut.
Cuddapah Taluk (Wells, spring channels)	..	..	Onions, Groundnut, Turmeric with some extent paddy and Chillies and Vegetables.
Cuddapah Taluk South	..	..	Onions, Chillies, vegetables, Groundnut and cotton.
Kamalapuram Taluk (North Mylavaram).	..	..	Paddy and Sugarcane.
Kamalapuram Taluk (Central Area) (Black soils).	..	..	Groundnut and Cotton.
Southern Portion of Kamalapuram Taluk	..	..	Banana Citrus, Commercial Crops like Turmeric and onins.
Pulivendla (South) Taluk	..	..	Orchards especially citrus and also dry farming.
Pulivendla Taluk (canal Zone)	..	..	Paddy.
Pulivendla (North) Taluk	..	..	Groundnut, Cotton and short duration crops.
Jammalamadugu Taluk	..	..	Groundnut and Cotton mix.
Jammalamadugu Taluk (Tallapreddutur).	..	..	Groundnut, Cotton and vegetables (In villages benefitted by High level canal Paddy, Irrigated Groundnut and cotton).

Jammalamadugu Taluk (Muddanur Zone)	Dry farming techniques.
Jammalamadugu Taluk (K.C. canal Zone)	Paddy and Vegetables.
Jammalamadugu Taluk (Mylavaram Zone)	.. Paddy and Sugarcane.
Proddatur Taluk (K.C. Canal Zone)	Paddy and Sugarcane.
Proddatur Taluk (West) (Dry farming Zone)	.. Dry Farming techniques, Groundnut and cotton mix.
Proddatur Taluk (West)	.. Chillies, Onions, Turmeric and Sugarcane.
<i>Anantapur District :</i>	
Anantapur Taluk. ..	.. Hybrid Millet crops, Groundnut and Cotton.
Urvakonda (Sub-Taluk)	.. Groundnut, Cotton and Fruits.
Rayadrug Taluk. ..	.. Hybrid millet crops and Groundnut.
Tadpatri Taluk ..	.. Hybrid Millet crops, Paddy, fruits and Groundnut.
Kadiri Taluk ..	Cotton and Groundnut.
Dharmavaram Taluk ..	.. Groundnut and Cotton crops.
Penukonda Taluk ..	.. Groundnut and Cotton crops.
Gooty Taluk ..	.. Hybrid Millet crops, Groundnut and Cotton.
Madakasira Taluk ..	.. Cotton and Groundnut.
Hindupur Taluk ..	.. Fruit crops and Groundnut.
Kalyandrug Taluk ..	.. Groundnut.

Phasing :

In terms of phasing, in the first stage emphasis is on continuing research and survey, expansion of irrigation facilities, soil and water conservation and a general re-orientation to the priorities in perspective; in the second stage effort is to build up a full-fledged organisation and provide finances to bring about desired changes in cropping pattern and higher productivity. Road Development as part of the area Development is also proposed as a crash programme. In the third phase consolidation of the gains, scientific water management, introduction of new techniques and storage are emphasised.

Further on the basis of specific studies of mineral resource base, Urban structure and survey of all villages, a hierarchy of settlement pattern is indicated involving special angle. This frame enables linking-up of agriculture, and allied activities into inputs, delivery outputs processing, services and industrial Mineral activity. The levels of centres and their identification have been indicated in a separate chapter.

Sectoral Strategies :

The primary task in the context of regional development is identification of the lead sector, that is, the sector which would determine the overall performance of the economy of the region & for which there is certain unique advantage for the region or atleast a unique advantage is sought to be induced for the region. Accordingly, an attempt was made to delineate the lead sector in the area. In spite of the limitations in terms of poor endowments of natural resources and unfavourable treatment by the monsoons agriculture still continues to be the backbone of the economy and it is not possible in the foreseeable future that there would be a substantial change in the economy from agriculture orientation to any other sector. However, foundation has to be laid for substantial diversification of the economy and shifting to the non-agricultural activities not only as the process of modernisation but also as the specific requirement of the area which is particularly unfavourable for development of agricultural activities. In the perspective upto 1982-84, the effort would, therefore, be to define agriculture as a lead sector, to expand and strengthen the sector, to expand and emphasise to related animal husbandry activity to enable diversification as also implement the aim of social justice to expand mineral activity in order to provide an activity which is independent of vagaries of monsoons and lastly to lay foundations for industrialisation, firstly by emphasising the agro-based and mineral based industries for which the region has unique advantage and secondly by attracting the foot-loose industries which is inevitable if the region has to have a reasonable rate of growth.

In respect of Agriculture, emphasis is on provision of irrigation facilities. Adequate water management to ensure economy of water is essential. However, all these measures would bring about irrigation facilities only to the extent of 27% of the area. The approach is that to the maximum extent, irrigation facilities should be exploited by the end of the Fifth Five Year Plan itself. Research and surveys relating to the most economical use of water constitute the highest priority in the Plan. While immediate benefits may not accrue from these measures, the long-term solution lies in the economical management of water.

In regard to crops, the strategy is to bring about a shift from a low value to high value crops both under irrigated and dry conditions. With regard to crops to be encouraged, groundnut and cotton have been selected as being the primary commodities for development in this area. Firstly, the area has a tradition for cultivating these crops. Secondly, demand projections at the National level have indicated the possibilities of substantial shortfall in the production of these two commodities in future. Further, in a preliminary attempt to disaggregate targets

for different crops in the national perspective, Andhra Pradesh is assigned substantial production targets. Rayalaseema region in Andhra Pradesh holds great promises for these crops. In any case, it is necessary to promote certain amount of regional specialisation even in Andhra Pradesh and the specialisation for this region will have to be in terms of groundnut and cotton.

Development of horticulture and commercial crops like, turmeric, onions, etc. as localised crops will constitute an essential ingredient in the strategy of agricultural development.

Necessarily the dry farming technology forms an important element in the strategy of agricultural development. The package of dry farming practices are proposed and emphasis is laid on selecting drought resistant and increased profit type of crops is laid.

In Agriculture, in general, it is expected that with the creation of irrigational facilities and with certain amount of popularising the dry farming techniques, production will pick up substantially in the Sixth Plan period. Accordingly greatest emphasis is laid down on research, demonstration and extension which could bring about the necessary technological break-through in the long run.

Animal Husbandry is given special importance for this area. Firstly, with regard to nutritional requirements, milk production is given importance. Sheep development, by virtue of the tradition is also given high priority. Emphasis in this sector is on involving all weaker sections, expansion facilities for basic input. Namely fodder and of adequate provision for processing facilities. The development of Animal Husbandry is essentially a slow process. Fisheries are given comparatively low priority in view of the fact that the scope for development of fisheries as an export factor is very limited.

Development of Forests is given high priority. Emphasis is on soil and water conservation rather than on commercial forests. The strategy is to cover maximum area with some sort of tree growth and fodder or animal husbandry development.

With regard to Mineral Development, emphasis is placed on complete utilisation of the mineral resources, since it provides an activity which is independent of the monsoon conditions. While immediately potentially identified minerals are proposed to be exploited, surveys and research are emphasised as holding promises for the future.

In respect of Industries, emphasis is on development of small-scale industries, specially agro-based and partly consumer-based in the first phase; consolidation of the gains in the second phase and maximum emphasis on a take-off towards industrialisation and heavy investments in the public sector in the Sixth Plan. The basic idea is that while agriculture and animal husbandry should be developed to the optimum as primary sectors of development and as sectors benefitting maximum number of people; action should be taken concurrently to identify the industrial potential and programme for industrialisation which is likely to bear fruit in about 10 years in the form of industrialisation of a large scale.

In respect of power, maximum emphasis is given to Rural Electrification by virtue of its special importance in Ground water development in Rayalaseema. In the long run, however, the need to provide an industrial base and encourage consumption of power for industries is envisaged.

In respect of education and health facilities, emphasis is on filling up of a few gaps that have been identified in the availability of services and more important strengthening of the quality of the services. Special attention on higher education is indicated.

Drinking water is identified as the most essential requirement and priority is given to the provision of these facilities immediately.

One of the most important elements in the strategy is assuring better standards of living to all the population. With this end in view, the programme covers all the Scheduled Castes, Scheduled Tribes and other weaker sections with housing facilities and economic avocation.

The over-riding consideration in the whole programme is an attempt to get the area free from the sufferings of recurrent droughts. All the programmes have been oriented to this objective. This objective is introduced in the strategy by expansion of irrigational facilities, development of drought resistant fodder and expansion of mining and industry which will substantially develop towards the later stages. The underlying strata of the logic is the necessity for a technological break-through and hence priority for research and surveys.

In terms of phasing over time, the first stage involves consideration of the gains and re-orientation specially towards the weaker sections, irrigation and drinking water. In the second stage, provision of infrastructure to the optimum in terms of irrigation, transport, communications and power and in the final stage, a break-through towards industrialisation and intensive mineral development, as also the weaker sections development.

C. COASTAL ANDHRA :

This region consists of a belt of varying width between the Eastern Ghats and the Bay of Bengal comprising the eight Coastal districts of Srikakulam, Visakhapatnam, East Godavari, West Godavari, Krishna, Guntur, Ongole and Nellore. According to the 1971 census, the total population of the region is 198.35 lakhs covering an area of 37.33 thousand square miles. The length of Coast line is about 600 miles with seven working ports including the one major port at Visakhapatnam and two intermediate ports at Kakinada and Machilipatnam. Visakhapatnam is the only major port between Calcutta and Madras with an excellent natural Harbour, the hinterland of which stretches into Madhya Pradesh and Orissa.

All the major rivers of the State *viz.*, the Godavari, Krishna, Pennar, Vamsadhara and Nagavali flow through this region. The soils of the region are among the richest obtaining in the State. The

normal annual rainfall of the region averages 1,017 mm., varying from 832 mm., in Guntur district to 1,138 mm., in East Godavari. Added to these natural resources the enterprise of the cultivators has made the region one of the richest agricultural areas in the country.

Agriculture is basic to the economy of the region and the resources available for agricultural development are very high. Green revolution has already become, to a substantial extent, a fact. The basic crop is Paddy followed by Sugar cane and fruits and Vegetables. The other Commercial crop of significance is tobacco. In addition, ground nut, cotton and millets are also grown. The level of productivity is high in respect of all these commodities.

As regards forest wealth, the production of bamboo is most impressive. Bamboo is used by the Andhra Paper Mills at Rajahmundry. In the forest areas of the eastern zone valuable minor forest produce is collected by the tribals.

The region possess sizeable mineral resources such as Mica (Nellore) Manganese (Srikakulam), Copper (Guntur), Limestone, Graphite Clay etc.,

The region, inspite of its agricultural prosperity, has not been able to develop a substantial industrial base so far. Industry and mining contribute only 8.3 per cent of the total income generated in the region. The workers engaged in manufacturing industries are only 1.3 per cent of the total population. Even the existing industrial structure is very much loaded in favour of agro-based industries in the region. The major industrial undertakings of the region are the Andhra Pradesh Paper Mills at Rajahmundry, Government Ceramic Factory in Nellore district and the Hindustan Shipyard at Visakhapatnam. The recent additions to the industrial set-up in the region are Bharat Heavy Plates and Vessels, the Dry Dock Project, the Coramandal Fertilisers and Caltex Refinery-all of them in the around the Visakhapatnam town. Agnigundala Copper Project under erection in Guntur District is a land mark in the mineral development of the area.

As regards Transport and Communications, the region is fairly well provided with a net work of Railways, National Highways and other roads.

To sum up, the resources position and the back-ground of the Coastal Andhra Economy could be expressed as follows :

- (a) Generally high agricultural prosperity ;
- (b) Existence of a substantial agricultural surplus ;
- (c) Substantial demand for consumer goods ;
- (d) Existence of a major port at Visakhapatnam, two minor ports and adequate rail and road facilities ;

- (e) Availability of mineral resources especially manganese in the east, copper-lead complex and limestone in the centre and mica in the southern zone ;
- (f) Existance of a long Coast line with potential for the development of fisheries ; and
- (g) Substantial minor forest produce in the tribal areas.

Strategy :

Detailed work relating to rational regionalisation of the economy of Coastal Andhra is under way. However, even a preliminary study of Coastal Andhra is under way. However, even a preliminary study reveals interesting differentiation in the physio-economic characteristics of the various parts of this region. Firstly, the Srikakulam and Visakhapatnam districts could constitute a particular region which really from part of the broader south-east resource region of the country. Srikakulam district itself throws up three distinct areas namely, the backward coastal area, the under developed tribal area, and the high rain fall high irrigation, densely populated plains area. The industrial and urban structure is weak except for a few mineral based industries. However, this district would have to dovetail its economy into the expanding Visakhapatnam metropoliton complex.

The Visakhapatnam metropoliton complex is likely to develop very rapidly particularly in the context of the proposed steel plant. In this district again, the tribal area, the more developed intensive agricultural zone and backward zone have to be differentiated. A major effort would, however, be to link-up the backward zones to the growing Visakhapatnam complex so that the emerging demand for consumer products of this complex are met from these areas.

The districts of East Godavari and West Godavari may have to be viewed together and the problems of tribal areas, delta areas and upland areas differentiated. The coastal areas is more significant for East Godavari. An integrated area development approach is crucial for tribal areas. The delta area particularly in West Godavari throws up characteristics of poorly developed, and stagnant conditions. Studies in depth to indentify the reasons for semi-stagnant economy are needed. More intensive and supplemental effort towards irrigation facilities is essential. Further, the drainage problem and strengthening of the Godavari barrage are particularly relevant for the delta areas.

In the uplands of East Godavari and West Godavari with the availability of land and fairly dependable rainfall the major trust would be towards improved irrigation sources and better agricultural practices. These areas also need to be opened.

The districts of Guntur and Krishna could be viewed together while Krishna presents the problem of a developed delta, but similar in its economic characteristics to East Godavari and West Godavari, requiring attention to the problem of drainage. The problem of

drainage in certain parts such as Repalle taluk, require close attention and immediate measures. In regard to the uplands, the tradition of more intensive agriculture is evident though much leeway has to be made. In regard to Guntur district it presents the problem on the one hand, of a semi-stagnant delta economy in certain areas and on the other, a rapidly developing Nagarjunasagar ayacut area. Between the two there is also a rich tobacco cultivating area and at the same time, particularly, backward areas requiring intensive dry farming techniques. These have to be differentiated and developed in the context of a growing and strong urban structure.

Ongole district which is recently formed is in many respects similar to the Rayalaseema tract, with its low rain-fall, comparatively low irrigation facilities and higher incidence of drought. The general strategies indicated for Rayalaseema area have to be adopted for this district also with appropriate changes. In regard to Nellore, however, while the same pattern may be applicable, the existence of a long coast line and the Peunur irrigation system would enable the differentiation of this district into three zones.

In terms of sectoral strategies, the following lines of action are indicated for more detailed studies under way which would reveal more definitive lines of action. In the field of agriculture, the effort should be at least in four directions. Firstly, tackling the problem of drainage in delta areas, secondly, ensuring growth in semi stagnant but prosperous delta areas, thirdly more intensive agriculture in upland areas with certain possibilities of irrigation facilities and fourthly, concentrated and sustained efforts with fairly heavy investments in tribal areas and drought affected areas. Concomitant facilities for inputs and processing have to be designed particularly in backward and tribal areas.

The scope for dairying has already been established, and there are immense possibilities for supply of milk for major metropolitan cities in this country. Milk products units hold great promise.

In the field of industrialisation, development of agro-based and demand-based industries spread over a number of centres is not only possible but economical and essential. The major industrial complexes could, however, be developed, firstly in Visakhapatnam, which constitutes the outlet of almost the whole of the south-east region and Guntur-Vijayawada complex. It is also possible to visualise the growth of Rajahmundry-Kakinada belt. The development of minerals and mineral based industries in Visakhapatnam Guntur and Nellore districts can be envisaged. Concurrently with appropriate fisheries development policy sea-food processing industries hold great promise.

In the whole process of industrialisation the crucial role of local resources and local entrepreneurship need to be envisaged in most of the area of this region.

In the field of Transport and Communications it is served fairly well by a net work of roads and railways though some more opening up of the tribal areas and upland areas is necessary. The inland

water ways is comparatively a neglected field in this area. Development of minor ports which has just now been initiated would throw up great opportunities for the economy of this region.

The infrastructure in terms of power is fairly adequate in most of the areas excepting Ongole, Nellore, Srikakulam and parts of Visakhapatnam, while the distribution net work is available the quantum of power that has to be made available should be reckoned.

In regard to social services, except in the backward areas which are evident particularly the tribal areas, the level of availability of social services is significantly high.

III. IDENTIFICATION OF BACKWARD AREAS :

Besides the preparation of regional plans for the three distinct regions of Telangana, Rayalaseema and Coastal Andhra, the identification of different areas in the State for special purposes based on selected criteria related to these purposes has also been done from time to time as follows :—

- (1) In connection with the preparation of special Plans for drought affected areas 75 taluks in the State have been identified as drought affected of which 33 are in the hard core ;
- (2) For purposes of allocation of Community Development Funds, the Community Development Blocks in the State have been classified as advanced, ordinary, backward and tribal ;
- (3) For purpose of certain concessions related to the establishment of industries, the Government of India have indentified certain backward areas based on the recommendations of the Pande Committee ; and
- (4) In connection with the allocation of Plan outlays between the three regions, *viz.*, Telangana, Rayalaseema and Coastal Andhra, it was decided for the Annual plan 1971-72 that for 10 per cent of the total Plan outlay weightage would be given for backward areas. For this purpose, all the districts were ranked by the Planning Commission on the basis of certain criteria prescribed by them.

1. Drought Affected Taluks :

Chronically drought affected taluks have been delineated on the basis of certain criteria which have been prescribed in consultation with the Planning Commission who have stated that they are basically sound. The criteria are as follows :

The chronically drought affected taluks in the State have been indentified on the basis of the minimum average annual rainfall of

30 inches in each taluk for a period of 21 years between 1942-62 as indicated below :

- (i) All taluks where the annual average deficit rainfall was short of the minimum of 30 inches by 3 inches or more for 10 years or more during the period of 21 years, i.e., 1942-62 as chronically drought affected ;
- (ii) All taluks where the annual average deficit rainfall was short of the minimum of 30" by 7" or more for 7 years or more during the period of 21 years i.e., 1942-62 as chronically drought affected ; and
- (iii) All taluks where the Annual average deficit rainfall was short of the minimum of 30" by 7.5" or more for a period of 8 years or more during the period of 21 years i.e., 1942-62 as 'hard core'.

With regard to the drought affected areas priority is given for Hydrological survey. Further, all the Heads of Departments have been instructed to give priority to the schemes under the drought affected areas. Moreover, special programmes like Drought Prone Areas. Programme have been taken up in the drought affected areas. Special grants from the State Government have been given to most of the drought areas.

2. Backward Blocks under Community Development Programme :

The criteria for declaring the Blocks as backward or forward are as follows :—

	Weightage
(a) Per capita land revenue assessed within the block	15
(b) Percentage of irrigated area to cultivated area	26
(c) Percentage of children of the age-group of 6-11 attending schools	10
(d) Literacy-Districtwise	10
(e) Districtwise income	15
(f) Road milage for 100 square miles area within the block	25
Total ..	100

With regard to the blocks delineated as backward etc., the Community Development Funds are distributed on a varying per

capita basis depending on the level of development of each block as shown below :

			Rs. per head in the block
(a) Advanced Blocks	..	..	$\frac{3}{4}x$
(b) Ordinary Blocks	..	..	x
(c) Backward Blocks	..	..	$1\frac{1}{4}x$
(d) Tribal Blocks	..	..	2x

3. Backward districts for Industrial concessions :

The following districts have been declared as industrially backward for concessions to be offered by the Financial Institution :

Anantapur, Nellore, Chittoor, Cuddapah, Kurnool, Ongole, Sri-kakulam, Khammam, Nalgonda, Karimnagar, Madak, Mahaboobnagar, Nizamabad and Warangal.

It is expected that concessions relating to rate of interest, extension of initial moratorium in the repayment of loans, longer amortisation period for loans, participation in risk capital, reduction in the underwriting commission, reduction in commitment charges, consultants charges and certain other concessions are expected to flow to these districts. Further, the following tracts have been approved to qualify for out-right grant and subsidy by the Centre amounting to 1/10th of the capital investment of new units having fixed capital investment of not more than Rs. 50 lakhs in the area. The tract from the Rayalaseema region comprises blocks of Chandragiri from the district of Chittoor, Proddatur, Kamalapuram, Cuddapah, Pulivendla, Rajampet, Kodur ad Sidhout from the district of Cuddapah Singanamala, Tadipatri and Gooti from the district of Anantapur, Kurnool and Dhone from the district of Kurnool. The tract also includes the Municipalities of Tirupathi, Proddatur, Cuddapah, Anantapur, Tadpatri, Guntakal and Kurnool. The tract from the Telangana region comprises blocks of Siddipet from the district of Medak, Peddapalli, Sultanabad, Karimnagar and Huzurabad from the district of Karimnagar, Hanamankonda, Narasampet and Mahabubabad from the district of Warangal, Khammam, and Tirumalapalem from the district Khammam, Suryapet, Nalgonda, Mungodu and Nakrikal from the district of Nalgonda and Kalwakurthy and Amangal from the district of Mahbubnagar. The Municipal towns falling within the above areas would also be entitled to the Central subsidy of 10 percent. Recently, however, the subsidy has been increased to 15% and proposals for increasing the areas eligible for these concessions are pending finalisation. The State Government on its part is taking steps to create necessary infrastructure in the various growth centres identified in the tract, provide certain incentives and get number of feasibility reports prepared with the active co-operation of various promotional undertakings.

4. *Formula for Regional Plan Allocation :*

In connection with the determination of the fair share of Telangana in the developmental outlays, it was agreed during the discussions that the Chief Minister had with the Union Minister for Planning and the Chairman, Regional Committee in May, 1971 that weightage should be given for backward areas the extent of 10 per cent of the Plan outlay on the basis of the ratio of the population in such areas in each region. The weightage so determined was 5 : 3 : 2 for three regions of Telangana, Rayalaseema and Coastal Andhra. The Plan outlay for 1971-72 were, therefore, allocated to the three regions to the extent of 90 per cent on the basis of the population of each region according to the 1971 Census and the balance of 10 per cent was allocated between the three regions in the ratio of 5 : 3 : 2 mentioned above. Since no final decision was taken regarding Fourth Plan outlays this formula was continued to be adopted for subsequent years of Fourth Plan also.

Criteria for backwardness :

It will be seen that in all the four cases mentioned above the criteria for identification of certain areas have been selected with reference to the purpose for which these areas had to be identified. The Planning Commission have, however, been suggesting for some time now that certain backward areas should be identified, so that special attention to them could be ensured in the matter of developmental outlays, both within the State Plan and if necessary at the all India level by special assistance being earmarked for such areas. Such an identification would involve a decision in regard to (a) the unit of identification and (b) the criteria taken into account for evolving a compendious index for identification of such areas. In regard to the unit, the Planning Commission had suggested that the district should be adopted for this purpose. We had however taken the view that for purposes of special attention being paid within the State Plan and for identification at the State level the Block or the Taluk would be a more appropriate unit than the district. The Planning Commission suggested the ranking of districts on the basis of data on 19 indicators of development. For ranking, the districts are arranged in a descending order according to the level of development in respect of each indicator in such a manner that the most developed district occupies the first rank or place and least developed district occupies the last rank or place. The ranking of the districts as per the sum of all ranks for the 19 indicators of development give the overall ranking of the districts. The districts with small sum of the ranks will be forward ones while the districts with large sum of ranks will be backward ones. In this method two points have not been clarified. Firstly, if some districts alone are to be identified as backward, it has not been indicated at what level the line has to be drawn. Secondly, what weightage should be given to different indicators having regard to their relative importance has not been specified. However, while raising these issues the State Government prepared the information relating to the indicators of development as suggested by the Planning Commission taking the district as a unit.

Since as mentioned earlier the taluk is a more relevant unit for identification of backward areas than the State level an exercise was

done on a taluk-wise basis. It was found that some of the 19 indicators would not be relevant at the taluk level. Further, while no weightage has been suggested by the Planning Commission for any of these indicators, the very fact that the sum of their weightages was taken implies that they are assigned equal weightages. The number of indicators selected in relation to different sectors were such that some sectors were thereby getting greater weightage than others. For instance, there were 8 indicators relating to education and literacy, whereas there were only 6 indicators relating to agricultural production. Therefore, an exercise was done selecting the following 7 out of these indicators and ranking the taluks on this basis :

- (1) Net area sown per agricultural workers ,
- (2) Percentage of agricultural workers to total workers ,
- (3) Normal rainfall ,
- (4) percentage of gross irrigated areas to gross sown area ,
- (5) Number of workers per lakh population in registered factories ,
- (6) percentage of literates to total population ,
- (7) Number of hospital beds per lakh population.

These exercises have all been reported to the planning Commission for their advice and guidance.

It will be seen that in all the above approaches an attempt has been made to evolve a compendious index for identifying backward areas.

Yet another approach to the whole problem however would be to identify the areas which are backward in terms of the desirable levels of development with reference to a particular activity or sector. The allocation of outlay in that particular sector could then be approached as between different areas taking into account the differences in the levels of development in regard to that activity. The whole concept of 'Minimum Needs Programme' and its allocation as between different areas taking the district generally as a unit is based on this approach in respect of certain items of public consumption. Similarly areas that are backward in economic infrastructure and are, therefore, economically under developed whether they also lead the social infrastructure or not, could also be identified on the basis of their criteria . Any rational Area Planning approach would have to take in to account both these aspects so that comprehensive plans could be formulated for different areas based on their existing levels of developments and gap in the infrastructure.

The Planning Commission suggested that ranking of districts on the basis of data on 19 indicators of development. For ranking the districts are arranged in the descending order according to the level of development in respect of each indicator in such a manner that the most developed district occupies the first rank or place and the least developed district occupies the last rank or place.

In this method two points have not been clarified firstly if some-districts above are to be indentified as backward it has not been indicated at that level the line has to be prawn.

Approach to regional development :

Here some of the implications of the national approach to the Fourth Five Year Plan in terms of an area approach to regional development need to be mentioned. Firstly, there is a deliberate policy of tackling un-employment and under-employment on a large scale by providing employment opportunities involving variety of activities and identification of a series of weaker sections. In this approach the basic problem of regional imbalances in terms of levels of income is taken care of to a substantial extent. The major problem would therefore, be identification of permanent assets relevant to the area concerned so that appropriate employment oriented schemes could be taken up. Even in the selection of these capital assets to be created and of the evolving institutional arrangements for exploitation of these capital assets, it has to be ensured that benefits accrue to area and to the more vulnerable sections of the people. The logical step would then be to take up follow up measures for exploiting to the optimum the capital assets created.

Secondly the minimum needs programme has been emphasised involving essential items such as elementary education medical and public health, rural water supply, drinking water, rural electrification etc., If these amenities are provided to an acceptable level implying making available a particular level of public consumption in all the areas, one of the important sources of regional imbalance would be removed. A well thought out programme combining employment opportunities and minimum needs should normally result in relieving rural poverty and thus reducing the urban poverty which is essentially an over-flow of the rural misery. The State Plan will thus have to be based on a carefully co-ordinated approach between a programme of minimum needs and a programme of creation of employment opportunities on the basis of identified strategies to develop appropriate activities and the necessary capital assets for different areas. The whole problem of the development of the back ward area has therefore to be viewed as part of more general one of rational distribution sources as between different sectors and as between different areas for which there should be some sort of simultaneous optimisation through iterative processes.

In terms of the special dimension, this would involve an area approach, consisting of

- (a) a study of the source base ,
- (b) delineation of the lead sector,
- (c) location of a service centre to provide for a minimum level of infrastutrural facilities and service facilities ,
- (d) provision for a heirarchy of functionally linked settlements for rapid growth. Adequate attention will have to

be paid to the internal land use pattern of all the centres particularly higher level centres ,

- (e) and lastly ensuring of decisions on location in regard to each sector based on a meaningful special order of development in the light of the considerations mentioned.

In operational terms therefore, the following lines of action are called for :

- (a) a preliminary identification of resources potential and economic analysis of the state of economy of the various areas in State including zonalisation which has already been done in this State.
- (b) an indication of the strategies for development of different areas in the State. The resource inventory had already enabled a tentative frame work. Sectoral approaches have also highlighted some of the more important elements in the regional context. A more detailed study of these aspects is perhaps called for particularly at the working group level in the State which can profitably be disaggregated at later stage to smaller regions.
- (c) identification of a series of service centres and higher level centres to ensure provision of minimum needs as also of the infrastructure for development in a planned way which has been described in greater detail elsewhere.

II DISTRICT PROFILES

In Andhra Pradesh there are four distinct levels which can be identified for purposes of meaningful planning and evaluation of regional development Strategies.

These are ,

- (a) Broad socio-economic regions already given, namely Rayalaseema, Telangana and Coastal Andhra;
- (b) Economic sub-regions within each of these three regions based on a commonality of resource endowment and infrastructure facilities; this is particularly so of Telangana, and Coastal Andhra where there are sub-regions of widely differing resource endowment;
- (c) districts within each of these regions, the district in many cases is in itself a fairly homogeneous zone and has the advantage of being the unit for which statistics are available; hence this is a level which can normally be accepted as a unit for planning;
- (d) sub-regions within a district particularly where soil type of irrigation facilities sharply divide the district unit.

A brief description of (a) and (b) above has been given earlier. From the operational point of view however, the third level, viz., the District assumes great importance because of its coincidence with an existing administrative unit which has by now acquired a long tradition of its own and has, all the necessary infrastructure. Panchayati Raj was given to this area unit an institutional form in the shape of the Zilla Parishad which has already become an important administrative and political institution. No doubt, the more basic unit in this regard is the Panchayat Samithi, however, it is not always a viable unit for planning nor is the administrative infrastructure of the requisite level of competence always available at this level. Therefore, the more rational and viable unit for planning would be the district through for the execution of the plan it could be the block in several cases. In a few cases, particularly where large projects like Nagarjunasagar or the Krishna-Godavari delta systems cover only a part of the district, the district would have to be considered as consisting of two distinct sub-regions; but in most other cases the district would be a single rational unit for planning and it also has the administrative infrastructure of the requisite competence for this purpose. Whether for the same reasons the district should be adopted as the unit for identification of backward areas or whether it should be a smaller unit such as a Block or a larger unit as a region is a question that has yet to be decided. Whatever

the unit for purposes of identification, the fact will remain that different such units will be relevant for different purposes and that a compendious approach may not always be either feasible or necessary.

However, for a meaningful regional development effort, district planning would be essential whatever the unit adopted for purposes of identification of Backward areas. As such, it would, therefore, be useful to understand the profile of the district. The position of the districts with reference to various indicators of development is therefore presented here in the tables enclosed. The data has been compiled with reference to the year for which the latest and dependable data are available.

In addition, with reference to each district, a profile has been given which will help appreciate the varieties of the problems that are involved in different districts and as between the different areas within the district. The detailing of the strategies however, has not been done here since it forms part of the overall strategies indicated in more detailed exercise relating to the preparations of regional prospective plans.

*Indicators of Development, by Districts.**Demography.*

Sl.No.	District.	Density of population per sq. km. 1971	Percentage of urban population (1971)
(1)	(2)	(3)	(4)
1.	Srikakulam	266 (5)	10.65 (18)
2.	Visakhapatnam	204 (7)	22.30 (4)
3.	East Godavari	282 (4)	19.23 (6)
4.	West Godavari	305 (2)	17.71 (8)
5.	Krishna	286 (3)	28.27 (2)
6.	Guntur	250 (6)	24.98 (3)
7.	Prakasam	109 (16)	11.07 (16)
8.	Nellore	123 (14)	15.77 (11)
9.	Kurnool	105 (17.5)	20.30 (5)
10.	Anantapur	111 (15)	17.77 (7)
11.	Cuddapah	103 (19)	14.18 (12)
12.	Chittoor	145 (11)	13.45 (14)
13.	Hyderabad	362 (1)	65.88 (1)
14.	Nizamabad	165 (9)	15.94 (9)
15.	Medak	152 (10)	8.51 (20)
16.	Mahbubnagar	105 (17.5)	8.97 (19)
17.	Nalgonda	128 (13)	6.69 (21)
18.	Warangal	144 (12)	13.43 (15)
19.	Khammam	86 (20)	13.59 (13)
20.	Karimnagar	166 (8)	10.72 (17)
21.	Adilabad	80 (21)	15.92 (10)
ANDHRA PRADESH		157	19.31

Note.—Figures in brackets indicate the rank of the district.

Agriculture and allied Programmes.

Sl.No.	Name of the district.	Cultivable area per agricultural worker (hectares) 1971	Net area sown per agricultural worker (hectares) 1971	Percentage of gross irrigated area to gross sown area 70-71 1970-71	Percentage of area sown more than once to net area sown 1970-71	Nitrogenous fertilisers distributed (000 M.Tonnes 1970-71.	Per Capita (Rural population) gross value output (Agrl.).
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Srikakulam ..	0.69 (21)	0.59 (19)	46.0 (6)	17.0 (8)	28.9 (12)	189.98 (12)
2.	Visakhapatnam ..	0.72 (20)	0.56 (20)	36.3 (9)	18.1 (7)	28.1 (15)	175.93 (15)
3.	East Godavari ..	0.76 (18)	0.54 (21)	63.0 (3)	33.3 (1)	65.0 (6)	195.71 (11)
4.	West Godavari ..	0.74 (19)	0.60 (18)	79.5 (1)	29.6 (4)	95.4 (2)	356.13 (1)
5.	Krishna ..	0.95 (17)	0.79 (14)	58.7 (4)	30.7 (5)	80.9 (3)	336.83 (3)
6.	Guntur ..	0.82 (15.5)	0.88 (12)	46.8 (5)	33.2 (2)	112.16 (1)	323.95 (4)
7.	Prakasam ..	1.59 (6)	1.07 (7)	20.6 (14)	8.4 (14)	67.50 (5)	228.83 (8)
8.	Nellore ..	1.16 (18)	1.70 (16)	64.7 (2)	10.8 (12)	31.2 (10)	183.22 (14)
9.	Kurnool ..	1.96 (2)	1.64 (1)	12.3 (20)	9.2 (15)	57.5 (7)	284.66 (6)
10.	Anantapur ..	1.57 (1)	1.45 (4)	14.2 (18)	1.7 (21)	15.1 (20)	215.87 (9)
11.	Cuddapah ..	1.44 (7)	0.95 (9)	31.2 (10)	7.5 (15)	27.6 (26)	250.74 (7)
12.	Chittoor ..	0.32 (15.5)	0.65 (17)	30.9 (8)	14.1 (9)	28.7 (14)	343.32 (2)
13.	Hyderabad ..	1.41 (8)	1.09 (6)	16.4 (17)	3.6 (12)	28.8 (13)	159.58 (20)

14.	Nizamabad	..	..	1.11 (14)	0.78 (13)	44.8 (7)	13.3 (10)	80.8 (4)	272.53 (5)
15.	Medak	..	..	1.38 (10)	0.93 (10)	21.8 (15)	6.7 (16)	20.5 (19)	160.76 (19)
16.	Mahabubnagar	..	..	1.73 (3)	1.48 (2)	12.5 (19)	3.5 (20)	29.0 (11)	188.4 (13)
17.	Nalgonda	..	..	1.74 (4.5)	1.15 (5)	24.9 (14)	25.9 (5)	25.7 (17)	195.78 (10)
18.	Warangal	..	..	1.28 (11)	0.88 (11)	28.8 (12)	19.7 (4)	40.2 (9)	173.22 (16)
19.	Khammam	..	..	1.36 (9)	1.06 (8)	19.3 (16)	6.1 (17)	23.0 (18)	167.77 (17)
20.	Karimnagar	..	..	1.14 (12)	0.81 (13)	30.1 (11)	11.4 (11)	46.6 (8)	163.79 (18)
21.	Adilabad	..	..	1.74 (4.5)	1.49 (3)	6.7 (21)	5.7 (18)	3.5 (21)	147.38 (21)
ANDHRA PRADESH				..	1.23	0.98	31.6	13.7	1,041.1	222.98

* Data for Prakasam District is arrived at by reallocating the figures from Guntur, Nellore and Kurnool districts.

Note.—Figures in brackets indicate rank of the district.

Power and Industries.

Sl.No.	District.	Percentage of towns and villages electrified 31-3-1972	Per capita consumption of electricity (K.W.H.) 1971-72	Industrial establishment using electricity March 1972 (Nos.)	Number of factory workers per lakh population 1971-72
(1)	(2)	(3)	(4)	(5)	(6)
1.	Srikakulam	.. 14.4 (20)	73.1 (4)	801 (15)	256 (14)
2.	Visakhapatnam	.. 12.0 (21)	111.1 (2)	1,253 (7)	760 (4)
3.	East Godavari	.. 45.8 (9)	59.0 (7)	2,174 (2)	599 (6)
4.	West Godavari	.. 67.2 (1)	61.9 (6)	1315 (6)	676 (5)
5.	Krishna ..	.. 65.8 (2)	50.5 (10)	2,082 (3)	511 (9)
6.	Guntur ..	.. 52.4 (5)	51.1 (9)	1,995 (4)	1,116 (2)
7.	Prakasam	.. 30.4 (15.5)	N.A. (8)	N.A. (6)	879 (3)
8.	Nellore ..	.. 39.3 (13)	50.4 (11)	1,081 (9)	232 (15)
9.	Kurnool ..	.. 52.5 (4)	70.2 (5)	1,649 (5)	455 (10)
10.	Anantapur	.. 53.5 (3)	37.2 (13)	1,113 (8)	150 (18)
11.	Cuddapah	.. 47.1 (7)	29.4 (15)	662 (18)	109 (20)
12.	Chittoor ..	.. 43.1 (11)	52.3 (8)	1,099 (10)	156 (17)
13.	Hyderabad	.. 46.4 (8)	129.0 (1)	3,861 (1)	1,531 (1)
14.	Nizamabad	.. 35.7 (14)	24.7 (16)	937 (12)	521 (9)
15.	Medak ..	.. 30.4 (15.5)	34.4 (14)	861 (14)	374 (12)
16.	Mahabubnagar	.. 27.8 (17)	15.0 (19)	957 (11)	529 (7)
17.	Nalgonda ..	.. 41.5 (12)	22.4 (18)	790 (16)	46 (21)
18.	Warangal ..	.. 45.1 (10)	22.9 (17)	891 (13)	308 (13)
19.	Khammam	.. 24.6 (18)	12.3 (20)	412 (20)	175 (16)
20.	Karimnagar	.. 50.1 (6)	47.2 (12)	730 (17)	116 (19)
21.	Adilabad ..	.. 22.6 (19)	76.1 (3)	630 (19)	451 (11)
ANDHRA PRADESH		.. 34.7	53.6	25,213	501

* The average of the ranks for Guntur, Nellore and Kurnool is adopted as the rank for Prakasam district in the absence of any other data.

Note : Figures in brackets indicate rank of the district .

Transport and Communications.

Sl.No.	District.	Length of surfaced Road per 100 sq.kms. 1971-72	Percentage of villages having all weather roads.	Number of commercial vehicles on road 1971-72
(1)	(2)	(3)	(4)	(5)
1.	Srikakulam	10.1 (2)	39.8 (11)	649 (16)
2.	Visakhapatnam	7.4 (7)	31.5 (13)	1,455 (7)
3.	East Godavari	9.6 (4)	59.1 (4)	1,694 (4)
4.	West Godavari	12.4 (1)	77.8 (1)	1,294 (8)
5.	Krishna	9.8 (3)	65.1 (3)	3,607 (2)
6.	Guntur	8.6 (5)	68.7 (2)	2,274 (3)
7.	Prakasam	5.5 (14)	53.2 (5)	868 (13)
8.	Nellore	6.6 (9.5)	46.0 (7)	1,534 (6)
9.	Kurnool	6.3 (13)	40.3 (10)	1,165 (9)
10.	Anantapur	6.4 (11)	42.7 (9)	780 (14)
11.	Cuddapah	6.6 (9.5)	50.6 (6)	1,013 (12)
12.	Chittoor	8.4 (6)	43.4 (8)	1,636 (5)
13.	Hyderabad	3.1 (19.5)	29.0 (15)	7,667 (1)
14.	Nizamabad	7.0 (8)	38.0 (12)	1,157 (10)
15.	Medak	5.6 (18)	22.6 (16)	220 (21)
16.	Mahabubnagar	3.3 (18)	22.4 (17.5)	534 (17)
17.	Nalgonda	4.6 (15)	21.5 (19)	1,113 (11)
18.	Warangal	2.7 (21)	20.1 (20)	745 (15)
19.	Khammam	3.1 (19.5)	39.6 (14)	481 (19)
20.	Karimnagar	4.0 (16)	22.4 (17.5)	447 (18)
21.	Adilabad	3.5 (17)	14.2 (21)	407 (20)
ANDHRA PRADESH		6.3	87.7	29,794

Note: Figures in brackets indicate the rank of the district.

Social Services

Sl.No.	District.	Percentage of literates (1971)		Percentage of school going children (1967-68)				No. of seats per million population for Technical Training 1972-73.		Hospital beds per lakh of population
		Men.	Women.	Age group 6-11		Age group 11-14		Crafts men level	Diploma level	
				Boys.	Girls.	Boys	Girls			
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		(9)	(10)	(11)
1.	Srikakulam ..	27.67 (13)	9.58 (14)	101 (5)	72 (7.5)	23 (15.5)	6 (16)	121 (16)	45 (15)	19 (20)
2.	Visakhapatnam ..	29.54 (12)	12.94 (9)	81 (12)	54 (12)	26 (11)	9 (11.5)	265 (5)	56 (6)	80 (2)
3.	East Godavari ..	37.31 (5)	24.34 (4)	94 (8.5)	77 (5.5)	28 (10)	13 (5.5)	207 (10)	132 (4)	42 (8)
4.	West Godavari ..	40.45 (3)	28.34 (3)	108 (3)	8 (1.5)	29 (8.5)	15 (4)	131 (14.5)	74 (7.5)	27 (16)
5.	Krishna ..	41.72 (2)	38.38 (2)	114 (2)	63 (3)	63 (1)	30 (1)	303 (3.5)	59 (11.5)	34 (12)
6.	Guntur ..	39.41 (4)	21.81 (5)	119 (1)	93 (1.5)	41 (2)	19 (3)	101 (18)	92 (5)	51 (6.5)
7.	Prakasam ..	33.15 (11)	13.08 (8)	N.A.(5) *	N.A. (5) *	N.A. (4) *	N.A. (6) *	Nil (21)	Nil (19)	15 (21)
8.	Nellore ..	35.24 (8)	18.29 (6)	98 (6)	77 (5.5)	35 (4)	13 (5.5)	335 (8)	149 (2)	53 (5)
9.	Kurnool ..	34.05 (10)	12.75 (10)	94 (8.5)	72 (7.5)	30 (7)	10 (10)	227 (8.5)	58 (13)	60 (3)
10.	Anantapur ..	34.66 (9)	12.42 (12)	87 (10)	63 (10)	23 (12.5)	9 (11.5)	227 (8.5)	55 (14)	37 (11)
11.	Cuddapah ..	36.22 (6)	12.74 (11)	106 (4)	80 (4)	24 (14)	11 (9)	74 (20)	74 (7.5)	32 (13.5)

12. Chittoor	..	35.95 (7)	14.41 (7)	96 (7)	65 (9)	31 (5.5)	12 (7.5)	105 (17)	50 (11.5)	51 (6.5)
13. Hyderabad	..	49.90 (1)	30.18 (1)	84 (11)	62 (11)	39 (3)	26 (2)	485 (1)	283 (1)	195 (1)
14. Nizamabad	..	26.14 (15)	8.23 (17)	68 (14.5)	23 (19)	22 (18)	4 (19)	303 (5.5)	87 (6)	39 (9)
15. Medak	..	25.20 (16)	6.88 (10)	68 (14.5)	27 (16)	22 (18)	4 (19)	191 (11)	Nil (19)	25 (18)
16. Mahboobnagar	..	23.29 (20)	7.72 (10)	64 (17)	32 (14)	22 (8)	6 (16)	70 (10)	140 (3)	26 (17)
17. Nalgonda	..	25.05 (18)	8.76 (16)	52 (20)	26 (17)	29 (8.5)	12 (7.5)	186 (12)	Nil (19)	32 (13.5)
18. Warangal	..	26.37 (14)	9.47 (15)	72 (13)	30 (15)	25 (12.5)	7 (14)	231 (7)	62 (10)	59 (4)
19. Khammam	..	25.14 (17)	11.57 (13)	65 (16)	44 (13)	31 (5.5)	8 (13)	235 (6)	7 (17)	28 (15)
20. Karimnagar	..	23.85 (19)	6.64 (20)	60 (10)	21 (20)	23 (25.5)	6 (16)	142 (13)	Nil (19)	22 (19)
21. Adilabad	..	21.66 (21)	6.45 (21)	59 (19)	24 (18)	20 (20)	4 (19)	131 (14.5)	Nil (19)	38 (10)
ANDHRA PRADESH	..	33.18	15.75	88	60	26	12	98	75	49

* The average of the ranks for Guntur, Nellore and Kurnool is adopted as the rank for Prakasam district in the absence of any other data.

Note.—Figures in brackets indicate the rank of the district.

1. SRIKAKULAM

Srikakulam district is the northern-most part of Andhra Pradesh and lies between 18°20' and 19° 10' of the northern latitude and 83° 5' and 84° 50' of the eastern longitude. It was carved out of Visakhapatnam district and constituted into a separate district in the year 1950. It is bounded on the north and west by Koraput and Ganjam districts of Orissa State, on the east by the Bay of Bengal and on the south by Visakhapatnam district. The district may be divided into two natural regions, namely, the hilly region called the Agency area in the north-western part of the district and the plains portion which is mostly sandy on account of its proximity to the sea. The Eastern Ghats run roughly parallel to the sea from the north-east to the south-west and, therefore, this district drains from the Ghats to the sea.

The Chief rivers in the district are Nagavali, Vamsadhara, Suvarnamukhi, Vegavathi, Mahendratana, Gomukhi, Champavathi, Bahuda and Kumbikotagedda. The Vamsadhara river rises in the Eastern Ghats in Orissa State and enters this district in Pathapatnam taluk and flows between Narasannapet and Srikakulam taluks and finally falls into the Bay of Bengal. The Nagavalli also rises in the Eastern Ghats in Orissa State and enters the district in Parvathipuram taluk. After flowing through Palakonda taluk, the river forms the boundary between Srikakulam and Cheepurupalle taluks. In the lower reaches it is called Langulya. The Suvarnamukhi river which also rises in the Eastern Ghats enters the district in the north-western part of Salur taluk and after flowing across Salur and Bobbili taluks joins Nagavali at Sangam village in Palakonda taluk. River Vegavathi rising in Pachipenta hills of Salur taluk flows from east to west and joins Suvarnamukhi river at Patuvaradhanam village of Bobbili taluk. Gomukhi river after flowing across Salur taluk joins Suvarnamukhi river at Sirlam village of Salur taluk. Mahendratana a tributary of Vamsadhara rises in Eastern Ghats and after flowing through Sompetta and Pathapatnam taluks joins Vamsadhara river at Komanapalle village in Pathapatnam taluk. River Bahuda arising in the Eastern Ghats in Orissa enters this district at Sasanam village of Ichapuram taluk and after flowing across this taluk falls into the Bay of Bengal. River Champavati after flowing across Salur taluk enters into Vizianagaram taluk of Visakhapatnam district. The Nagavali assisted by its tributaries provides irrigation for major parts of Palakonda and Srikakulam taluks and to some extent of Parvathipuram taluk. The Vamsadhara irrigates large extents in Pathapatnam and Srikakulam taluks. Bahuda river irrigates considerable extents in Ichapuram taluk.

The district occupies an area of 9,748 sq. km. with a density of population of 266 per Sq. Km. The total population of the district is

25.90 Lakhs of which 23.14 lakhs is rural and 2.76 lakhs is urban. The percentage of rural population in the district is 89.35 while that of urban population is 10.65. The district has more number of females. The number of females is 1,025 for every 1,000 males. The Scheduled Castes population in the district forms 9.21% of the total population while the Scheduled Tribes account for 8.20% against the State's average of 3.81%. This is one of the three districts which has a large percentage of Scheduled Tribes population in the State. Of the 224 urban areas in the State, 16 are located in this district. The district has 2,865 inhabited villages and 250 uninhabited villages. Of the total population, 42.7% are workers and 57.3% are non-workers. Of the workers 38.7% are cultivators, 37.8% are agricultural labourers and 23.5% are other workers.

The climate of the district varies considerably in the different parts of the district. April to June are the warmest months. The climate is moderate in Ichapuram, Sompeta and Srikakulam taluks. In other taluks the summer is hot and winter is cold. The coastal taluks have a humid atmosphere. The district has a normal annual rain-fall of 1,117 mm., the second largest rain-fall in Andhra Pradesh. The bulk of the rain-fall is received during the south-west monsoon period, *i. e.*, between June to September. The district also receives its rain-fall through the north-east monsoon during October to December and during the hot-weather period of March to May.

The pre-dominant soils in this district are sandy loam, red loam soils and black cotton soils. 1,376 villages have pre-dominantly sandy loams accounting for 43% of the villages while 951 villages forming 30% of the total number have red loam soils. 826 villages accounting for 26% of the total number of villages have black-cotton soil.

The principal mineral resources of the district are Manganese, graphite and mica. Manganese ore is being mined in the district for over a century. Most of the important deposits are situated in Cheepurupalle taluk. Next in importance are the deposits in Bobbili and Salur taluks. Some of the areas in the western and southern part of Salur taluk have been prospected in recent years and since the ore is of poor quality and high in phosphorus, the deposits are not being worked at present. Graphite is known to occur but would need further study and exploitation. Mica occurs at a few places in the district. Prospecting has been carried out in various parts of the district but no economic deposits have been located. The mica is of ruby quality but mostly crushed and spotted.

Forests occupy 15.6% of the geographical area in the district. The forests exhibit a variety of local changes in quality, composition and density. Sal-forest occurs in about a dozen scattered patches in the northern portion of the Palakonda range near the Ganjam frontier. Pole forests are met with in Chimnagora and portions of Burnakonda reserves of Palakonda range. The growth varies in density and quality according to the nature of the soil. Fuel forests which cover most of the district lie at the foot of the hills and lower slopes. Bamboo forests exist in all the ranges. There is not natural growth of teak in this district except in some old plantations raised during the Estate regime in the Pathapatnam range.

The district is administered through 11 taluks and 24 Community Development Blocks. There are three Tribal Development Blocks in this district. While three blocks have been classified as advanced blocks, other have been classified as ordinary blocks. None of the blocks in the district is a backward block. There is no chronically drought affected taluk in the district.

The cropped area in the district forms 60.2% of the total geographical area. The percentage of irrigated area to the cropped area is 46. About $\frac{1}{4}$ of the area is irrigated through canals. Considerable area are also irrigated through tanks in this district. The area irrigated by wells is insignificant. 73 % of the cropped area is under food-crops while 27% is under non-food crops. Paddy is the most important food-crop in the district accounting for about 47% of the cropped area. Besides paddy, pulses and ragi constitute the other important food-crops. Among the non-food crops, groundnut is the most important. Jute is also grown in considerable areas in this district. On account of good soils and fairly good rain-fall the yield rates in this district are comparably good. In view of the coast line, there is a considerable number of people engaged in fishing. The coastal villages where fishermen predominate are very backward economically and socially.

There are 231 registered factories in the district providing employment to about 7,000 workers per day. Of the factories, rice mills, Jute mi'ls, oil mills, cashew processing units, saw mills and machinery manufacturing units are the most important ones.

Only 482 villages and towns in this district are electrified providing electricity to 40.9% of the total population. This district accounts for the poorest coverage of population with electricity in the State and is the second lowest in the State in regard to provision of Electricity.

The district has a total length of 1,130 Kms. of roads maintained by the Public Works Department (R. & B.) of which 6 Km. are cement concrete, 968 Km. black top/asphalt, 120 Km. metalled and 29 Km. unmetalled/murram. In regard to provision of rural communications, the district is very backward in as much as 1,053 villages forming 35.2% of total number of villages have not been connected by any roads. Only 1,189 villages are connected by all-weather roads while 748 villages are connected by fair-weather roads.

1,890 villages have Primary schools, 94 have Upper Primray schools and 99 have high school facilities. There are 75 hospitals and dispensaries in the district with a total bed strength of 439.

The problem of high density of population in some areas, tribal areas, and coastal villages constitute the care of the problems of this district. In future the economy of the district would get closely linked to developing Visakhapatnam town.

2. VISAKHAPATNAM

The Visakhapatnam district lying in the north-eastern portion of Andhra Pradesh is situated on the east-coast known as coramandal coast between 17°-10' and 18°-25' of the northern latitude and 85°-50' and 80°-55' of the eastern longitude. It is bounded on the north by Orissa State and Srikakulam district, on the east by Bay of Bengal on the south by East Godavari district and on the west by Orissa State. The district consists of two natural divisions namely the agency area and the plains area. The agency track mainly consists of the hilly region covered by Eastern Ghats which run parallel to the coast from the north-east to south-east and is situated in the interior of the district. The agency area comprises Chintapalli and Paderu taluks and portions of Narsapatnam, Chodavaram and Srungavarapukota taluks. The rest of the district is classified as plains. The district has a long coast line and along the coast lie a series of saltish sandy swamps. The chief rivers in this district are Machkund, Sarada, Varaha, Gosthani, Champavathi, Thandava, etc. In the lower reach of Machkund, the river is called the Sileru river. There is a water-fall in the river at Doduma which is being harnessed for production of electricity.

Vizag district occupies an area of 13,759 sq. kms. with a total population of 28.05 lakhs, 21.08 lakhs rural and 6.26 lakhs urban. The district has a density of population of 204 per sq. km. The rural population of the district constitutes 77.70 per cent to the total population and the urban population accounts for 22.30 per cent. There are 997 females for every 1,000 males. The sex ratio in the district is slightly higher than the sex ratio in the State (977). The Scheduled Castes form 7.91 per cent of the total population while the Scheduled Tribes population accounts for 10.69 per cent of the total population. This is one of the districts in Andhra Pradesh where there is a larger Scheduled tribes population. There are 4,184 inhabited villages and 704 un-inhabited villages in the district. This district is having the highest number of villages in the State. Of the 4,000 and odd villages in the district about 2,800 villages are situated in the agency area of the district.

Workers constitute 41.1 per cent while non-workers constitute 58.9 per cent. Among the workers 42.9 per cent are cultivators 28.0 per cent are agricultural labourers and the remaining 29.1 per cent are other workers.

The climate varies considerably in different parts of the district. Near the coast the air is minsty and the temperature seldom raises very high. The climate in the hill region is however, cooler on account of the elevation and thicker vegetation. The district has a fairly good rainfall and the normal annual rainfall is about 1,053 mm. The district gets the bulk of its rainfall during south-west monsoon, *i. e.*, June and September but also gets the benefit through north-east monsoon. During the year 1970-71 the district received an amount of rainfall of 122 mm. in hot weather period from March to May.

The soils in this district are chiefly black cotton soils. Near the hills the red loamy are pre-dominant but towards the coast the soils become finer and in the valleys they are black clay. But the north

and south of western taluks are mainly of red soils, while the coast has large sandy tracks. 11 per cent of the villages are black cotton soils while in 18 per cent of the villages the sandy loams occur largely and in 70 per cent of the villages red loamy soils occur.

The principal minerals of the district are clay, graphite, limestone, manganese and ochre. A few good deposits of graphite have been reported around Palakonda, Nandakota, Chintapalli and Nampalli. The graphite can be utilised in making grey paints. The limestone deposits are expected to yield as much as 400 million tonnes of limestone.

The district has manganese with an average manganese content of 30 to 32 per cent at Medangi and Chikkapara. Manganese is used in the manufacture of ferro alloys. The red ochre deposits in the district are estimated to be the order of 22,000 tonnes.

The district, apart from Adilabad district, in the State, has the largest area under the forest. The area being 4.75 lakhs hectares accounting for 34.4 per cent of the total geographical area. The forests in this district are almost entirely deciduous, extremely irregular, and very open varying considerably in condition, composition and density of the group. Fuel forests which cover most of the area lie at the foot hills and in the lower slopes. As a rule trees of more than three feet girth with a clean bore of eight feet or more are rare. Bamboo forests exist in all the ranges occurring plentifully over a major portion of Narsipatnam range.

The district is administered through 11 taluks and 24 Community Development Blocks. Among the 24 Blocks in this district 8 are Tribal Development Blocks and the remaining are ordinary Blocks. None of the Blocks in this district are advanced Blocks. However no taluk in this district has been declared as chronically affected taluk.

The total cropped area in this district is only 38.9 per cent of the total geographical area. About 36.5 per cent of the cropped area is irrigated. The principal sources of irrigation are tanks and wells, the canal irrigation accounting for less than 23 per cent. 80.2 per cent of the cropped area is under food crop while 19.8 per cent is under non-food crops. The principal food crops grown in this district are paddy, bajra and pulses. A considerable area in this district is under groundnut. Gingelly is also grown over an extent of 4.31 per cent of the cropped area. The yield rates are not very high in this district since the farmers are economically backward.

There are 344 registered factories employing over 19,000 workers per day. The principal areas providing the bulk of factory employment are Visakhapatnam and Vizianagaram.

In Visakhapatnam district there are only 444 villages electrified accounting for 14 per cent of the total number. This district has the lowest percentage of villages electrified. However the percentage of population covered is 53.8 per cent which is slightly higher than some of the other districts in the State.

There are 1,302 Kms. of roads maintained by Public Works Department of which 53 kms. are of cement concrete, 952 Kms. black-top/asphalt, 170 Kms. metalled and 131 Kms. unmetalled. In view of the large tracks of agency area the district suffers from the point of view of village roads. While 31.5 per cent of the villages are connected by all-weather roads about 46 per cent of the villages are not connected by any roads.

There are 1,414 villages having primary schools, 94 villages upper primary schools while 72 villages have high school facilities.

The district has 123 hospitals and dispensaries with a total bed strength of 2,242. This is the second best district from the point of view of bed strength since the medical college is located at the headquarters of the district.

Visakhapatnam with its industrial complex and the ship building yard is a most potential source for factory employment. Of the registered factories, a large consists part of rice mills and oil mills. There is a great potential for industrial development, and the employment opportunities are likely to increase considerably in this district in view of the proposed steel plant. When this project comes through, it will offer plenty of scope for industrial growth of the district. The ancillary industries which are likely to crop up will offer considerable employment opportunities and help a shift of the rural population.

3. EAST GODAVARI

The East Godavari district lies on the north-east coast of Andhra Pradesh between 16°-19' and 18° northern latitude and 81°-29' and 82°-37' eastern longitude. It is bounded on the north by the Visakhapatnam district and the States of Orissa and Madhya Pradesh, on the east and the south by the Bay of Bengal and on the west by the Khammam and the West Godavari district. This district can be broadly divided into three distinct zones namely, the Agency or the hilly tracts, the delta and the upland. The agency areas comprise the taluks of Rampachodavaram and Yellavaram, the deltaic portion consists of the whole of the Konaseema and portions of Kakinada, Ramachandrapuram and Rajahmundry taluks. The upland portion comprises the taluks of Tuni, Pithapuram, Peddapuram, Prathipadu and portions of Rajahmundry, Kakinada and Ramachandrapuram taluks. The district is occupying the delta area of the river Godavari. The Sabari, a tributary of the river Godavari flows through this district. The district is a virtual gift of the river Godavari.

The district occupies an area of 10,940 sq. km. with a density of population of 282 per sq. km. The district has the largest population being 30.87 lakhs of which 24.94 lakhs is rural and 5.94 lakhs is urban. The percentage of rural population to the total population is 80.77, while the percentage of urban population is 19.23. The district has 996 females per 1,000 males. The Scheduled Castes form 16.77 per cent of the total population while the Scheduled Tribes account for 3.86 per cent of the population. There are 1,344 inhabited villages and 169 un-inhabited villages in the district. Of the 224 urban areas, 13 are located in this district. Only 38 per cent of the population are workers while 62 percent are non-workers. In the Andhra region this is the district with the highest percentage of non-workers. In the entire State also this is the second district in regard to high percentage of non-workers among the population. Of the workers, 21.1 per cent are cultivators, 45.2 per cent are agricultural labourers, and 33.7 per cent are other workers.

The climate of the district is comparatively equitable and although it is very warm between April and June it is never too oppressive during the rest of the year. The district has the highest normal annual rain-fall in the State being, 1,138 mm. The bulk of the rain is received through the south-west monsoon during the period June to September. Rain-fall though small is received through the north-east monsoon during the period October to December and during the hot weather period March to May as well. The predominant soils in the district are red loamy, black cotton and sandy loams. In 52 percent of the total number of villages, the red loamy soil predominates. In 29 per cent of the villages black cotton soils predominate while sandy loams predominate in 14 per cent of total number of villages in the district.

The district is not important from the point of view of minerals. Graphite occurs partially near Velagapally in Chodavaram taluk. The different sand stones of the area yield good building stones. A little cut stones is also obtained in Chodavaram taluk.

The district has a forest area of over 2.90 lakh hectares constituting 26.8 percent of the total geographical area. The forests in Ellavaram, Rajahmundry and Rampachodavaram taluks contain timber and bamboos. The forests in Peddapuram taluk contain fuel and bamboo. The forests in Peddapuram and Yellavaram are scrub jungles. The forest in Peddapuram taluk contains palmyra and cashew while the forests in Tuni taluk contain scrub jungles. The forests in Kakinada taluk are mangroves while the forests in Amalapuram taluk contain casuarina trees and mangroves.

The district is administered through 14 taluks of which 2 are in the agency areas. There are 20 in the district, 4 of which are Tribal Development Blocks as many as 12 Blocks in the district have been categories as advanced blocks and four Blocks are categorised as ordinary Blocks. There is not even a single backward Block in this district.

The cropped area of the district forms only 51.4 per cent of the total geographical area. Of the cropped area 63 per cent is irrigated. 79 per cent of the area irrigated is under assured irrigation sources, namely, canals. 85.3 per cent of the cropped area is under food crops and 14.7 per cent is under non-food crops. 58.4 percent of the area is under paddy, and about 8 per cent is under pulses. Paddy is the most important food crop in this district. Among non-food crops tobacco and gingelly are fairly important though groundnut is also grown over a small area. This district accounts for about 60 percent of the area under coconuts in the State. The district has fairly high average yields in view of the assured irrigation facilities.

There are 666 registered factories in the district providing employment to 22,678 persons. The factory units are concentrated in the three taluks of Ramachandrapuram, Kakinada and Rajahmundry. Rice mills, Sugar factories, Saw-mills, printing presses, and metal and brick industries are the important industries besides machinery manufacture.

The district has 45.8 percent of its villages and towns electrified but the coverage of population is the second highest in the State being 85.6%

The district has 1,406 kms. of roads maintained by the Public Works Department (R. & B.) of which 30 Kms. are cement concrete, 1,016 kms black top/asphalt, 302 kms metalled and 61 kms un-metalled murrum. While 800 villages are connected by all-weather roads, 290 villages are connected only by fair-weather roads, and 264 villages forming 19.5 per cent of the total number of villages are not connected by any roads. 899 villages in the district have primary schools, 120 villages upper primary schools and 108 villages high schools.

The district has 124 hospitals and dispensaries with a bed strength of 1,293.

This district thus presents a variety of problems of delta coastal areas, uplands and tribals which need appropriate strategies.

4. WEST GODAVARI

Lying to the West of the river Godavari, bounded on the north by Khammam district on the south by Krishna district and Bay of Bengal, on the east by the river Godavari and on the west by the Krishna district, the district of west Godavari is situated between 16°-15' and 17°-30' of the northern latitude, and 80°-50' and 81°-55' of the eastern longitude. This district is the second smallest district of Andhra Pradesh with an area of 7,780 sq. km. it is strategically located in the Madras-Calcutta National Highway. The Madras Howrah railway line passes through the district.

In 1971, the recorded population of the district was 23.74 lakhs with a rural population of 19.54 lakhs and an urban population of 4.20 lakhs. The density of Population of the district is the second highest with 305 persons per sq. kilo metre. The percentage of rural population in the district is 82.29 and the percentage of urban population 17.71. The district has a slightly larger percentage of Scheduled Castes population which accounts for 14.3 per cent as against 13.3 per cent for the State as a whole. But in regard to Scheduled Tribes the percentage of tribal population to the total population is only 2.2 as against 3.8 per cent for the entire State. The decennial population growth rate during the decade 1961-71 was of the order of 20.02 per cent as against the State average of 20.90 per cent thus showing a lower growth rate than the average growth rate of the State. Compared to the State average, the number of females per thousand males is slightly higher being 994 against State average of 977.

The climatic conditions of the district are more or less of the extreme type. During the summer the district is very hot and it is chilly during the winter. The normal rainfall of the district is more than the State average rain-fall being 1082 mm. and is the third highest. The bulk of the rainfall is received during the south west monsoon period i.e., June-September. The soil in the district is made up of alluvial, black regur and red ferruginous varieties. The alluvial soil is considered to be fertile while the black regur soil ranks only next to it and occurs in all the taluks except Tanuku.

The percentage of workers to total population according to the 1971 census was 40.6 against the State average of 41.4, thus indicating the preponderance of non-workers. Of the total workers, the cultivators form 22.4 per cent agricultural labourers 50.1 per cent and other workers 27.5 per cent. A special feature in the occupational distribution of the working population in the district is that while the percentage of cultivators to total workers is considerably smaller being 22.4 against the State Average of 32.2, the agricultural labourers account for as much as 50.1 per cent as against 37.9 percent for the State as a whole. The other workers in the district more or less form the same proportion as in the State as a whole.

The district is administered through 8 taluks and 16 Community Development Blocks. Most of the taluks have two Community Development Blocks while one taluk namely Polavaram is demarcated into three Blocks and another taluk namely Chintalapudi has only one

Community Development Block. The total number of villages in the district is 880, of which 841 are inhabited and 39 uninhabited. The number of Urban areas is only 10 out of the 224 in the entire State.

The district is predominantly an agricultural one with almost three quarters of the workers depending on agriculture either as cultivators or as agricultural labourers. The total cropped area in the district forms 60.2 percent of the geographical area and has the third largest percentage cropped area. This district accounts for the largest percentage of irrigation, the percentage of the gross area irrigated to the total cropped area forming 79.5 as compared to 31.6 in the State as a whole. The principal crops grown in the district are Paddy, Sugar-cane, Tobacco, and other garden crops like Banana, Mangoes etc. Since the district has been under the Intensive Agriculture District Programme from the beginning, it has succeeded in recording the highest yield per acre in rice, the yield during the year 1970-71 being 1,750 Kg. per hectare. In the same year, the district has also recorded the highest yield per acre in sugar-cane being around 91 tonnes per hectare.

The number of villages and towns electrified in the district is 562 forming about 67 per cent of the total number of villages. The population covered by provision of electricity is 84.5. While the percentage of villages covered is the highest in the entire State the number of people covered by provision of electricity is slightly less when compared to Hyderabad and East Godavari districts.

Industrially the district is a comparatively backward one in the Coastal Andhra region having only 406 registered factories with the average number of workers per day at around 17,000. Among the industrial units, there is a preponderance of rice mills and sugar mills. Of the 406 registered factories, as many as 265 are rice mills, 7 sugar factories, 8 artificial manure manufacturing units and 31 units manufacturing machinery. The only urban area in the district which has a location quotient of non-agricultural workers with value more than one is Eluru.

The district has 769 miles of roads maintained by the Public Works Department (Roads and Buildings Division). Of the total length 19 miles are cement concrete 579 miles black topped/asphalted, 145 miles metalled and 16 miles un-metalled/murram roads. From the point of accessibility, the district is placed in a very favourable position. Most of the villages are connected by all-weather and fair weather roads. As many as 654 villages are connected by all-weather roads while 153 villages are connected by fair weather roads. Only 34 villages are not connected by any roads. Of the districts in the State this is the only district not only in the Coastal Andhra region but in the entire State which has the least number of villages not connected by any road. The percentage of villages not connected by road is as small as around 4.

From the point of view of educational facilities particularly in rural areas, the district should be considered fairly advanced in as much as 684 villages have primary schools, 76 villages have middle schools or Upper-primary schools, 148 villages High or Higher secondary schools and 2 villages Colleges. It is however, seen that the villages

which are remote from the urban areas do not have as much educational facilities as the villages which are proximate to the urban areas. The percentage literacy in the district is the highest in Andhra Pradesh against 24.6 for Andhra Pradesh. Even among females, the percentage of literacy is the highest being 28.6 as against 15.7 for the being 34.9 State as a whole.

There are 85 hospitals and dispensaries in the district, with 3.9 hospitals per lakh of population. There are 600 beds, the number of beds per lakh of population being 21.72.

From the economic features of the district outlined above it will be seen that the economy of the district is primarily an agricultural one. It is also one of the fairly developed districts of the State with adequate infrastructural facilities in the shape of electricity, roads, irrigation and other social service facilities. It is fortunately placed in as much as none of the taluks in the district is chronically drought affected. On the basis of certain indicators evolved by the High Power Committee none of the Community Development Blocks has been categorised as Backward Block though the district has a couple of Tribal Blocks. Of the 16 Blocks in the district 9 are declared as Advanced Blocks. The district had been subject to the influence of intensive agricultural development in view of the operation of the IADP since its beginning and therefore, the pace of agricultural development was also a little faster than in other districts. The agricultural population in the district consists of a fair proportion of progressive farmers receptive to technological changes. The farming community is particularly dominated by the most progressive community among agricultural farmers. From the pattern of industrial development, it is seen that agro-based industries have a better chance to succeed than other types of industries like mineral based or sophisticated manufacturing industries.

Modernising agriculture since the farming community is highly receptive to technological innovations including diversification of agriculture; expansion of agro-based industries not only to cover a large number of commodities grown in the district but also to utilise the bye-products of the existing agro-based industries and establishment of consumer industries, would be some of logical lines of development of the district. Along with this, subsidiary occupations like development of Animal Husbandry and Dairying would re-enforce the economy ensuring higher farm incomes to all groups of farmers. Though the district has not got much of a coast line the location of Collair lake in the district perhaps offers vast scope for the development of inland fisheries. Fisheries development would particularly improve the economic conditions of the weaker sections. This district has also got pockets of upland areas where the potential for surface irrigation facilities is comparatively small and therefore, a more intensive exploration of the underground water facilities and utilisation to the maximum the potential for underground water resources would develop more acres.

5. KRISHNA

Krishna district lies between 15°-43' and 17°-10' of the northern latitude and 80°-0' and 81°-33' of the eastern longitude. The district is elongated from the north-west to south-east and is surrounded on the east by the Bay of Bengal and West Godavari district, on the south by the Bay of Bengal, on the west by Guntur and Nalgonda districts and on the north by Khammam district. The district drained and watered by the river Krishna. The district may be broadly divided into two portions namely, the delta and uplands. The taluks of Bandar, Divi, Gudivada and Kaikalur and portions of Vijayawada and Gannavaram taluks from the delta area forming part of the Krishna delta, the remaining taluks, namely, Nuzvid, Tiruvur and the north portions of Vijayawada and Gannavaram constitutes the uplands and form part of the Deccan Plateau. The Kolleru lake as extensive shallow depression about 384 Sq. Km., in the area lies in the northern part of Kaikalur taluk. It acts as a reservoir during monsoon and almost dries up in summer. The district is strategically located in the State being almost in the centre. It has a big railway junction at Vijayawada through which Madras-Howrah and Madras-Delhi trains pass. Vijayawada city is a big commercial centre with plenty of trading activities. It is also a principal trading centre for export of rice. The area of the district is 8,734 Sq. Km., and the density of population is 286 per Sq. Km. It is one of the three most densely populated districts. The number of females per 1,000 males is 964. The total population of the district is 24.94 lakhs of which 18.14 lakhs is rural, and 6.80 lakhs urban. The percentage of rural population is 72.75 while that of urban population is 27.25. This is the only district excepting Hyderabad which has got the largest percentage of urban population indicating the extent of urbanisation of the district. The growth rate of population during the decade 1961-71 is 20.06% against the State's growth rate of 20.90%. The population of the Scheduled Castes form 10.05% to the total population while that of Scheduled Tribes is 2.03%. Compared to the State as a whole, the proportion of both Scheduled Castes and Scheduled Tribes population is less. Out of the 224 urban areas in the state the district has 16 urban areas. The total number of inhabited villages is 939 while un-inhabited villages are 43.

Climatic condition of the district is of extreme kind with hot summers as well as cold winters and may be classified as tropical. April to June are the hottest months. In certain parts of the district, particularly, in the uplands, it is very hot. At Vijayawada, the heat is excessive and unbearable owing to the radiation that develops in the crust of Indrakila mountains near by. However, Machilipatnam, the District Head Quarters, possesses the most equitable climate. Normally, rain-fall of the district is 958 mm. which is higher than the average for the State as well as the average normal rain-fall of the Andhra region. Even in this district, the bulk of the rain-fall is received through the south-west monsoon during June to September. About a third of the rain-fall is also received through the north-east monsoon during October to December and in the hot weather period between March and May.

The soil in the district consist of three main varieties . The most predominant soils in the district are black cotton, red-loam and sandy clay. Out of the 998 villages the information regarding the types of soils are available 574 villages have black cotton soil, 223 sandy clay and 194 red loam. The mineral resources of the district consist of chromite which occurs in the Kondapalli plains, Iron ore near Jaggayyapet, limestone, which is fairly extensive near Jaggayyapet, Muktheswarapuram region. Mica which is known to occur in Tirvur taluk near Gosavidu and Lakshmpuram, Sulphur in small quantities limestone which is sufficiently pure for cement manufacture is estimated to yield about 200 million tonnes. The total resource for limestone are estimated to be of the order of 270 million tonnes approximately.

The district has about 81,000 hectares of forest forming only 9.2 of the total geographical area. Against 23% area occupied by forest, in the entire state, the area under forest is the third lowest in the entire State. The district is administered through 10 taluks and is demarcated into 17 community Development Blocks. There is not even a single backward block in the district while the number of advanced blocks are as many as 7, the remaining 10 blocks being categorised as ordinary blocks. None of the taluks in the District has been declared as a chronically drought affected taluk. The total cropped area of the district is about 6.48 lakh hectares forming 736% of the total geographical area. This is the second largest district in regard to the proportion of cropped areas to the geographical area. The proportion of total cropped area is almost one and half times when compared to the State as a whole. Of the cropped area, 58.7% is irrigated. Though the percentage of irrigated area is higher than the regional percentages, it is less than the percentage of area irrigated in districts of East Godavari, West Godavari and Nellore. Of the cropped area, about 88% is under food crops, about 12% under non food crops. Of the food crops, the area under paddy, jowar and pulses account for the bulk of the area. Among the non-food crops the principal crops are ground nut and tobacco. The District has the third highest yield rate in rice being 1,617 Kg. per hectare. The yield in this district is next only to Nizamabad and West Godavari districts in the State. The yield rate of sugar-cane is also the second highest being around 88 tonnes per hectare. The yield rate of tobacco in this district has been the lowest in the entire State. The district is the second largest producer of rice and is substantially surplus in rice. The district also produced the third largest quantity of pulses, the production during 1970-71 being over 31,000 tonnes.

The number of registered factories in the district is 438 with the average number of workers employed per day being over 16,000. About 50% of the total number of registered factories is located in Vijayawada taluk accounting for half the employment of factory workers. Among the registered factories, more than half are engaged in conversion of paddy into rice, the number of rice mills in the district being 225 accounting for a third of the total employment in factories. Next importance to rice milling industry, is the machinery manufacturing units which are as many as 57, employing around 900 workers daily. The motor repairing units which number 18

employ as many as 1,500 workers. This district when compared to the other districts in the Coastal region may be considered a little more industrially developed excepting Visakhapatnam, which by virtue of its having a port town offers more factory employment in the oil refineries and ship building industries.

In the matter of electrifications, this district should be considered the most fortunate in as much as 65.8% of the total number of towns and villages in the district have been electrified is almost double when compared to the region or the State as a whole. The only district in the State which has a slightly higher percentage coverage of villages and towns electrified is West Godavari. The percentage of people in the district covered by the provision of electricity is 82.

There are 982 k.m. of roads in the district maintained by the Public Works Department (R. & B.) of which 70 k.m. are cement concrete, 779 k.m. black top/asphalt 93 k.m. metalled and 40 k.m. un-metalled/murram. In the entire State, the district has the second largest length of cement concrete roads maintained by the Public Works Department. A little less than a fifth of the total cement concrete roads in the State and a fourth of the cement concrete roads in the Andhra region are located in this district.

In regard to village roads only 96 villages are not connected by any roads, while 614 villages are connected by all-weather roads and 233 by fair-weather roads. There are 2,121 primary schools, 265 middle schools and 187 secondary schools in the district. 9% of the total number of villages in the district do not have any primary school. The percentage of literacy in the district is 33.17. The percentage of literacy in this district is the highest in the State excluding Hyderabad district.

There are 44 hospitals and dispensaries in this district and 1.9 hospital/dispensary per lakh of population. There are 727 beds providing 22.82 beds per lakh population. This district is one of the more prosperous districts in the State. Agricultural development has been significant due to the adoption of modern practices in agriculture. In the recent past, the district has registered a phenomenal rate of development in the dairying industry, and is supplying milk to the twin-cities of Hyderabad and Secunderabad. Even so, there are pockets of upland area where the economic conditions of the people are far from satisfactory. The upland taluks of Nandigama Jaggayyapet, Nuzvid and Tirvuur are known for their backwardness. In the upland areas there is larger need for irrigation facilities. An effort should therefore be made to provide irrigation facilities through surface water irrigation if possible and through exploitation of ground water resources if necessary. Building up subsidiary occupation like poultry keeping and dairying could also be given high priority. While resources based industries other than agricultural based industries may not be possible, consumer goods industries have high chances succeeding in view of the high levels of income of the people. Export oriented industries could also be located in this district with advantage in view of the locational advantage that Vijayawada town of this district has. The development of small scale industries has a favourable climate in this district since large number of agriculturists are

looking forward to invest for opportunities in industries. The district has also plenty of scope for fisheries development in view of the long coast line that the district has and the possibilities for development of both marine and inland fish. The people inhabiting particularly in Divi taluk are mainly fishermen, mainly depending on fish for their livelihood. Provision of craft and supply of mechanised boats for the fishermen in the Coastal district would go a long way for improving the economic conditions of the fishermen as well as developing fishing industry in the district.

6. GUNTUR

The present Guntur district lies between $15^{\circ} 46'$ and $16^{\circ} 50'$ of northern latitude and $79^{\circ} 10'$ and $80^{\circ} 55'$ of the eastern longitude. It is bounded on the north by Nalgonda and Krishna districts, on the south by newly constituted Prakasam district, on the west by Prakasam and Mahabubnagar districts, and on the east by Bay of Bengal and Krishna district. The Ongole taluk and parts of Narsaraopet and Bapatla taluks of this erstwhile district were transferred to newly constituted Parakasam district. The principal rivers flowing in this district are Krishna, Gundlakamma, Musi, Naguleru and Chandravanka. The Krishna which rises in Mahabaleswar in Maharashtra State forming the border between Mahabubnagar and Kurnool districts and reaches Guntur near Vinukonda hills on the south-west portion of Palnadu taluks. The river Krishna forms the dividing line between Guntur district on one side and Mahabubnagar district on the other side.

The district has an area of 11,377 sq. km. with a total population of 28.44 lakhs of which 21.34 lakhs is rural and 7.10 lakhs is urban. This district has large percentage of urban population accounting for 25 per cent of the total population as against 19.31 for the State as a whole. The decennial growth rate of population of this district during 1961-71 is higher than the State as a whole being 22.2 per cent against 20.9 per cent for the State as a whole. There are 974 females in this district per 1,000 males. The scheduled castes form 4.8 per cent of the total population of this district while the population of scheduled tribes account for 3.7 per cent. The total number of inhabited villages in the district is 688 while the number of uninhabited villages is 28. Of the 224 urban areas in the State 16 are located in this district. 40.2 per cent of the population are workers in this district. Among workers 24.6 per cent are cultivators, 43.5 per cent agricultural labourers and the remaining 31.9 per cent are other workers.

The climate in this district is generally very warm in summer. The heat in the summer is severe in the upland areas especially in the tracts adjoining the hills. Rentachintala records the highest temperature both in the district as well as in the State. The district receives an average normal rainfall of about 816 mm. of which 499 mm. is received during the south-west monsoon between June and September. This district also receives considerable rainfall during northeast monsoon between October and December and during the hot weather period between March and May.

The predominant soils in the district are the black cotton and red loamy soils. In 69 per cent of the total number of villages in the district black cotton is predominant while in 24 per cent of the villages red loamy soils occur predominantly. The black soils of the district are considered most fertile and small extent of alluvial soils are also found along the banks of Krishna river.

The district has immense reserves of cement grade limestone in the Palnad region. It is well endowed with construction materials. The Agnigundala belt of copper and lead in the Vinukonda taluk are a

present being exploited. It estimated that about 124 mn. tonnes of cement grade limestone is available in Gangulakunta and Gottipalli area in the Macherla sub-taluk. Very fine marbles of pink, sea green, white, grey and black colours have been quarried near Rentachintala for building and ornamental purposes. Good lithographic limestones occur in Dacheipalli. The only important minerals in the district are therefore, copper and lime-stone.

The forest areas in this district occupy 15.1 per cent of the total geographical area. These forests are classified as open scrubbed jungle of the plains adjoining cultivation, fuel forests of the lower slopes and outer valleys and immature timber areas of higher slopes and interior valleys. One of the interesting features in this district is the existence of vast stretch of forest area along the coast where raising of casuarina plantations has been a regular work for some decades. The coastal sands are also suitable for raising plantations of the important dollar earner namely cashew. Cashewnut industry is flourishing one in this district. The district is administered through 8 taluks and 21 blocks. Of the 21 blocks 6 are advanced blocks, 3 are ordinary blocks and 12 are backward blocks. Three taluks have been declared as chronically drought affected taluks. They are Sattenapalli, Vinukonda and Palnad.

The total cropped area of the district forms 76.2 per cent of the total geographical area. 46.8 per cent of the cropped area is irrigated. The district has the largest area irrigated through canals in the entire State. The gross area irrigated by canals is about 3.88 lakh hectares. The other source of irrigation is practically insignificant. The canal irrigation accounts for as much as 96 per cent of the irrigated area. Thus the available sources of irrigation is dependable. 82.1 per cent of the cropped area is under food crops while 17.9 per cent is under non-food crops. The predominant food crops in this district are paddy, pulses and jowar. The area under paddy accounts for as much as 30 per cent of the cropped area. Among the non-food crops, the principal crops are groundnut and tobacco. This district is a big centre for the export of filtered Virginia tobacco. The yield rates in this district are generally high in view of the irrigation facilities.

In the coastal taluks of the district fishing is a significant occupation and the economic condition of fishermen needs lot of improvement. There are 583 registered factories in the district providing employment to about 68,000 people. The largest number of units and two-thirds of the factory employment is provided in Guntur taluk. Of the registered factories, the largest number are rice mills and tobacco curing units.

367 villages and towns in this district forming 52.4 per cent of the total villages and towns have been electrified covering 73.9 per cent of the total population. This is one of the districts in the State where the progress of electrification has been fairly good considering the electrification of towns and villages in the State as a whole.

There are 1426 kms. of roads maintained by Public Works Department (R & B) of which 43 kms. cement concrete, 926 kms. black top, 392 kms. metalled and 64 kms. unmetalled and murrum.

This district has a fairly well-developed system of rural communications. 471 villages forming 68.7 per cent of the total villages are connected by all-weather roads. Only 62 villages in the district forming 9 per cent are not connected by any roads.

In the district 656 villages have primary schools 56 villages have middle schools and 120 villages have secondary schools. There are good educational facilities in the district. Only 32 villages constituting 4.7 per cent of the total number of villages in the district do not possess even minimum educational facilities. There are in all 89 medical institutions of various categories in the district. There are 2 hospitals and 54 dispensaries and 33 others which include maternity, child-welfare, primary health and family planning centres. There are no hospitals or dispensaries in the Vinukonda taluk. The rural parts of Tenali, Repalle and Sattenapalli have more medical facilities compared to other taluks in the district.

This district is thus one of the more developed districts with excellent opportunities for diversified agriculture and rapid industrial development.

7. PRAKASAM (ONGOLE)

This is a newly constituted district, the truly first in Andhra Pradesh, formed with 2 taluks from Kurnool district, namely, Giddalur and Markapur, 4 taluks from Nellore district namely Kandukur, Kanigiri, Podili and Darsi and Ongole taluk and parts of Bapatla and Narsaraopet taluks of Guntur district. It is bounded on the north by Guntur district, on the south by Caddapah and Nellore districts, on the west by Kurnool district and on the east by Bay of Bengal. The district lies between $14^{\circ}-57'$, and $16^{\circ}-17'$ northern latitude and $78^{\circ}-43'$ and $80^{\circ}-25'$ eastern longitude. The western portion of the district, which includes the taluks of Giddalur and Markapur is a hilly area and therefore has a good elevation. The Central portion of the district comprising the taluks of Darsi, Podili and Kanigiri contain large tracts of low scrub jungle diversified with rocky hills and stony plains which form a distinctive feature of the district. The small tanks obtaining an uncertain supply of water from local drainage, the irrigable land constantly thrown out of cultivation and the stunted crops reared on hungry soil make the difficulties against which the ryot strives to gain a precarious livelihood. Chirala, Ongole and Kandukur are the Coastal taluks of the district. In the sandy tract of Chirala there is a large tract of soapnut jungle. Casuarina plantations are extensively carried on in the Coastal belt of Ongole and Chirala taluks. There is also a luxuriant growth of cashewnut in this region. The principal rivers of the district are the Gundlakamma, the Musi, the Maneru and the Paleru. The Gundlakamma rises in the Giddalur taluk and Kambham tank is formed by a bund cross the Gundlakamma river. The Musi flows across the southern portion of Ongole taluk. The Maneru and the Paleru, rivers flow across Kanigiri and Kandukur taluks.

The district occupies an area of 17,620 sq. km. The total population of the district is 19.20 lakhs of which 17.07 lakhs is rural and 2.13 lakhs urban. The density of population of the district is 109 per sq. km. The percentage of rural population to the total population is 88.93 while that of the urban population is 11.07. There are 987 families per 1,000 males, in the district. The Scheduled Castes form 9.26 per cent of the total population, while the Scheduled Tribes account for 2.87 per cent of the total population. There are 1,005 inhabited and 92 uninhabited villages in this district. Out of 224 urban areas, 9 are located in this district. Workers constitute 40.5 per cent of the population while the non-workers are 59.5 per cent of the total population. Among the workers 29.0 per cent are cultivators 41.7 per cent are agriculture labourers, 29.3 per cent are other workers.

The sea breeze of the Coastal taluks renders the climate moderate both in winter and summer in the Coastal area of the district. In the rest of the district the heat in the summer is severe especially in the tracts adjoining the hills. The district has a poor rain-fall of 761 mm 42.8 per cent during the north-east monsoon period between October-December and 8.7 per cent in the hot weather period between March-May.

The predominant soils in this district are red loamy, black cotton, and sandy loams. In a majority of the villages constituting 54 per cent of the total number of the villages in the district, red-loamy soil predominate. In 34 per cent of the villages black cotton soils occur predominantly while in 12 per cent of the villages of the district sandy loams predominate. The black cotton soils predominantly occur in the Blocks of Bestavaripet, Maddipadu, Ongole and Korisapadu, Santhmagalur and Parchur. In Parchur Block, all the villages have black cotton soils. The red loams predominate in the Blocks of Kanigiri, Venigandla, Markapur, Tarlapadu, Giddalur, Yerragondlapalem and Podili. The sandy loams predominate only in the Blocks of Vetapalem and Tallur.

The district has iron ore in the Ongole taluk. The magnetite-quartite in the Ongole taluk are estimated to contain 295 million tonnes of low grade iron ore with 32 to 37 per cent iron content. Clay, a sedimentary bedded deposit in sand stone occurs in Kandukur taluk. The only known occurrence of Manganese in this district is near Jana-palacheruvu in Giddalur taluk. The district on the whole is not endowed with such mineral resources. The district has a fairly long coastal line offering immense fishery wealth. The potentialities of deep sea fishing offers immense scope in this district. There are fishermen in coastal belt with low level of technology and are economically and socially very backward. Forests occupy 26.1 per cent of the total geographical area in this district. In the coastal taluks, the forests contain Casuarina and cashew plantations.

The district is administered through 9 taluks and 17 Community Development Blocks. Out of these two are advanced blocks, 6 are backward Blocks and 9 are ordinary Blocks. Eight of the taluks in the district have been declared as chronically drought affected taluks and three form the hard core. They are taluks of Darsi, Podili and Kandukur. The only taluk which has not been declared as drought affected taluk is Chirala. Only 38.1 per cent of the geographical area is cropped in this district. This is one of the districts where the percentage of cropped area to the geographical area is poor. The percentage of irrigated area to the cropped area is only 20.6, being the lowest in the Andhra region. The low percentage of irrigated area in the Coastal Andhra region may be seen from the fact that in this district only 20.6 per cent of the cropped area is irrigated, against the region's average of 50.6 per cent. This is also one of the two districts in the Coastal Andhra region where canal irrigation is the lowest. The area irrigated by canals is about one-third of the total irrigated area. With a scanty and unreliable rainfall and dependence on tanks and wells for irrigation, the plight of agriculture is really despicable. 74.9 per cent of the cropped area is under-food crops and 25.1 per cent is under non-food crops. Jowar, bajra, and other millets are the principal food crops in the district. Paddy occupies only 11 per cent of the cropped area. Among the non-food crops, tobacco claims the pride of place in the district. Of the 25.1 per cent of the area under non-food crops, about half is accounted for by tobacco. The other important non-food crops grown in the district are groundnut and castor. The yield rates in this district compared to the yield rates obtaining the region are poor, both in view of the poor soils as well as the poor irrigation facilities.

There are 154 registered factories in this district offering employment to over 32,000 workers per day. Of these 126 are located in Ongole and Chirala taluks. The bulk of the factories relate to tobacco industry. The next in importance are rice mills, oil mills and saw mills.

Only 312 villages and towns in this district are electricified accounting for 30.4 per cent of the total number of villages and town. The percentage of population covered is 53.8. This is yet another district in which progress has not been very satisfactory.

There are 1,243 km. of roads maintained by the Public Works Department of which 5 km. are cement concret 950 km. black top/ asphalt, 282 km. metalled and 6 km. unmetalled murrum. In regard to rural roads, 513 villages in this district are connected by all-weather roads and 220 villages by fair-weather roads, while 231 villages forming 24 per cent of the total number of villages are not connected by any roads. This is one of the three districts in the Coastal Andhra region, where village communication facilities are poor.

As regards facilities for education, 810 villages have primary schools 54 villages have Upper Primary Schools and 102 villages have high schools in this district. In regard to medical facilities, the district has only 34 hospitals and dispensaries and a bed strength of 293. The number of hospitals and dispensaries in this district is the smallest in the Coastal Andhra region. The bed strength is also very poor. The improvement in medical and health facilities is one of the urgent needs of the district.

8. NELLORE

Nellore district is the southernmost coastal district of Andhra Pradesh lying between $13^{\circ} 30'$ and $15^{\circ} 5'$ of the northern latitude and $79^{\circ} 5'$ and $80^{\circ} 15'$ of the eastern longitude. It is bounded on the north by Prakasam district on the east by Bay of Bengal, on the south by Chittoor district and Chingalput district of Madras State and on the west by Veligonda hills which separate it from Cuddapah district. The principal rivers in the district are Penna in the Centre, the Kandaleru and the Swarnamukhi in the south and the Manneru in the north. They drain the district and after traversing it from west to east finally flow into Bay of Bengal. All these rivers usually get dry for a major part of the year and carry heavy floods during the rainy season or whenever there is heavy rain-fall on the hills.

The district has an area of 13,058 sq. kms. with a density of population of 123 persons per sq. km. As compared to the State as a whole the district is less densely populated. The district has a total population of 16.10 lakhs and the percentage of rural population is 84.23 while that of urban population is 15.77. The total number of inhabited villages in the district is 1,050 while the number of uninhabited villages is 49. Of the 224 urban areas in the State 7 are located in this district. The Scheduled Castes population form 19.73 per cent in the total population while the Tribal population accounts for 8.09 per cent. The district has the largest proportion of Scheduled Castes population and the Tribal population of the district is also very high. The proportion of Tribal population in the total population is third highest in the State. Of the total population 41.2 per cent are workers and 58.8 per cent are non-workers. Of the total workers 25.0 per cent are cultivators, 47.0 per cent are agricultural labourers and 28.0 per cent other workers.

The climate of the district is generally dry and sultry though April and May are hottest months and the hot period will generally last till the end of June on account of proximity to the hills. As the district is wetted by Bay of Bengal on the eastern side, the sea breeze renders the climate temperate both in winter as well as in summer. The district receives a normal rainfall of 1,043 mm. and happens to be one of the five districts which receive the largest amount of rainfall. Roughly 29 per cent of this rain-fall is received during the south-west monsoon during June to September while the rainfall received through the north-east monsoon during the period of October to December forms about 63 per cent. But distribution of rainfall in the district is not adequate or reliable during the crop season with the result that the district is in an area of precarious rainfall.

The soils of the district may be classified as black, red and sandy. The red soil occupies most of the district but a belt of sand runs along the sea coast. The number of villages, from the information available which have black cotton soil is 254, while the red loamy soil is found in as much as 473 villages and sandy loam is found in 389 villages.

From the point of view of mineral wealth the district of Nellore is endowed with a variety of minerals. As regards Mica, the district

is the sole producer in the State of Andhra Pradesh and ranks third in production of this mineral in the country as a whole. Other important minerals occurring in this district include china clay, iron ore, gypsum and limestone. Building stones are also available in this district. Massive types of granites from Nellore district are suitable for structural purposes. Vein quartz and quartzites are also used as road metal and railway ballast.

Forests occupy 18.9 per cent of the total geographical area in the district. The percentage however falls short of the State average percentage of 23. The principal forest produce are cashew-nut, bamboos and other minor forest produce like tamarind, soap nuts, canes and sarasaparilla.

The district is administered through 9 taluks and 21 Community Development Blocks. Of the 21 Community Development Blocks only 3 are categorised as Advanced Blocks while 6 have been categorised as Backward Blocks and the rest as Ordinary Blocks. Fortunately Nellore as it is constituted at present, does not possess any chronically drought affected taluks, since 4 taluks which are chronically drought affected, of which 3 form part of hard-core, have been transferred to newly constituted Prakasam district.

The total cropped area in the district forms 28.2 per cent of the total geographical area. Of the total cropped area nearly 91 per cent is sown with food crops and only the remaining 9 per cent is sown with non-food crops. Among the food crops paddy accounts for more than 52 per cent of the total cropped area followed by jowar (16.5 per cent) bajra, ragi etc. Among the non-food crops, groundnut accounts for 3.5 percent of the total cropped area. In terms of productivity the yield of rice in the district is second lowest at 942 Kgs. per hectare. Gross irrigated area in the district is about 64.7 per cent of the total cropped area and most of the irrigated area is sown with paddy. Among different sources of irrigation, canals account for 41.4 per cent, tanks 41.1 per cent, wells 15.6 per cent and other sources 1.9 per cent.

The workers engaged in manufacturing other than house-hold industries account for 3.9 per cent of the total workers as per 1971 census. There are 218 registered factories employing 4,239 workers. The district has the lowest employment in registered factories. Nearly 198 of the 218 factories employ less than 50 workers which shows that many of the industries in this district are of small scale. Among the various industries Mica industry employs of nearly 1200 persons. Next in the order of importance in terms of employment are rice mills which employ about 1100 persons.

Regarding electrification of towns and villages, about 39.3 per cent of the total towns and villages are electrified covering about 64 per cent of the population.

The National and State Highways and other roads maintained by Public Works Department (R & B) are of 1029 Km. length, of which 856

km are of block-top or asphalt and 165 km are metalled roads. Only 14 km roads are of cement concrete. Regarding accessibility to villages the number of villages connected by all-weather roads constitute 46 per cent of the total villages. Nearly 36 per cent (389) of the villages are not connected by any road.

There are 1892 Primary Schools, 121 Upper Primary Schools and 122 High Schools. Regarding medical and health facilities there are 36 Government hospitals with 807 beds. Bed-population ratio works out about 53 beds per lakh of population.

In this district nearly 65 per cent of the total cropped area is irrigated but the yields of the principal crops are among the lowest in the State. Efforts should be made to diversify the cropping pattern which is now dominated by rice by introducing multiple cropping with progressive introduction of ground-nut, cotton, castor etc. The yields of rice have also to be increased by popularising the use of high-yielding fine varieties. Though it has got valuable mineral resources like Mica, the growth of industry is also not impressive. It has long coast line which should help development of salt industry or fisheries. The advantage of the availability of mica and clay suited for ceramic and the long coast line for the production of salt, could be taken to develop industries based on them. Possibilities for starting sugar factories in the already irrigated areas have to be explored which will help in diversifying agriculture as well as developing industries based on by-products of sugar. The proximity of a metropolitan city like Madras could be taken advantage of for developing production of consumer goods in agriculture as well as industry like dairy products, vegetables, fish, etc.

9. CHITTOOR

Chittoor district as it is constituted now lies between $12^{\circ} 37'$ to $14^{\circ} 8'$ North latitude and $78^{\circ} 3'$ to $79^{\circ} 55'$ East longitude. It is surrounded by Madras State on the east and south and by Mysore State on the west. Anantapur and Cuddapah districts form the northern boundary of this district. Rivers Papagni, Bahuda, Pincha, Palar, Pennar, Arani and Swarnamukhi flow through this district. This district can be divided into two natural divisions, namely, (i) the mountainous plateau and (ii) the plains. The happy combination of the plains, valleys, plateau and the hills make this district one of the most picturesque areas of the State. The Horsely hills which have been developed into a Hill Station in Madanapalle taluk also form part of the plateau engulfing Palamaner, Punganur, Madanapalle and Vayalpad taluks. This plateau is a part of the Mysore Plateau. Lord Venkateswara's Temple at Tirupati is the famous pilgrim centre and perhaps is one of the most picturesque parts of the country.

The district occupies an area of 15,763 square kilometres with a total population of 22.86 lakhs of which 19.78 lakh is rural and 3.08 lakhs is urban. The density of population of this district is 145 per square kilo metre. The number of females per 1,000 males is 960. The percentage of rural population in this district is 86.55 while the percentage of urban population is 13.45. The Scheduled Castes population is very high in this district constituting 17.46% of the total population, while the percentage of Scheduled Tribes population is 2.92. Of the 224 urban areas in the State 13 are located in this district. There are 1,277 inhabited villages and 39 uninhabited villages in this district. 41.1% of the population are workers, while 58.9% are non-workers. Among the workers 43.5% are cultivators, 33.8% are agricultural labourers and 22.7% are other workers.

The taluks of Vayalpad, Madanapalle, Palamaner and Punganur are comparatively cooler and Chittoor taluk has a moderate climate. Chandragiri, Satyavedu and Kalahasti taluks have a slightly hotter climate.

The district has a normal annual rainfall of about 828 mm. of which 44% is received through the south west monsoon during June to September and 40% through the north-east monsoon during October to December. The rain-fall during the hot weather period is not high. The predominant soils in this district are the red loams & the red sandy. There are also patches of alluvial soil in parts of Chittoor and Bangaru palem taluks bordering Madras State. Laterite soil is also found to a still smaller extent in the south-eastern parts of the district in portions of Satyavedu and Puttur taluks boardering Madras State.

The district does not possess any significant mineral wealth excepting iron ore. Iron ore occurs near Sirasambedu about 7 k. m. south-west of Nayudupet railway station on Madras-Vijayawada section of Southern Railway. Even a conservative estimate indicates reserves of about 6.5 lakh tonnes of all grades and the iron content is upto 58.59%.

About 30% of the geographical area of the district is occupied by forests. This is one of the districts where there is a large forest area. The forests in Madanapalle taluk contain good teak and other valuable forest produce. Sandalwood trees are found in the forest covering the Horsely hills and part of Palamaner taluk. Shrub Jungles are common in Punganur, Chandragiri, Kalahasti, Chittoor and Satyavedu taluks.

The district is administered through 11 taluks and 19 Community Development Blocks. Only one Block of this district is classified as an advanced block, one as a backward block and the remaining are all ordinary blocks. 10 taluks of this district have been declared as chronically drought affected taluks of which Chittoor, Bengarupalem, Madanapalle Vayalpad, Palamaner taluks represent the hard core area.

The total cropped area forms 35.7% to the total geographical area. This is one of the districts where the cropped area compared to the total geographical area is very small. But the district has a fairly large proportion of irrigated area, the percentage being the highest at 39.9, in the Rayalaseema area. This is much better when compared to the average for the Rayalaseema area or for the State as a whole. There is practically no major pocket in this district irrigated by canals. Almost the entire area of over 2 lakh hectares is irrigated through tanks and wells. With not a very good rainfall and the distribution of rain fall being not very reliable over the crop season, the district is dependent on the monsoons, for by successful agriculture. However, this district is one of the more progressive district where the underground water resources have been exploited to a fairly large extent. Of the cropped area 64.5% is under food-crops and 35.5% is under non-food crops. The principal food crops of the district are paddy, bajra and ragi. Of the non-food crops, a large area, almost the entire area, is accounted for groundnut. Compared to the other districts in the Rayalaseema area, the district has a fairly good yield rates. The yield rate of groundnut is the highest in the entire State. Against the average yield of only 785 Kg. for the State, this district has an yield rate of about 1,250 Kgs. per hectare.

There are 254 registered factories in the district, employing about 3,600 workers per day. The bulk of the industries are engaged in the manufacture of food products. There are other industries comparatively minor in nature like furniture-making, paper products etc. This district from the point of view of industrialisation, has a long way to go. In Chittoor 43.1% of the total number of villages and towns have been electrified covering 67.4% of the population. It is one of the districts in the State which needs to develop in the matter of electrification when compared to other more advanced districts of the State.

There are 1,357 k.m. of roads maintained by the Public Works Department (R&B) in this district, of which 12,96 k. m. are black top asphalt, and 61 k.m. metalled. In regard to rural communications, this district is fairly better placed compared to the other districts in the Rayalaseema region. 641 villages of the district are connected by all-weather roads, 588 villages are connected by fair-weather roads and only 257 villages or 16.7% of the total number of villages are not connected by any roads.

There are 1,198 Primary schools 92 Upper Primary schools and 115 Secondary schools in this district. The district has 95 health centres, 78 dispensaries and about 149 centres providing other health facilities.

Most part of the district is thus characterised by high-yields, irrigated cultivation through tanks and wells and fairly good rainfall compared to other districts of Rayalaseem. The district is also centrally located between Madras and Bangalore and with this background the district could develop appropriate lines of development.

10. CUDDAPAH

In the heart of the tract of land that forms the southern Deccan Plateau, popularly known as Rayalaseema, lies the district of Cuddapah. It is bounded on the north by Kurnool, on the east by Nellore, on the south by Chittoor and on the west by Anantapur district. It lies on the Madras-Bombay National High-way and the Madras Bombay railway passes through the district. The district is drained by Penneru basin and its tributaries which are all spread over the district almost like a fish bone. The features of the district are largely determined by its hill ranges. The Veligonda, the Palakonda, the Nallamalais and Lankamalais and the Yerramalais constitute the hill ranges of the district.

The geographical area of the district is 15,356 square kilo metres and the density of population per square kilo metre is only 103 against the State average of 157. The population of the district according to the 1971 Census is 15.77 lakhs of which 13.53 lakhs are rural and 2.24 lakhs are urban. The percentage of urban population is only 14.2 while that of rural population is 85.8. Only 8 out of the 224 urban areas in the State are located in this district. The number of villages inhabited are 896 while the number of un-inhabited villages are 76. The district is less urbanised in view of the fact that the urban population constitutes only 14.2% of the total population as against the State average of 19.3%. The Scheduled Castes form only 10.9% of the total population while the Scheduled Tribes account for 1.7%. The number of females per 1,000 males is only 958 against the State average of 977.

The 1971 Census records 40.1% of the total population as workers. Of the workers 32.1% are cultivators, 40.4% agricultural labourers and 27.5% other workers.

The normal rain-fall of the district is only 686 m.m. against the average normal rain-fall of 890 m.m. for the State as a whole. Like all other districts in the region, this district also receives the bulk of the rain-fall through the south-west monsoon *i.e.*, June to September. The district is exceedingly hot in summer, the summer temperature being around 40.8°C. The weather in the district is oppressive in the summer season. The rain-fall is erratic from year to year.

The predominant soils of the district are black clay, black loam, red-loam and red sandy. Black clay is the most superior soil of the district which occupies 28.7% of the total classified area of the district. Black loam which is alluvial soil accounts for 18.2% of the area. Red sandy, which is described as generally unproductive, occupies the highest area of 27.5%. The red-loam occupying 25% of the area offers the possibility of developing crops on this soil by proper conservation and reclamation as it is suitable for cultivation and is known to respond well to the application of proper dosages of chemical fertili-

The district is important from the point of mineral resources mined. It is well endowed with regard to building material and road

metal. The asbestos of the chrysotile produced from Cuddapah district is the best fibre available in India and thus this region holds monopoly in production of the best quality asbestos. Snow-white as well as white barytes are used for paints and chemicals, while off-colour grade obtained from this region is largely consumed for oil well drilling in India as well as countries of the middle east. The lime-stone reserves for cement manufacture as well as for lime industry are inexhaustible and potentially rich deposits are available in the district. Ball clays and white clays required for high-grade Ceramic industry and for sanitary ware are mined in good quantity from this district. The "Narji Lime-stone" which occurs in parts of Cuddapah district is extremely fine grained, compact, bluish grey black in colour. The Jammalanadugu lime-stone is pre-eminently suited for building and ornamental stones and for flooring designs.

The district contains large and important forests, the systematic conservancy of which dates from the passing of Madras Forest Act of 1882. They are mainly situated on the principal hill ranges namely the Veligonda, Palakonda, Lankamalai, Nallamallai of Badvel, Siddhout, Rajampet, Cuddapah and Proddatur taluks. Though the district is not so rich in teak plantation, it is compensated by the most valuable species namely Red-sanders. Red-sanders is claimed to be the pride of Andhra Pradesh forests. Its natural home happens to be the forests of Cuddapah district, where it is found growing gregariously on the hillslopes. Red sanders is exported to Japan and other foreign countries.

The district is administered through 9 taluks and 12 community development blocks. Of the 12 community development blocks in the district, 2 blocks have been classified as backward blocks while the remaining 10 are classified as ordinary blocks. There is not even a single advanced block in the entire district. Of the 9 taluks in the district, 8 taluks have been listed as chronically drought affected taluks. Of these 8, 3 taluks represent the hard-core areas. The only taluk which escaped being listed as chronically drought affected area is the Siddhout taluk. The hard-core areas are the taluks of Rajampet, Badvel and Proddatur.

Though endowed with plenty of mineral and forest resources, they largely remain unexploited and this district like the other more endowed districts of the State continues to be an agricultural district, the bulk of the income being derived from agriculture. The total cropped area forms only 30.3% of the total geographical area, since the largest area of 38.9% is covered by forests in this district. The percentage of cropped area to the geographical area is the third lowest in the entire State. Of the total cropped area about 68.5% is under food crops and 31.5% under non-food crops. Among the food crops paddy accounts for about 15% while other cereals and millets account for 43%. Among the non-food crops, ground-nut occupies almost the entire area. It would therefore, be seen that the principal crops grown in the district are paddy, other cereals and millets like Jowar, Bajra, Ragi etc., and groundnut. The only other minor crop worth mentioning is cotton which occupies about 2% of the cropped area.

While the percentage of cropped area to the total geographical area is itself low, the percentage of the irrigated area to the total

cropped area is also low being around 31%. This would indicate the dependence of agriculture on the vagaries of monsoon. Obviously therefore, the district has been subjected to recurrence of frequent famine and drought conditions. The scanty and un-reliable rain-fall and its uneven distribution during the crop season has made agriculture in Cuddapah district a veritable gamble. Even among the irrigated areas, only about 31.5% is under assured canal irrigation. The bulk of the area irrigated is through wells accounting for almost 44% of the total area irrigated. About 20 to 25% of the area is irrigated by tanks. Since well and tank irrigation is again dependent on rain-fall, the irrigated area is under precarious sources. All this goes to prove the unstable agricultural situation in the district. Coupled with lack of utilisation of the other natural resources like minerals and forest wealth the district has remained backward economically.

There are 97 registered factories in the district and the average number of workers employed daily is only 1719. In the entire State this is the third lowest number of workers employed, the lowest being Nalgonda in the Telangana region. The low factory employment in the district indicates the very low level of industrial development and it is a paradox that a region endowed with huge mineral resources should continue to suffer for lack of industrialisation. Out of the 97 units, as many as 50 are factories engaged in manufacture of food products and 11 in the manufacture of cotton textiles. Recently 7 Blocks in the district have been selected to qualify for the Central subsidy of 10% on fixed capital investment to develop industrially backward districts.

427 villages and towns forming 47.1% of the total number of villages and towns are electrified. The percentage of population covered by the provision of electricity, the position in this district is comparatively better when compared to the State as a whole.

The district has a total length of 1190 k.m. of roads maintained by the Public Works Department of which only 6 k.m. are cement concrete, while 1008 k.m. are Blacktop/asphalt and 176 k.m. are metalled. Of the 896 villages, as many as 206 villages are not connected by any road. Only 452 villages are connected by all-weather roads while 238 villages are connected only by fair-weather roads. This indicates the need for priority for the communications plan in the development programme of the district. The situation in this district is more or less the same like other districts of the Rayalaseema region.

In the district, 809 villages have primary schools, 90 have middle or upper primary schools, 62 have secondary schools, 6 have higher secondary schools and 4 have Junior Colleges. An effort should therefore be made to promote at least primary schools in a number of villages. The need for augmenting educational facilities is indicated on the basis of the present facilities available.

Regarding health facilities, Health Centres and Sub-Centres are available in about 45 villages and 7 villages have allopathic dispensaries. About 51 villages are having other dispensaries.

Agriculture in the district would continue to be the predominant occupation in the next 15 to 20 years. It is therefore essential to stabilise agriculture in the district. A proper assessment of the ground water resources and a scientific exploitation and systematic development for domestic, irrigation and industrial purposes is the urgent need of this district. Following this, to develop agriculture in the dry areas, greatest emphasis may have to be placed on conservation of the available water through proper soil conservation measures. Both in the dry areas as well as in the irrigated areas, the already low water availability may have to be utilised to the maximum extent possible by scientific water management practices. To the extent possible agriculture should be supported by subsidiary occupations like development of sheep and goat farming poultry and dairy. This integrated approach to the agricultural economy of the district would go to improve the economic conditions of the farmers. The immense scope for mineral development and the strategic location of this district geographically throw up vast possibilities for mineral and industrial development.

11. ANANTAPUR

Anantapur district is the southern most of the "Ceded districts" and is surrounded on the east and north, by Cuddapah and Kurnool districts respectively and on its southern and western flanks by the State of Mysore. The chief river of Anantapur is the Penneru, which is not a perennial stream but comes down in freshes for short periods and thereafter, except for small trickle in the middle of its sandy bed dries up again almost at once. The Chitravati is another river of some significance in this district. With the addition of Rayadurg taluk to this district, Hagari river with its tributary, Chinna Hagari river, running right through the heart of the taluk forms yet another important river of this district. Bhyravarithippa project constructed on this river provides irrigation facilities to Kalyandrug as well as Rayadurg taluks. Apart from these, streams like Kushavati in Hindupur taluk, Swarnamukhi in Madakasira taluk and Tadakaleru and Pandameru in Anantapur taluk and Madaleru in Kadiri taluk are important supply sources to the various large and small irrigation tanks of this district. The district can be roughly divided into three natural regions the northern, the central and the southern. Gooty and Tad patri taluks that can be said to constitute the northern region have large areas of black cotton soil, Anantapur, Kalyandrug, Dharmavaram and Penukonda taluks constitute the central region and Madakasira and Hindupur taluks constitute the southern region, being connected with the Mysore plateau are at a higher elevation than the rest of the district.

The district has an area of 19,125 square kilometres with the total population of 21.15 lakhs-17.39 lakhs rural and 3.76 lakhs urban. The district is less densely populated with a density of population of 111 per square kilo metre. The percentage of rural population is 82.2, while that of urban population is 17.8. Among the Rayalaseema district, this district has the second largest percentage of urban population. The Scheduled Castes population of this district forms 13.16% while the Scheduled Tribes constitute 3.07% to the total population. Of the total population, 42.5% are workers, while 57.5% are non-workers. Among the Rayalaseema districts, this has the largest percentage of workers to the total population. Out of the workers 36.7% constitute cultivators, 88.9% constitute agricultural labourers and 24.4% other workers. The number of females per 1000 males is 947. The growth rate of population during the decade 1961-71 is 19.68, against State average of 20.89%. Among the Rayalaseema districts, this district has the second largest growth rate. Of the 224 urban areas, 11 are located in this district. The number of inhabited villages are 930, while that of uninhabited villages is 28.

The geographical position of the district in the middle of the Peninsula renders it the driest part of the State. March to May are very warm, while it becomes cooler during November to January. Madakasira and Hindupur taluks being in a higher elevation are cooler than the rest of taluks in the district. Anantapur has the lowest normal rain-fall in the State, the annual rain-fall being only 546 millimetres against average normal rain-fall of 890 milli metres in the State. Monsoons evade this part due to its unfortunate situation

Being far away from the east coast it does not enjoy the full benefit of the northeast monsoon and being cut off by the high western Ghats the south-west monsoons are also prevented from penetrating and quenching the thirst of this parched soil. It is therefore, seen that the district is deprived of both the monsoon. The district receives its rain largely through the south-west monsoon and partly through the north-east monsoon. The bulk of this rain-fall is normally during the period between August and October. All the taluks in the Anantapur district receive vary low rain-fall with high co-efficient of variability and hence the district as a whole suffers from extreme unpredictability. This rainfall is insufficient for raising any crop successfully. The district has six different soils, black clay, black loam, black sand, red clay, red loam and red sand. In point of quality, black soils are the best, black loam and red clay rank next, black sand is next in order and red sand is the worst of all. Owing to the extensive ground-nut and cotton cultivation, the value of black soils is greater than that of the other soils. Gooty and Tadpatri taluks have considerable area of black soils. In Gooty most of this lies to the west of a line drawn from Guntakal through Vajrakarur and Lattavaramu to Admidala and forms a continuation of the great cotton soil spreads of the eastern portion of Bellary. The whole of the centre of Tadpatri taluk is covered with black soil. Red soils are predominant outside Gooty and Tadpatri taluks. About two thirds of the area in Hindupur and Madakasira taluks is covered with the more fertile red loams. But otherwise in the rest of the taluks which have preponderance of red soils it has been said that "the poverty of the upland soils beggars description." Of all this miserable area, Kalyandrug is the most wretched.

The district has a gold field situated near Ramagiri. Diamond is known to occur near Vajrakarur. Deposits of barytes occur in the region south-west of Mutsukota on either side of Tadpatri-Anantapur road and north-east and east of Venkatapalle. High grade limestones suitable for the manufacture of chemical lime occurs near Kona Rameswaraswami temple, some six miles north of Yadiki and 10 miles from Rayalacherivu railway station in Tadpatri taluk.

Forests occupy only 10.1% of the total geographical area. This is the second smallest district in respect of forest area in the Andhra region of Andhra Pradesh. In this district several places known as forests but were completely devoid of vegetation. The denser type of forests occur only in Kadiri and Penukonda taluks.

The district is administered through 11 taluks and 16 Community Development Blocks. Of the 16 Community Development Blocks, 10 Blocks have been categorised as backward blocks. There is not even a single block in the district which has been categorised as an advanced block. All the 11 taluks in the district, in other words, the entire district have been declared as chronically drought affected taluks in the State, and unfortunately, everyone of these taluks represent the hard-core area. This indicates the extent of backwardness of the district. The total cropped area of the district forms 52.1% of the total geographical area. The percentage of the irrigated area to the total area is only 14.2. This district has got second lowest percentage of irrigated area to the total cropped area in the Andhra region. The bulk of the

rrigated area is under tanks and wells. Viewed against the very poor rain-fall and its un-even distribution and the very high undependability even these irrigated areas must be acknowledged as areas depending upon precarious sources of irrigation. Of the total cropped area, 69.8% is under food-crops and 30.7% is under non-food crops. The area under paddy in this district constitutes only 6.1% of area under food crops. The principal crops of the district are jowar, ragi, bajra, and other cereals and millets. In Rayalaseema, the district has the largest proportion of area under pulses. The principal non-food crops in the district are groundnut and cotton. Groundnut accounts for as much as 24% of the total cropped area. The yield rates in the district are naturally poor and even under groundnut, the yield is not very high. There are 174 registered factories in the district employing 3,171 persons per day on an average. Bulk of this are engaged in the manufacture of food-products. Manufacture of cotton textiles also accounts for fairly significant number. On the whole, the district should be considered grossly under-developed in the matter of industrialisation. In the matter of electrification, this district should be considered a little more developed in as much as 53.5% of the total number of villages and towns in the district have been electrified. Compared to some of the Rayalaseema districts, the progress under electrification should be considered fairly satisfactory. The percentage of population covered with the provision of electricity is also fairly high, coverage being 73.5%.

The district has 822 miles of roads maintained by the P.W.D. of which 3 miles are cement-concrete, 750 miles black top/asphalt, 57 miles metalled and 12 miles unmetalled/murram roads. Out of the 924 villages, 395 villages are connected by all-weather roads, 298 villages by fair weather roads and only 231 villages forming one-fourth of the total number of villages are not connected by any roads. This district, like other Rayalaseema districts is not very bad compared to the situation existing in the districts of the Telangana region.

There are 2,181 Primary Schools, 92 Upper Primary Schools, 135 Secondary/Higher Secondary Schools in the villages of Anantapur district. The percentage of literacy in this district is 23.84 against the state average of 24.57. The district has 80 Health sub-centres, 23 Health Centres and 65 dispensaries located in the rural areas while 107 villages have other health facilities.

It is thus evident that the greatest impediments for development of this district are the low and un-reliable rain-fall with its un-even spread during the crop season, coupled with shallow soils. The problem of soil erosion is acute. Scientific tapping of under-ground water resources, and rational policy of water management to conserve water are perhaps essential. The potential for sheep and goat development could be exploited to the maximum.

The district lies on the Madras-Bombay railway line and could be considered fairly well served with railways and road facilities connecting Madras, Bombay and Hyderabad. Cotton and Groundnut being grown extensively in this area and other areas of Rayalaseema region, some agro-based industries offer promising prospects. However footwear industries and activities independent of vagaries of monsoon would perhaps be relevant to the district.

12. KURNOOL

The present Kurnool district is situated between, longitudes $76^{\circ} 58'$ and $78^{\circ} 25'$ east and latitudes $14^{\circ} 54'$ and $16^{\circ} 11'$ and is one of the four districts ceded by the Nizam to the British in the year 1,800. On the formation of the Andhra State in 1953, the western boundary of this district was extended by the addition of Adoni and Alur taluks of Bellary district. The district is bounded on the north by the Tungabhadra and the Krishna rivers, on the east by the Guntur and Nellore districts, on the west by the Bellary district of Mysore State and on the south by Anantapur and Cuddapah districts. The taluks of Giddalur and Markapur were recently added to the newly constituted district of Prakasam. Mountain ranges namely, the Nallamalais and the Erramalais extend north and south through the district. Throughout a greater part of its length, a range of hills known as the Veligondas and forming the main edge of the Eastern Ghats separates this district from Nellore district. Nandikotkur taluk, is the crest of the watershed of the Krishna and Pennar rivers about 1,000' above the sea level. The taluks of Pattikonda, Dhone, Kurnool, Adoni and Alur form the northern end of the eastern slope of great Mysore Plateau. It is drained by the river Hundri, which joins the river Tungabhadra near Kurnool town.

This is the second biggest district with an area of 18,799 sq. kms. With a density of population of 105 per sq. kms, the district is one of the sparsely populated districts in the State. The district has a total population of 19.82 lakhs of which 15.80 lakhs is rural and 4.02 lakhs is urban. The percentage of rural population in this district is only 79.30. This is one of the few districts in the State where the proportion of urban population is fairly high. The district has 969 females per thousand males. The Scheduled Castes population forms 11.24 per cent of the total population, while the Scheduled Tribes population accounts for 1.63 per cent. Of the 224 urban areas in the State 10 are located in this district. The workers constitute 42.1 per cent while non-workers accounts for 57.9 per cent of the total population. Among the workers 36.7 per cent are cultivators, 88.9 per cent are agricultural labourers and 24.4 per cent other workers. The climate of the district is on the whole quite healthy, although the villages lying about the foot of the Nallamalais are considered unhealthy. The district has a normal rainfall of 622 m.ms. This is the district with second lowest rainfall in the State. Almost all the rainfall is received during the south-west monsoon period of June to September. The predominant soils of the district are the black soil, the red-clay and the red-loams. The only taluk where the sandy soils predominate is the Pattikonda taluk. The taluks of Alur, Nandikotkur, Kurnool, Adoni, Atmakur and Banganapalle predominate in black soils.

This district is fairly important from the point of view of mineral resources such as barytes, clay, iron-ore and steatite, etc., which are mined economically. It is well endowed with regard to building material and road metal, in that it has extensive out-crops of granite-gneisis, quartzites, sand-stone, dolomite and lime-stone. Barytes are found to occur at numerous places in the district. More important occurrences are near Hussainpuram, Valasala, Chinna Malkapuram,

Tapasikonda, Papasanikottala, Gattamanikonda, Kolumalapalle, Boyanpalle, Erragunta, Rahamanpuram and Ramapuram. White clays occur at Nagalavaram and Peddapadu in Kurnool taluk and at Kosanapalle in Dhone taluk. Copper ore is said to have been worked formerly at Gani and Copper used in the manufacture of bell-metal during the days of Vijayanagar Kingdom. Indian Bureau of Mines and Geological Survey of India have carried out detailed prospecting. Several good deposits of high grade haematite occur in the neighbourhood of Veldurthi and Ramallakota. The reserves of good ore are estimated at about 3.7 million tonnes. There is a considerable quantity of float ore stream on the surface, the reserves of which have been estimated at about 8 lakh tonnes. The reserves of lime-stone suitable for cement manufacture and lime building are practically unlimited. There are some 5,000 million tonnes in Koilkuntla, 600 million tonnes in the Banganapalle, 450 million tonnes in the Dhone, 1,250 million tonnes in the Kurnool and 770 million tonnes in the Nandikotkur taluks of the district. Apart from the minerals indicated above, good deposits of chalk, magnesite, mineral pigments and slate are also present in the district.

In the Rayalaseema region, Kurnool occupies a unique place in the matter of forests. Forests occupy 20.3 per cent of the total geographical area in this district. In the seventies of the last century forests in this district were said to be the finest in the eastern part of the Madras Presidency, where sandalwood and valuable timber was found in the surroundings of Srisailam. The Nallamalais in Kurnool district predominates timber to the tune of 18,000 cubic metres. It also produces 32,000 tonnes of fuel and 70,000 tonnes of bamboo annually. The fuel is exported to Krishna, Guntur and Nellore districts. Some fuel from Atmakur taluk and Nandyal divisions goes even to Hyderabad city.

The district is administered through 11 taluks and 13 Community Development Blocks. Of the total number 7 are backward Blocks and the rest are ordinary. Of the taluks 7 are chronically drought affected taluks. They are Kurnool, Dhone, Adoni, Alur, Pattikonda, Banganapalle and Koilkuntla.

The district has the highest percentage of cropped area to the total geographical area in the State. Cropped area forms 63.8 per cent of the total geographical area as against 46.5 per cent in the Rayalaseema region, 51.4 per cent of the Coastal Andhra region, 47.6 per cent of the Telangana region and 48.7 per cent of the State as a whole. Though the percentage of irrigated area to the total cropped area is the lowest in the Andhra region and second lowest in the entire State, the district has the bulk of its irrigated area under canal irrigation. In other words, the available irrigation facilities are fairly assured ones. Out of the total cropped area 66 per cent is under food crops and 34 per cent is under non-food crops. The principal food crops in the district are jowar, other millets and paddy. However, paddy occupies only 8 per cent of the total cropped area while about 26 per cent of the area is under jowar. The important non-food crops are groundnut and cotton. The yield rates in the district are comparable to the yield rates in the other developed districts of the State.

There are 239 registered factories employing about 9,000 workers on an average per day. This is the only district in the Rayalaseema region which offers high factory employment. The bulk of the industries relate to food and other processing units allied to agriculture.

In regard to rural electrification, 52.5 per cent of the total number of villages and towns are electrified in this district covering 75.8 per cent of the population. The progress of electrification is fairly good when compared to other more prosperous districts in the State.

There are 1,450 k.ms. of roads maintained by the Public Works Department (R & B) of which 2 km. is cement-concrete, 68 kms. black top/asphalt, 270 kms. metalled and 10 km. unmetalled. This district has the highest length of roads maintained by the Public Works Department (R & B.) in the entire State. From the point of view of rural roads, the facilities in this district are not satisfactory, when compared to the other districts in the Rayalaseema region. While 356 villages are connected by all-weather roads and 280 villages by fair weather roads, 247 villages constituting the highest percentage are not connected by any roads.

In the district 1,026 villages have primary schools, while 64 villages have upper primary schools and 127 villages have secondary schools. 28 villages do not have any primary school facilities. There are 83 health centres and 84 dispensaries in the district with 100 other centres having some sort of health facilities.

This district, fairly well endowed with minerals, and benefit of irrigation under two major irrigation sources, contains some of the very backward and drought affected taluks also.

13. MAHABUBNAGAR

During the re-organisation of the States in 1956, Pargi taluk of Mahabubnagar district was transferred to Hyderabad district and Alampur and Gadwal taluks from Raichur district along with Kodangal taluk from Gulbarga district were added to this district. The enlarged district of Mahabubnagar lies between North Latitude 15°-55' and 17°-20' and East Longitude 77°-15' and 79°-15'. The district is bounded by Hyderabad and Nalgonda districts in the North, Nalgonda and Guntur districts in the East, by Kurnool district in the South and by Raichur and Gulbarga districts of Mysore State in the West. Two important rivers namely, Krishna and Tungabhadra flow through this district. The Dindi river, a tributary of the Krishna flows through Kalwakurthi and Achampet taluks and joins the Krishna river 18 miles east of Chandragiri. Minor Irrigation dams constructed across the tributaries Pedavagu and Chinavagu provide irrigation facilities in the neighbouring areas. The district is not benefited by the major river Krishna or its tributary, Dindi. The Rajolibanda diversion scheme, the Koilsagar and the Sarala Sagar projects are important irrigation projects of this district.

The district occupies an area of 18,419 square kilo metres with a density of population of 105 per square kilo metre. The total population of this district is 19.32 lakhs out of which 17.59 lakhs is rural and 1.73 lakhs urban as per 1971 Census. The percentage of rural population to the total population is 91.03 while that of urban population is only 8.97. The district has 988 females per every thousand males a slightly higher number than the State's average of 977. There are 1,459 inhabited villages and 70 uninhabited villages. Out of the 224 urban areas in the State 11 are located in this district. The district has a fairly large percentage of Scheduled Caste population forming 16.84% to the total population. The percentage of Scheduled Tribes population is small being only 0.29%. Of the total population 47.7% are workers and 52.3% are non-workers. Of the workers, 43.8% are cultivators and 32.6% are agricultural labourers and 23.6% are other workers.

The climate of the district is generally hot. Achampet taluk is comparatively cooler while Gadwal and Alampur taluks are considerably hot. The district has an average normal rain-fall of about 673 milli metres, the lowest in the Telangana region. Of the 12 taluks in the district, 2 taluks have a normal annual rainfall of less than 650 milli metres while six taluks have the rain-fall between 650-750 milli metres and 4 taluks between 750—900 milli metres. Of the 12 taluks, in as many as 8 taluks, the percentage variability of rain-fall is more than 20 indicating the very low reliability of rain-fall. Much of the rain-fall is received only through the south-west monsoon during the period June to September.

The predominant soils of the district are black soil, chalka soil and dubba soil. 67% of the villages in the district have predominantly chalka soils, while 20% of the villages have predominantly black soils and 13% of the villages have dubba soil. The Chalka soils predominate in the taluks of Shadnagar, Mahabubnagar

Kalvakurthi, Makthal, Atmakur, Nagarkurnool, Wanaparthi and Kollapur. The dubba soils predominate in the taluks of Achampet and Gadwal, while black cotton soils are found predominantly in the Kodangal and Alampur taluks.

Quartz is one of the principal minerals of this district which is actively being mined at present. Reefs of good quality quartz suitable for manufacture of glass are found at Shadnagar, Balanagar, Timmapur, etc. A total of about 8 million tonnes of quartz was estimated from the deposits in Hyderabad and Mahabubnagar districts. Limestones occur extensively in Alampur and Kollapur taluks. The Cement Corporation of India has recently prospected some areas in Alampur and have proved a reserve of 181 million tonnes of limestone, out of which the reserves of cement grade limestone are of the order of 63 million tonnes. Flaggy limestones are worked from the Gandlapalli area in Kodangal taluk for use as flooring slabs which are sold locally under the name of "Shahabad slabs". Occurrences of Asbestos have been reported from the Narlakona near Somasila in Kollapur taluk. The asbestos fibre is stiff and is of a low grade. Mining is in progress only in a small way and a very small quantity of fibre is raised over years of mining development. Barytes is reported to occur in the Bollawaram R. F. in Kollapur taluk. The deposit is not of commercial significance. The various pink and grey granites and the limestones of variegated colours offer good building stone.

Forests occupy 16.4% of the total geographical area in this district. The forest revenue is not of any significance. Teak forests occur only in patches in Amarabad and on gentle slopes and valleys in Achampet and in patches in Mohammadabad and Kollapur ranges. Mixed Teak forests and Mixed forests offer fairly extensively, but not of any economic significance from the point of view of forest wealth.

The district is administered through 12 taluks and 16 Community Development Blocks. There is one tribal block in the district and one block has been categorised as an ordinary block. The remaining 14 blocks have been categorised as backward blocks. None of the blocks in the district is an advanced block. 10 out of the 12 taluks in the district have been classified as chronically drought affected taluks. The Kalvakurthi taluk of this district is also declared as the hard core area. Only Kodangal and the Mahabubnagar taluks of the district do not fall under the chronically drought affected taluks.

With total cropped area constituting 59% of the total geographical area, it stands second among the districts in the Telangana region in regard to high proportion of cropped area. Of the cropped area, only 12.5% is irrigated. The bulk of the irrigation being through tanks and wells, with a low reliability of rain-fall, the state of agriculture could as well be imagined. About 77% of the cropped area is under food crops, while 23% of the cropped area is under non-food crops. The most important food crop in the district is jowar, accounting for about 31% of the cropped area. The area under paddy is only about 11%. The principal non-food crops in the district are groundnut and castor, accounting for about 13% and 7% of the cropped area respectively. The yield rates in the district are generally poor.

There are 61 registered factories in the district providing on an average daily employment to 1,571 persons. The district provides the lowest factory employment to the workers. However, in the unorganised sector, this district offers the second largest employment in the small scale units. In all, there are 809 small scale units in the unorganised sector providing employment to more than 5,000 persons. The bulk of the small scale units are agro-based. The forest-based units are 48, mineral-based units 12, chemical-based units 26 and others 78. In the Telangana region, from the point of view of industrial employment, this district is slightly in a more advantageous position when compared to the other districts like Hyderabad, and Nizamabad.

Only 408 villages and towns in the district constituting 27.8% have been electrified. However, the percentage of population covered through provision of electricity happens to be the lowest being 48% as against the State average of 67.3%.

There are 1,226 kilometres of roads maintained by the Public Works Department (Roads and Buildings) of which 2 kilometres is cement concrete, 602 kilometres black top/asphalt, 506 kilometres metalled and 117 kilometres unmetalled/murram. In regard to rural communication facilities, this district is comparatively backward. Only 328 villages in the district are connected by all-weather roads and 457 villages connected only by fair-weather roads. As many as 678 villages in the district do not have any road facilities constituting about 46.3% of the total number of villages in the district.

There are 1,701 primary schools, 241 middle schools and 91 secondary schools in the district. 82.2% of the villages in the district have primary schools while 11.4% of the villages have upper primary schools and 7.8% of the villages have high schools. Only about 5% of the villages do not have any primary school facilities within a distance of 8 kilometres. In regard to upper primary schools, about 17% of the villages do not have this facility within a distance of 8 kilometres. About 30% of the villages in the district do not have a high school within a distance of 8 kilometres. There are 22 hospitals and 26 dispensaries in this district. 18.5% of villages have medical facilities. About 49% of the villages do not have any medical facility within a distance of 8 kilometres.

This district presents problems of backward agriculture with its slender natural resource base—though the land availability is high. Exploitation of irrigation sources and dry farming would be important.

14. HYDERABAD

Hyderabad district is bounded on the north by Medak district, on the east by Nalgonda district, on the south by Mahabubnagar district on the west by Bidar district of Mysore State. It lies approximately between 16° 30' and 18° 20' North Latitude and 77° 30' and 79° 30' East Longitude. The most important river of the district is Musi which flows right through the heart of old Hyderabad City. Three taluks of the district are watered by this major river.

It rises near Anantagiri hills near Sivareddipet and flows almost to east. The district is mostly hilly; isolated granite hills are seen everywhere, and the city of Hyderabad is surrounded by rocky eminences, among which may be mentioned the Maula Ali, the Golconda Rock, and the Black Rock at Trimulghery.

The district has an area of 7,707 sq. km. In Andhra Pradesh this is the smallest district from the point of view of area. The total population of the district is 27.92 lakhs of which 9.53 lakhs is rural and 18.39 lakhs urban. The district has the highest density of 362 persons per square kilometre. It is more than twice the density of population for the State as a whole, which is only 157 per square kilometre. The district has the highest urban population being 65.88% to the total population, while it has the lowest proportion rural population of 34.12%. The high degree of urbanisation is due to the twin cities of Hyderabad and Secunderabad. The district has a fairly high percentage of Scheduled castes population which constitutes 14.07% to the total population. However, the Scheduled Tribes is minimal forming only 0.18% of the total population. The district has the largest number of urban areas being 17 out of the 224 in the State as a whole. There are 951 inhabited villages and 84 uninhabited villages in the district. Of the total population 32.4% are workers while 67.6% are non-workers. This is a district with the lowest percentage of workers being 32.4 against the State average of 41.7% of the total workers 20.2% are cultivators, and 18.5% are agricultural labourers and 61.3% are other workers.

The climate of the district is salubrious and equitable, away from the fierce heat and severe cold of the north and the depressing influences of the coast. From October to the end of March the district is very healthy and the climate is most agreeable. The district has a normal rain-fall of 779 mm. Most of the rain is received through the south-west monsoon during June to September. Of the 9 taluks in the district, 2 taluks receive a normal annual rain-fall of less than 650 mm., two taluks between 650 mm. to 750 mm., 3 taluks between 750 mm. to 900 mm., and one taluk between 900 mm. to 1,000 mm. Of the 9 taluks, 7 taluks have a percentage variability of less than 20 and therefore, the district must be considered having a fairly reliable rain-fall.

The predominant soils of the district are black soil and chalka soil. The dubba soil occurs in isolated areas. 40% of the villages in district have predominantly black soils while 51% of the villages have chalka soils and 9% of the villages have predominantly dubba

Soils. Chalka soils predominantly occur in the taluks of Medchal, Pargi, Hyderabad East and Hyderabad west, while black cotton soils occur in Vicarabad, Chevella, Tandur, Pargi. The dubba soils mostly occur in the Ibrahimpatnam taluk of the district.

Although the district may not claim to possess any outstanding mineral resources, it is gifted with deposits of clays, felspar, quartz, ochre, which are exploited in several localities for use in ceramics, paints and allied industries. Granite is quarried extensively in several parts for use as building and construction material. The principal mineral of the district is coarse Quartz. Several large quartz veins near the City of Hyderabad are being extensively exploited. The, more important of these are Kukstpalli, Hyderabad, Bahadurpalli, Bolaram and Himayatsagar. A reserve of about 8 million tonnes of quartz was estimated from the deposits in Hyderabad and Mahabubnagar districts. Felspar veins of good quality and size are available in this district on the Himayatsagar road, 10 km. from Hyderabad. Blue and cream coloured lime-stones are available in this district. Extensive quarries of flag-stones are developed for flag-stone near Tandur. These are sold locally and in the adjoining State under the name of "Shabad Slabs." The Cement Corporation of India have proved reserves of about 173 million tonnes of cement grade lime-stone in the Tandur area. Lim-kankar is quarried in the Anajpur and Tandur areas in Ibrahimpatnam taluk for lime mortar used for building purposes. The sand from the Musi and Esi river beds is extensively quarried for meeting the huge demand of the building industry in the City. Bentonitic clays occur near Srirangapur. Fullers' earth is found below the basaltic traps near Tandur. These clays could be used in ceramic industry after washing, and at present are employed for bleaching of vegetable oils and filtration of petroleum after activation by acid treatment.

Forests occupy only 9.1% of the total geographical area, being the second smallest district from the point of view forests. The district is also not very important from the point of view of the forest wealth.

The district is administered through 9 taluks and 8 Community Development Blocks. Of the 8 Community Development Blocks, 4 are ordinary blocks and 4 have been classified as backward blocks. The district has however four taluks which have been listed as chronically drought affected taluks. Of these taluks, Chevella taluk has been declared as a hard core area.

51.3% of the total geographical area is under cropped area and 16.4% of the total cropped area is irrigated. This is one of the districts in the Telangana region with a low irrigated area. The area irrigated by canals is insignificant. The bulk of the area is irrigated through tanks and wells. 80.2% of the total cropped area is under food crops while 19.8% is under non-food crops. The principal food crops are jowar, pulses and paddy, in that order. Jowar accounts for almost 30% of the total cropped area. The principal non-food crops are castor, groundnut and gingelly. The yield rates of the various crops are fairly normal considering the yield rates of the crops in the State as a whole.

There are 705 registered factories in the district giving the largest employment to over 43,000 workers on an average per day. This is the largest district from the point of view of the factory employment. Some of the public sector undertakings are located in this district. Even in the un-organised sector, the district has 733 small-scale units of which 135 are agro-based, 46 are forest-based, 33 are mineral-based, 14 are chemical-based, 52 are metal-based and 502 are other units. The total employment in un-organised sector is about 5,400 workers per day on an average.

451 villages and towns in the district are electrified accounting for 46.4% of the total number of villages and towns. This is the second largest district from the point of view of electrification. The percentage of population covered with the provision of electricity is the highest in the State being 87.7% against the average of 67.3% for the State as a whole.

There are 906 km. of roads maintained by the Public Works Department (R. & B.) of which 93 km. are cement concrete, 144 km., are blacktop/asphalt, 176 km. are metalled and 11 km. are unmetalled/murram. Also from the point of view of rural communications, this district is fairly well placed. 275 villages in the district are connected by all-weather roads and 415 villages are connected by fair-weather roads. 258 villages forming only 27.2% of the total number of villages are not connected by any road at all.

There are 1,567 primary schools, 388 middle schools and 183 secondary schools in the district. 80.70% of the villages have primary schools, 12.4% of the Villages have upper primary schools and 5.2% have high school facilities in this district. Only less than 4% of the villages do not have any primary school within a distance of 8 km. while about 14% of the villages do not have upper primary schools within a distance of 8 km. and 44% of the villages do not have any high school facilities within a distance of 8 km. There are 23 hospitals and 51 dispensaries in the district. 20.2% of the total number of villages have some medical facilities and 9.2% of the villages have medical facilities within a distance of 3 km. and about 42% of the villages do not have any medical facilities within a distance of 8 km.

The developmental trust of this district would, thus very much hinge on the development of metropolitan area, ensuring opening up the areas and linking up with the city.

15. MEDAK

With Nizamabad and Karimnagar districts on the north, Warangal and Nalgonda districts on the east, Hyderabad district on the south and Bidar district of Mysore State on the west, the present Medak district lies between 17° — $27'$ and 18° — $19'$ of northern latitude and 77° — $28'$ and 79° — $10'$ of eastern longitude. The district is not drained and watered by any worth mentioning rivers. The river Manjira, which is a tributary of river Godavari is the only major river in the district which enters the district from Bidar and flows for about 100 km. in length throughout its eastern and north western taluks namely, Narayankhed, Zaheerabad, Sangareddy, Narsapur and Medak. The river Haldi which is also known as Pasupueru flowing through Medak town and the Kudlair in Siddipet taluk are the other important streams in the district.

The district occupies an area of 9,685 Sq. km. with a density of population of 152 per sq. km. The total population of the district is 14.68 lakhs of which 13.43 lakhs are rural and 1.25 lakhs urban. The district is very much less urbanised, in that it has got the second lowest proportion of urban population being 8.5 per cent against the State average of 19.3 per cent. The rate of growth of population during the decade 1961-71 was 19.1 percent in the district against the State average of 20.9 percent. The district has a slightly larger number of females being 986 for every 1,000 males as against 977 males for the State as a whole. Among the total population, 45.7 per cent are workers which is higher than the State average of 41.4 per cent. Out of the workers, 44.8 per cent constitute cultivators, 33.2 per cent agricultural labourers and 22.5 per cent other workers. It will therefore, be seen that a large percentage of workers depend upon agriculture, the percentage of cultivators and agricultural labourers put together to the total workers being as much as 77.5 percent. The district has a slightly higher percentage of Scheduled Castes population, the percentage being 15.8 against the State's average of 13.8. However, the Scheduled Tribes population is insignificant constituting only 0.01 percent against State average of 3.8 percent. The total number of inhabited villages is 1228, the number of uninhabited villages being 82. Out of 224 urban areas in the State, 8 are located in this district.

The district has a normal rainfall of 942 mms., the bulk of which as in the other areas of the State, is received through the south-west monsoon during June to September. The normal rain-fall of the district is slightly higher than the average normal rain-fall of the Telangana region or the State as a whole. The normal rain-fall is between 900 mms. and 1000 mms. in five taluks while it is between 750 mms. and 900 mm in two taluks and less than 750 mm in one taluk. However the dependability of the rain-fall in this district is not high, since in as many as 4 taluks, the percentage variability is more than 20 indicating the low reliability of rainfall. The climate of this district is generally agreeable and healthy, from September to June but during the rainy season, owing to excessive humidity of the atmosphere, malarial fevers prevail in certain areas like Medak, Ramayampet etc.,

The predominant soils in the district are black soil (regur,) chalka (sandy loam) and dubba. About 45 percent of the villages

in the district predominantly contain black soil while 48 percent of the villages predominate in chalka soil and only 11 percent of the villages have dubba. The chalka soils in the district predominate in the taluks of Siddipet, Gajwel and Narsapur while black cotton soils predominate in Sangareddy, Narayankhed, Andole and Zahirabad taluks. The dubba soils occur mostly in Medak taluk.

The economic minerals that occur in this district are quartz, ochres, clays, and building materials. Good quality quartz useful for glass industry occurs in the reefs near Andole, Jogipet, Shankarampet and Pannapet. Of these, the Andole-Jogipet density is estimated to have a reserve of 5.5 lakh tonnes. Red and yellow ochres occur at Sheikhapur and Jaheerabad. Sheikapur area is being exploited on small scale for the past several years. White clay of residual origin in deposits of considerable quantity occurs near Sheikhapur. Many of the granites as also some varieties of deccan traps found in the district yield enormous quantities of building stones and road materials.

The forest area in this district is very small, constituting only 10 percent of the total geographical area. The forests in this district which are of the "South Indian Dry Deciduous Teak Type" would have contained a rich crop of valuable teak but for the adverse edaphic and biotic factors created by man. As it is teak is growing in a very miserable state wherever it has been holding on and nature is working on its way towards a gradual ousting of teak by other species. Only 80% of the forest area has teak plantations in the district. In Medak district, the mixed forest type is predominant where the trees are mostly shunted, malformed and unsound. Natural regeneration is practically absent on account of the unchecked grazing of all types of cattle including goats and sheep, frequent occurrence of fires.

The district is administered through 8 taluks and 10 Community Development Blocks. Out of the 10 Blocks as many as 5 are categorised as Backward Blocks and the remaining five as Ordinary Blocks. None of the Blocks in the district is classified as an Advanced Block. One of the taluks of the district namely, Narayankhed, is included in the list of chronically drought affected taluks in the State.

About 54.3 percent of the geographical area constitutes the total cropped area in this district. The percentage of cropped area in this district is higher than that in the Telangna region or the State as a whole. Of the cropped area only 21.8 per cent is irrigated. Of the irrigated area, a large percentage of area is under tanks and wells indicating the precarious nature of irrigation, since the sources of irrigation and low reliability of rain-fall make irrigation highly undependable. 89 percent of the cropped area is under food-crops, while 11 percent is under non-food crops. Paddy, jowar, other cereals, and pulses constitute the principal food-crops, while ground-nut, gingelly and castor account for the maximum area under non-food crops. The largest area under food-crops is covered by jowar followed by paddy. The yield rate of rice during the year 1970-71 was 1,214 kgs. per hectare while the yield rate of Jowar was 458 kgs. The yield rate of rice is below the average yield rate for the State as a whole or for the Telan-

gana region, while it is higher in the case of jowar. The yield rate of groundnut is almost the same, as the average yield rate for the Telangana region as a whole.

There are 280 registered factories in the district with an average daily employment of 3,475. The number of small scale units in the un-organised sector is 139 with an average employment of 1,054 persons. Of these 82 are agro-based, 17 forest based, 5 mineral based, 2 metal based and 33 other units.

Only 371 villages and towns constituting 30 percent of the total number of villages and towns in the district are electrified. In regard to the electrification, this is the second district from the below, the lowest being Mahabubnagar district. The percentage of towns and villages electrified is only 30 against 34.8 percent in the region and 35.7 percent for the State as a whole. The percentage of population covered with provision of electricity is low being only 51.1 percent against the State average of 67.3 percent. In the Telangana region, this is the second lowest and when compared to the other districts in the State also, this happens to be the second lowest.

The total length of roads maintained by the Public Works Department (R & B) is 914 kms. of which 610 kms. are black topped/asphalt concreted, 241kms are metalled and 63 kms are unmetalled/murram. There are no cement concrete roads in the district. There are 609 villages in the district which are not connected by any road, the number of villages connected by all-weather roads being 281 and the number of villages connected by fair weather roads being 332. In rural communications, this district is placed in a very un-favourable position. The number of villages not connected by any roads is as high as 49.8 percent. The only other district where the percentage of villages not connected by any road, is higher than this, is Adilabad in the Telangana region.

There are 1389 Primary Schools, 204 Middle schools and 78 High/Higher Secondary schools in the district. 12.3 percent of the villages in the district do not have any primary schools, 9.8 percent of them have no school within a distance of 3 kms. and 2.5 percent have no school within a distance of 3 to 8 kms. From the point of view of educational facilities, this district is in a slightly better position when compared to the other districts of the region. From the point of view of facilities for Upper Primary education, 87.6 percent of the villages in this district do not have any Upper Primary School. In the matter of High School education facilities, the district has the largest facilities in the Telangana region since 11.4 percent of the villages have High Schools.

There are 17 hospitals and 37 dispensaries in the district. However, 82.2 percent of the villages do not have any medical facility and 43 percent of them have no facilities within a distance of 8 km.

This district, with its proximity to Hyderabad Metropolitan area can orient its economy to meet the emerging demand for agricultural products from the City. Items such as animal husbandry and dairying show promise—though in most areas the thrust may have to be in terms of dry farming.

16. NIZAMABAD

The present district of Nizamabad is bounded on the north by Adilabad and Nanded districts, on the east by Karimnagar, on the south by Medak district and on the west by Nanded district. It lies between 18°-5' and 19° of the northern latitude and 77°-40' and 78°-37' of the eastern longitude. Being situated in the table land of the Deccan, hills of any considerable size are quite rare in this part of country though isolated peaks are rocky clusters occur frequently which are so characteristic of the Deccan. The principal rivers flowing in this district are the river Godavari on the northern boundary separating it from Nanded and Adilabad districts and Manjira, the Chief tributary of the river Godavari. The river Manjira crosses the district from the south-west and joins the Godavari near Kaudukurthi in Bodhan taluk. The Nizamsagar Project constructed across this river at Achampet in Banswada taluk forms a major source of irrigation with its splendid net work of canals. Apart from this, a small stream, the Phulong traversing the Nizamabad and Armoor taluks also feeds some of the irrigation tanks. The Yadlakattu Vagu, a perennial stream flowing in the dry areas of Kamareddy taluk and Alair river are of considerable importance.

The district covers an area of 7,969 sq.km. and the density of population is 165 per sq. km. The district is more densely populated in as much as the density of population is more than State average of 157 per sq. km. The total population of the district is 13.13 lakhs, of which 11.04 lakhs is rural and 2.09 lakhs is urban. The percentage of urban population is only 15.9 and that of rural population 84.1. The district is less urbanised than the State as a whole since the percentage of urban population is only 15.9 against the State average of 19.3. The Number of females per 1,000 males is 999 more than the State average of 977. Of the total population 45.6% are workers against 41.4% of the State as a whole. Of the workers 40.2% are cultivators, 25.6% are agricultural labourers and 34.2% are other workers. The Scheduled castes form 15.2% of the total population which is 1.9% more than the State average, but the scheduled tribes population is considerably less being 0.04% against the State average of 3.8%. The number of in-habitated villages is 863 and that of un-inhabitated villages 52. Out of the 224, in the state only 6 urban areas are located in the district.

This is one of the districts in the Telangana region which receives the largest amount of rainfall, the normal rainfall being 1014mm against the region's average of 894 m.m. and the State average of 890 m.m. Considering the location of the district which lies in the middle of the Deccan Plateau and in the path of south, south-west and north-east monsoons, the rainfall in the district should be considered not adequate. The district receives practically all the rainfall through the south-west monsoon between June and September. The rainy season commences with the on set of south-west monsoon in the latter part of June and ends in the month of October with its closure. The district being situated at a considerable distance from the sea coast has the usual tropical climate. As it is favourably situated in the Deccan plateau at a fairly good elevation about 2,000 ft

above the sea level the climate is considered to be quite pleasant. It is dry and sultry from February to the end of May and damp during the rainy and cold seasons.

The district contains mostly two types of soils namely Black soil (Regur) and chalka (sandy loam) about 55% of the villages have predominantly black soils while 45% have chalka soils. While the taluks of Armoor, Nizamabad, Kamareddy and Yellareddy have predominantly chalka soils, the taluks of Bodhan, Madnoor and Banswada have black cotton soils.

This district is not rich in mineral wealth. However, iron ores of poor quality occur at a few places, as a lateritic lapping and as ferrogenous quartzites. Aluminous boles assaying 25 to 35% of alluminium ore are reported from Goorjekuntla, Kamareddy taluk and Kyrtlapalle in Yellareddy taluk, while calcareous Kaolinised earth is found near Thippalur, Bhiknoor and Kupriyal. Granites of various shades and the Deccan trap rocks yield excellent material for building and road material.

In Nizamabad 22.2% of the Geographical area is under forests. The percentage area under forests is the third largest in the Telangana region. The forests in the district fall under the category of southern tropical dry deciduous types. Roughly 40% of the area of forests is covered by teak plantations. Teak, ebony, black-wood and timber are seen in thick forest belts. In the past the district was famous for teak forests but due to ravages of time and irregular and unscientific exploitation much of the best tree growth was rooted out. The forest produce chiefly constitutes timber fuel, bamboo and beedi leaves which yield good revenue.

The district is administered through 7 taluks and 9 Community Development Blocks. Of the 9 Blocks 4 are categorised as Backward Blocks and the remaining as ordinary Blocks. Even in this district which is considered comparatively a prosperous district there is not even a single Block which has been categorised as advanced Block. However, no taluk in the district falls in the list of chronical drought affected areas in the State.

The total Cropped area in the district forms 43.4% of the total geographical area but the largest proportion of the area irrigated among the Telangana districts is in this district. The proportion of irrigated area to the total cropped area forms 44.8%. It is more than double the percentage of area irrigated in the Telangana region. Bulk of the irrigated area is under food crops. Of the cropped area 91.3% is under food crops the highest in the State during 1970-71, and 8.7% of the cropped area is under non-food crops, the lowest in the State. The Principal crops in the district are paddy forming 37.7% of the area, jowar forming 16.4%, other cereals and millets forming 13.2% and pulses forming 15.1%. Among the non-food crops groundnut is the principal one. The district has recorded the highest yield rate in rice being 1769 kgs. per hectare. The yield rate of sugar-cane also is fairly high being about 80 tonnes per hectare.

There are 159 registered factories with an average daily employment of 6,668 workers. In the Telangana region this district has the second largest number of factories with largest factory employment. Excluding Hyderabad district this will be the district with the largest number of factories and factory employment. In the un-organised sector there are 255 units engaging 1973 workers per day. Of these 119 are Agro-based Industries, 29 forest based, 22 metal based and 82 other Industries, including Automobile repairs, general engineering etc.

In Nizamabad district 311 towns and villages forming 35.9% of the total number are electrified. The percentage of population covered is 66. The electrification of the district should be considered inadequate considering the general level of economic development of the district. The percentage of population covered is lower than that in the State as a whole.

The district has a total length of 885 kms. of roads maintained by the Public Works Department (Roads and Buildings) of which 26 kms. are cement concrete, 531 kms. black top/asphalt, 250 kms. metalled and 72 kms. unmetalled/murram. There are 259 villages not connected by any road while 328 villages are connected by all-weather roads and 276 villages by fair-weather roads. The villages in the district by and large have communication facilities since the percentage of villages not connected by any roads is the second lowest in the entire Telangana region.

There are 951 primary schools, 121 middle schools and 48 High/Higher secondary schools. 17.7% of the villages do not have any primary schools. 13.3% have schools within a distance of 3 kms. and 4.1% within a distance of 3 to 8 kms. Compared to the general level economic development, educational facilities should also be considered poor since even Mahboobnagar has only 17.7% of the villages not having any primary schools.

In the district there are 11 hospitals and 21 dispensaries. 40% of the villages in the district have medical facilities which is the second largest proportion in the region. While 12.7% of the villages do not have any medical facilities within a distance of 3 kms. 25.4% do not have this facility within a distance of 3 to 8 kms. and 21.9% within a distance of 8 to 16 kms.

With assured irrigation facilities and largest rain-fall in Telangana area this district holds the prospects for a highly developed intensive agriculture and agro-based industries.

17. ADILABAD

Adilabad District extending over 16,133 square kilometres lies between 77°-47' and 80° of the eastern Longitude and 18°-40' and 19°-56' of the northern Latitude. It is bounded on the north by Yeotmal and Chanda districts of Maharashtra State on the South by Karimnagar and Nizamabad districts and on the west by Nanded district of Maharashtra State. The most important river that drains the district is the river Godavari. Penganga forms part of the northern boundary of the district in Adilabad taluk while Wardha and Pranahita rivers form the northern and eastern boundaries of this district respectively and drain the borders of the district. River Godavari forms the southern boundary separating this district from Nizamabad and Karimnagar districts. The rivers next in importance are Kadam and Peddavagu. River Penganga falls into river Wardha which in turn joins Pranahita.

The district has a total population of 12.88 lakhs of which 10.83 lakhs is rural and 2.05 lakhs urban. The density of population of this district is 80 per square kilometre. The district thus has the lowest density of population in the entire State. The number of females per 1,000 males is 976 and is almost the same as that of the State average of 977. The percentage of rural population in this district is 84.08, while that of urban population is 15.92. Of the total population 42.6% are workers while 57.4% are non-workers. Among the workers 38.6% are cultivators, 32.8% are agricultural labourers, 28.6% other workers. The Scheduled Castes population form 17.62% of the total population and therefore this is one of the districts where the percentage of Scheduled Castes population is very high, the average of the State being only 13.27. The district has also a high percentage of Scheduled Tribes population. The Scheduled Tribes form 13.14% of the total population against the State average of 3.81.

The climate of this district is hot and moderately humid. The district has an average normal rain-fall of 995 millimetres which is higher than the annual normal rain-fall for the State as a whole. Almost all the rain-fall of this district is received from the south-west monsoon during June to September. Of the 10 taluks in the district, 4 taluks receive a normal annual rain-fall between 889 mm. and 1,016 millimetres per annum. In only two out of the 10 taluks, the percentage variability of rain-fall is more than 20 indicating the low reliability but in as many as 8 taluks of the district, the percentage variability is less than 20 indicating a fairly reliable rain-fall in the district.

The predominant soil in the district is black soil, while charka and dubba also occur in less than one third of the area. While 72% of the villages have predominantly black soils, 19% of the villages have chalks soils and the remaining 9% of the villages have predominantly dubba soils. The only taluk where charka soils predominate is the Khanapur taluk. Dubba soils occur predominantly in Asifabad while the rest of the taluks have predominantly black cotton or regur soils.

The principal mineral resources of this district are coal, clays lime-stone, manganese, iron-ore and building stones. The coal reserves are found in the Pranahita—Godavari valley. The Singareni Collieries have extensively developed the Bellampalli and Ramakrishnapur coal fields in this district. Fire clay deposits are found in Pachegaon and Rallapet in Asifabad taluk. The clay is suitable especially for refractories and stone-ware. The deposit is estimated to have a reserve of 5 to 6 million tonnes of clay over an area of 2.6 Sq. kilometres. Lime-stone occurs extensively in the north and west of Adilabad in the forests near Mancheerial. The Asifabad area is estimated to have a reserve of 50 million tonnes of high grade lime-stone suitable for use in the Chemical industries. The reserves in Ralli reserve forests are estimated of the order of 600 million tonnes. Some minor occurrences of manganese ore were recently brought to light in Adilabad taluk at Jamadapur, Pimpakunta and Peepalkothi. About one thousand tonnes of ore is annually produced from these deposits. Low grade iron ores are available in Dharwar bands at Chityal, Kallela and Dasturabad. A total reserve of 17.5 million tonnes of ore was estimated. The granites, lime-stones and sand-stones and the Deccan trap rock found in the district provide huge quantities of good building stone.

The district has a large forest area. The area under forests is over 7 lakh hectares forming 43.6% of the total geographical area. The large forest area is very important source of income to the State and provided raw-material for some industries, building materials and is a major supplier of firewood. The forests and the best teak growth is found in Khanapur, Manda and Paimandal blocks and in patches in Utnur, Sirchilam and Ajharwajhar blocks in Adilabad and Nirmal divisions. The bamboo forests are located abundantly in Mancheerial division. They are also found in Asifabad division. The Anduk type forests are located in Asifabad division in Manikgarh, Dhanora, Ada, Kukudhanti, Tiryani and Garlapet blocks. 54% of the area under forests have teak plantations while 27% has bamboo plantations. The forest revenue per square kilometre in Adilabad circle is the highest accounting for 2,420 rupees. The total forest revenue is also the highest accounting for over 177 lakhs of rupees.

The district is administered through 10 taluks and 11 Community Development Blocks. 2 tribal blocks are located in the district, while the remaining 9 blocks are classified as backward blocks. None of the blocks in the district is classified as ordinary or advanced, indicating the extent of economic and social backwardness of the district. None of the taluks have been categorised as a chronically drought affected taluk.

Only 38% of the geographical area constitutes the total cropped area of the district. Of the cropped area, only 6.7% is irrigated. Which is the lowest in the State. Out of the total irrigated area canal irrigation accounts for less than a third of the area, the other 2/3 of irrigated area depending upon tanks and wells. 73.9% of the cropped area is under food-crops, while 26.1% is under non-food-crops. The principal food-crops in the district are jowar and pulses accounting

for about 58% of the cropped area. Among the non-food crops, cotton and gingelly form most important crops. The yield of rice per hectare in this district was the lowest during the year 1970-71 but in respect of jowar it was slightly higher than the average for the State as a whole. On the whole, the yield rates in this district are said to be satisfactory. There are 52 registered factories in the district providing employment on an average to about 7,500 persons per day. The number of small scale units in the unorganised sector is 74 providing employment to 537 workers per day. The district provides largest factory employment, second only to the Hyderabad district because of the industrial complex in Sirpur Kagaznagar. The Sirpur Paper Mills, the Silk Factories, Bellampally Chemicals and Fertilizers Factory, the Cement Factory, Mancherial are important large scale industries in the State. Among the industries, the Toy Industry of Nirmal is very famous and its products are exportable.

Only 351 villages and towns in this district are electrified accounting for 22.6% of the total number of villages and towns. The percentage of villages and towns covered with electricity is the lowest in the Telangana region and falls very much short of the percentage for the region as a whole which is 34.8. The percentage of population covered with the provision of electricity is 54.1%.

The district has 6,567 km. of roads maintained by the Public Works Department of which only 3 km. are cement concrete, while 567 km. are blacktop/asphalt and 86 km. are metalled. From the point of rural communications, this district is very unfavourably placed. Only 219 villages in the district are connected by all-weather roads while 176 villages are connected by only fair-weather roads. As many as 1,149 villages forming 74.4% of the total number of villages are not connected by any roads at all. The percentage of villages not having any road facilities is the highest in the Telangana region.

There are 1,290 primary schools, 92 middle schools and 35 secondary schools in the district. From the point of view of educational facilities at the primary level the district is the second backward district with only 66.1%.

18. KARIMNAGAR

Karimnagar district is one of the few districts with good natural resource endowment both in agriculture and industries. It lies between 17°50' and 19°5' northern latitude and 78°29' and 80°22' eastern longitude. The mighty Godavari river forms northern and eastern boundary of the district separating it from Adilabad district. The district is bordered in the south by Warangal and Medak districts and in the west by Nizamabad district.

The total geographical area of the district is 11,824 sq. km. with a population of 19.46 lakhs of which 89.3 per cent are living in rural areas and 10.7 per cent in urban areas. The percentage of urban population is a little more than half of the State average of 19.3 per cent. The density of population per sq. km. is 167 which is slightly higher than that of the State. There are 11 towns, 1,051 inhabited villages and 36 un-inhabited villages. The sex-ratio of the district is 985 females per 1,000 males. The Scheduled Castes population in the district forms 18.82 per cent of the total population and the Scheduled Tribes 0.84 per cent. Population in the district has grown by 21.12 per cent during the decade of 1961-71 as against the State's percentage growth of 20.90.

The total number of workers in the district forms 46.1 per cent of the total population. Among workers, cultivators account for about 35 per cent and agricultural labourers 33 per cent. Thus, nearly 68 per cent of the workers are engaged in agriculture. Workers in manufacturing, servicing and repairs forms about 13.4 per cent. Other sectors account for 18.6 per cent.

The climatic conditions of this district are moderate, except at Ramagundam situated in the Sultanabad taluk, where the maximum and minimum temperatures are extreme. Ramagundam area is known to be one of the hottest places in the State. The months of March, April, and May experience severe summer and monsoon starts in June. The weather is cold and dry from November to February. The maximum temperature in the peak summer, *i.e.*, May, is 41.4°C and the minimum temperature in December is 15.0°C.

The normal rainfall in the district is 914 mm. Nearly 80 per cent of this (742 mm.) is received in the south-west monsoon. The percentage variability of rainfall varies from 10 to 20 per cent between different taluks. None of the taluks were classified as chronically drought affected taluks because of general satisfactory conditions in the district.

The soils occurring in the district are regur and dubba soils. Nearly 65 per cent of the villages in the district have predominantly dubba soils and 27 per cent have regur soils. Only 5 per cent are chalka (sandy loam) soils.

A major portion of the district is occupied by peninsular granite complex comprising the pink and gray granites. Important minerals like coal, iron-ore and lime-stone occur in this district. The Jangaon coalfield south of the Godavari river in Sultanabad taluk is exploited

by Singareni Collieries Ltd. Low grade iron-ore with less than 40 per cent iron content in the form of banded hematite magnetite quartzites occurs in Sultanabad and Jagtial taluks. Cement grade limestone occurs extensively in Sultanabad Taluk. Reserves of limestone near Narella were estimated to be of the order of 150 million tonnes. The limestone of Palkurti area near Ramagundam are under exploitation for use in Cement manufacture. The total forest area in the district is about 2.44 lakhs hectares and nearly 36 per cent of this area is having teak. The important species commonly known in these forests apart from Teak are Bejasal, Maddi, Rosewood etc. Besides, minor forest produces like beedi leaves, grass, lac, honey etc., are also found out from which considerable revenue is realised. The most important revenue fetching products are timber and beedi leaves. The forests offer livelihood to lambadas who are professionally cattle breeders, by way of providing the necessary grazing facilities.

The district comprises of 7 Taluks and 14 Community Development Blocks. Of the 14 Blocks, 4 were declared as Ordinary Blocks and remaining as Backward Blocks.

Of the total geographical area of 11.9 lakh hectares, 20.5 per cent is occupied by forests while net area sown accounts for about 42.3 per cent. Out of the total cropped area including area sown more than once 74.1 per cent is under food crops and the rest under non-food crops. Among the food crops, cereals and millets account for 60.2 per cent. About 23 per cent of total cropped area is under paddy and another 23 per cent under jowar. Other Cereals and millets, of which maize is an important crop, account for 14 per cent of the total cropped area. Area under maize in this district is the largest of all other districts. The district accounts for nearly 30 per cent of the total area under maize in the State. Among the non-food crops nearly 50 per cent of the area is under groundnut and gingelly, which account for 13.8 per cent of the total cropped area in the district. The yield of rice in the district is one of the lowest among the districts being 687 kgs. per hectare. However, in present years the yield rate has increased rapidly and the yield recorded for 1970-71 was 1,307 kgs. per hectare. The yield of maize in 1970-71 was highest at 1,495 kgs. per hectare in the entire State. The yield of groundnut was also one among the highest in the Telangana region being 845 kgs. per hectare.

The total irrigated area in the district constitutes 30 per cent of the total cropped area. Most of this is irrigated by tanks and wells. Tanks account for nearly 45 per cent of the total irrigated area and wells for 40 per cent. This district is likely to be benefited by Pochampad Project which is now under construction and as a result, the irrigated area in this district is likely to go up very fast in the coming years. The additional area likely to be irrigated by Pochampad Project in this district is 2.3 lakh hectares. After the completion of Pochampad Project, the percentage of irrigated area in the district is likely to improve to 44 per cent.

There are 102 factories registered under the Factories Act employing 2,598 workers. Most of these factories are agro-based and forest-

based units. There is one cement manufacturing unit employing 625 workers. There is also Thermal Power Station based on coal near Ramagundam. A fertiliser factory is under construction based on coal at Ramagundam. Apart from this, there is not much of industrial activity in this district. This district was selected to qualify for concessional finance from the financial institutions and 4 Blocks of the district have been selected to qualify for the central subsidy at 10 per cent of fixed capital investment in industries.

The district has vast resources of coal which can be used for thermal power generation. At present there is a thermal power generating station of 65 M.W. capacity. The number of electrified towns and villages in the district comprises 55 per cent of the total number of towns and villages covering about 66 per cent of the total population.

In regard to communications this district has 669 kms. length of road maintained by the Public Works Department (R. & B.) of which 470 km. are blacktopped and 186 km. are metal surfaced. Regarding the accessibility of villages, there are 235 villages or about 22 per cent of the total villages which are connected by all-weather roads. The villages without any road communication are 478 forming nearly 48 per cent. Thus, in this district, the accessibility of villages is one of the poorest in the State. There are 1,207 Primary schools, 174 Upper Primary Schools and 124 High Schools in the district. In regard to higher education, there are 9 Junior Colleges, 3 Arts and Science Colleges in this district. 921 or 91.5 per cent of the villages in this district are having Primary Schools and 21.5 per cent of the villages are having Upper Primary Schools. More than 16 per cent of the villages in the district are having Upper Primary Schools beyond 8 km. distance. Nearly 11 per cent of the villages are having High Schools at a distance of more than 16 km.

There are 241 Government Hospitals and dispensaries in the district with a total bed strength of 430 which works out to 22 beds per lakh population. Regarding the accessibility of hospital facilities, 411 villages are having a hospital or dispensary at a distance beyond 8 km. which shows the poor availability of medical facilities to rural population in the district.

The district holds good prospects for rapid economic development if the natural mineral resources of coal and limestone are utilised for industrial development and if the additional irrigation facilities arising out of Pochampad Project and the groundwater resources available in the district are utilised judiciously for the development of agriculture. Highest priority has to be given for development of agriculture by rapid utilisation of irrigation potential created by Pochampad Project and groundwater along with the simultaneous introduction of high yielding varieties of maize, rice etc., and popularisation of the use of fertilisers, and pesticides for these crops. These programmes are to be supported by a plan for better communications for linking production centres with marketing centres and development of necessary infrastructural facilities like warehousing, processing etc.

19. WARANGAL

Bounded on the north by Karimnagar district, on the west by Medak, on the south by Nalgonda, on the west and south-east by Khammam district, the district of Warangal lies between the latitudes 17°—19° and 18°—36° north, and longitudes 78°—49° and 80°—43° east. The railway line between Madras and Delhi passes through this district. The district offers adequate higher educational facilities since Warangal town, the Head quarters of the district has one Regional Engineering College, a Medical College and Post-graduate centre.

The area of the district is 12,875 sq. kilometers with a population of 18.71 lakhs. The rural population is 16.20 lakhs while the urban population is 2.51 lakhs. The density of population of the district is 145 per square kilo metre. The percentage of rural population to the total population is 86.6 per cent while that of urban population is 13.4 per cent. The number of females per 1,000 males is 956. The Scheduled Castes form 15.87 per cent of the total population while Scheduled Tribes form 2.31 per cent of the total population. Out of the 224 urban areas the number of urban areas located in this district is 4. Of the total population 42.6 per cent are workers. Among the workers, cultivators form 34.7 percent, agricultural labourers 37.3 per cent and other workers 28 per cent. The total number of inhabited villages are 981 while the un-inhabited villages are 104. The normal rain-fall of the district is 1,016 mm, 82 per cent of which is received through the south west monsoon between June and September. Of the 6 taluks 4 taluks in the district receive a normal rain-fall of 1000 mm. and above. The distribution of rain-fall in the district should be considered fairly reliable since only one out of six taluks has a percentage variability of 20 per cent and above. Since this district is situated at a considerable distance from the Sea coast it normally tends to be dry and there is also not much fluctuation in the temperature.

The predominant soils of the district are black soil (regur), chalka (sandy loams) and dubba (loamy sands). A large number of villages have chalka soil the percentage number of villages having predominantly this soil being 64. The regur soil occurs in 21 per cent of the villages and dubba in 14 per cent of the villages.

The mineral resources of the district are coal, iron ore and building stones. While low grade iron ore is found in the Yerraballi area about 13 km. from Khajipet, about 24 million tonnes of low and high-grade iron ore occurs in Nilancha south of Pakhal lake and in Nawabpet in parkal taluk. The coloured stones with zebra type stripes occur at Pasra in Mulug taluk.

The district has an extent of 8.29 lakh acres under forests. The forests in this district constitute 12.3 per cent of the total forest area in the Telangana region. Warangal is the third largest district in the Telangana area in regard to forest area. Teak is an important forest produce of this district.

The district is administered through six Taluks and 14 Community Development Blocks. Of the 14 Community Development Blocks, 9 are Backward Blocks, one a Tribal Block and the remaining Ordinary Blocks. There is not even a single Block in the district which has been categorised as Advanced Block. None of the taluks in the district is declared as a chronically drought affected area.

The total cropped area of the district forms 47.1 per cent of the total geographical area. Of the cropped area, 28.8 per cent is irrigated. Of the cropped area 86.8 per cent is under food crops and 13.2 percent under non-food crops. Among the food crops, 63.3 per cent is under cereals and millets of which about 22.2 per cent is under paddy. Among the food crops, 63.3 percent is under cereals and millets of which about 22.2 per cent is under paddy. Among the other food-crops pulses account for significant area since it forms about 20 per cent of the total cropped area. Among the non-food crops, the most important is groundnut which accounts for 8.3 per cent of the area. The principal crops of the district are therefore, paddy, jowar (having the largest area), pulses and groundnut. The principal sources of irrigation in the district are tanks and wells, the area irrigated under wells accounting for 22 per cent while that under tanks 68 per cent. The canals irrigation constitutes only 8 percent of the total irrigated area. Even so, in view of the fairly large and reliable rain-fall, the district does not normally suffer on account of the vagaries of monsoon. The yield rate in the district compared to the other districts in the Telangana region are fairly high since the yield rate of paddy is the second highest while it is the third highest in respect of jowar and the second highest in respect of bajra.

The number of registered factories in this district is 149 with the average number of workers employed per day being 8,256. Barring Hyderabad district, this district provides the largest amount of factory employment, in Telangana region. There are 30 agrobased units, 9 forest based units and 19 mineral based units and 3 metal based units, among the registered factories. The others account for as many as 99. The agro based units, however, offer the largest employment.

As regards electrification 445 towns and villages are electrified in this district, forming 45.1 per cent of the total number of towns, and villages in the district. The percentage of population covered with the provision of electricity is 70. Both from the point of view of the villages covered as well as the population covered the district's position is much better when compared to the other districts in Telangana region or the State as a whole.

The district has a total length of 819 km. of roads maintained by Public Works Department (R. & B.). Of these only 10 km. are cement-concrete, 342 km. black top/asphalt, 330 km. metalled and 138 km., unmetalled/murram. 197 villages in the district are connected by all-weather roads while 379 villages are connected only by fair weather roads and 404 villages not connected by any road at all. As in the other districts of the Telangana region, the communication facilities in this district are totally inadequate.

There are 1280 Primary schools, 229 Middle schools and 95 Secondary schools in the district. About 14.9 per cent of the total number of villages in the district do not have any primary schools while 67.6 per cent of the villages do not have Upper Primary/Middle schools and 91.4 per cent of the villages in the district do not have High Schools. The percentage of literacy in this district is 18.11 against the State average of 24.57.

There are 29 hospitals and dispensaries with a total number of 1,038 beds. 68.6 per cent of the villages do not have any medical facilities. About 21.5 per cent of the villages do not have any medical facilities within 16 km. distance.

Transformation of traditional agriculture into a modern one would be the most urgent need to develop the district. The advantages of a reliable rain-fall and good soils could be exploited to the maximum extent to obtain maximum yields and maximise income. Besides exploiting mining to extract mineral wealth a beginning should be made towards industrialising the district. In the Telangana region this district by its strategic location affords immense opportunities for industrial agglomeration.

20. KHAMMAM

The district lies between 16°-45' and 18°-35' of the northern latitude and 79°-47' and 80°-47' of the eastern longitude. The district is bounded on the north by Madhya Pradesh and Orissa States, on the east by East Godavari and West Godavari districts, on the south by Krishna district and on the west by the Nalgonda and Warangal districts. The important rivers that flow through this district are Godavari, Sabari, Kinnerasani, Muner, Paler, Akher and Wyrā. River Godavari flows through a distance of about 181 km. in this district in a south-eastern direction, while river Kinnerasani, another important tributary of Godavari traverses in south-eastern direction and forms a boundary between Bhoorgampadu and Kothagudem taluks. The Sabari river joins Godavari at Kunavaram. River Muner rising in Warangal district flows south wards passing through Yellandu and Khammam taluks. River Akher which also rises in Warangal district flows in the south eastern direction and joins river Muneru at Tirthala in Khammam taluk. River Paler rising in Warangal district flows almost parallel to Muner and passes through Kakaravai village of Khammam taluk flowing south wards.

The district has an area of 15,866 Sq. km. with a total population of 13.70 lakhs. The density of population per Sq. km. is 86. The district has the second lowest density of population per Sq. km. 86.41 percent of the population is rural while 13.59 percent of the population is urban. The number of females per thousand males in the district is only 957 against the State average of 977. Of the 224 urban are as in the State 6 are located in this district. There are 1,100 inhabited and 126 uninhabited villages in the district. Of the total population 41.5 percent are workers. Among the workers 32.3 percent constitute cultivators, 40.3 percent constitute agricultural labourers and 27.4 percent other workers.

The district has a normal rainfall of 1027 m.m. the highest rainfall in the entire region. Almost all the rainfall is received through the south-west monsoon during June to September. Out of the total 7 taluks in the district, 4 taluks receive a normal annual rainfall of 1016 m.m. and above while three taluks receive a normal annual rainfall between 889 m.m. and 1016 m.m. Reliability of rainfall is fairly high since the percentage variability is less than 20 in almost all the taluks of the district. The climate in the district is generally hot in summer and very cold in winter. The Khammam and Bhadrachalam taluks of the district are excessively hot during summer.

The soil in the district is mostly sandy in the portion south of river Godavari. The lands in Madhira are rich and fertile. The area adjoining river Godavari is extensively fertile like the delta lands of the Godavari district. The agency taluks of Bhadrachalam and Nugur are covered by thick forests but there are patches of fertile lands in the midst of the forests.

The predominant soils in the district are chalka, dubba and the black soil. In 43 per cent of the villages in the district, the chalka

soil predominates while in 29 percent of the villages the predominant soil is black soil and in the rest 28 percent of the villages, the soil is dubba. The chalka soils largely occur in Khammam taluk of the district, while the dubba soils occur in Yellandu and Kothagudem taluks and the black soil in Madhira and Bhoorgampad.

The district is rich in mineral resources. Several minerals like coal, iron ore, barytes, copper, chromite, steatite, corundum, graphite, garnet, mica, kayenite, limestone, marble and dolomite are found in Khammam district. The minerals mostly worked at present are coal, iron ore and barytes. Coal is the most important mineral. The coal mining work has been taken up by the Singareni Collieries for the last several years. The reserves of coal in the based areas are estimated at 707 million tonnes. These coals are non-coking and nonbridgetting type, suitable only for steam raising.

Hematite iron ores occur near Bayyaram, Ramachandrapuram and Appanarasimhapuram. The reserves of high grade ores of this district are of the order of 6.3 million tonnes, and those of low grade 5.2 million tonnes. The important minerals where barytes occur are pocharam, Seripuram, Rudramkota, Venkatayapalem. The Seripuram and the Pocharam deposits are the best developed in the entire area, and the mineral raised from these mines is consumed by the Barium Chemicals Unit at Ramavaram. Deposits of good quality graphite are found in the Jeediguppa, Kavarigundla and Gundlamadugu areas of Bhadrachalam and Paloncha taluks. Recent surveys indicate the existance of about 2.68 million tonnes of copper ore with about 2.02 percent copper content. Low grade chromite is found near Wankar, Jalarpad, Annargudem, Immamnagar, while mica occurs in minor quantities in Madhira taluk. Bands of dolomitic limestones extend northwards from Madhira taluk through Khammam into Yellandu taluk. These limestones are found to be suitable for use of fluxing agent in steelmetallurgy. Marbles of fairly good quality are found near Manditog, Puballi, Nizampet etc., in Yellandu and Khammam taluks and the estimated reserves of limestones and marbles are of the order of 200 million tonnes.

This district has the largest area under forests. The percentage of forest area to geographical area is 51.1, against the State average of 23 percent. The forest wealth chiefly consists of teak, Nallamaddi, Chandra and Bamboo. About 7 percent of the area of the forest is occupied by bamboo plantations while 9 percent of the area accounts for teak plantations.

This district is administered through 7 taluks and 13 Community Development Blocks out of which 4 are Tribal Development Blocks, 2 are backward blocks and the remaining blocks are ordinary. There is not even a single advanced block in the district.

The total cropped area in the district forms 29.4 percent of the geographical area. The percentage of the cropped area to total geographical area is the second lowest in the entire State. Of the cropped area only 19.3 percent is irrigated. The bulk of the irrigated area is under tanks and wells, canal irrigation covering a very small percentage of the total area irrigated. Since the rainfall is dependable and is fairly high, the area irrigated has fairly assured water facilities

Of the cropped area, 87.8 percent is under food crops and 12.2 percent under non-food crops. The district has the largest percentage of area under Jowar. The principal crops of the district are paddy, jowar and pulses under food crops and groundnut and tobacco under non-food crops.

The yield rate of rice in this district is 1329 Kg. per hectare which is a little higher than the average yield rate in the Telangana region. The district is a principal jowar growing area and the standard yield of jowar in this district is fairly higher than that in the Telangana region being 474 Kg. per hectare against the region's average of 375 Kg. and 461 Kg. for the State as a whole. The yield of groundnut per hectare is 1121 Kg. as compared to the average yield of 1214 Kg. for the State as a whole.

There are 70 registered factories in the district employing on an average 3,143 workers daily. The number of small scale units in the unorganised sector is very low being only 57 accounting for an average daily employment of only 366. Of the 57 units in the unorganised sector, 18 units are agro-based, 11 forest based, 5 mineral based and 23 other units.

The number of villages and towns electrified in this district is only 270 forming 24.6 percent of the total number of villages and towns. This is the second lowest district as far as electrification is concerned. The percentage of population covering the provision of electricity is 59.1. The district has a long way to go in regard to the provision of electricity particularly to the rural population.

The district has a total length of 1011 Km. of roads maintained by the Public Works Department (R. & B.) of which 466 Km. are blacktopped, 352 Km. metalled, 18 Km. are cement concrete and 176 Km. unmetalled/murram.

As regards rural roads, 458 villages in the district constituting 42.2 percent of the total number of villages are not connected by any roads while 321 villages are connected by all weather roads and 307 villages by fair-weather roads.

The district has 1,253 primary schools, 193 Middle schools and 83 Secondary schools. From the point of view of primary education, facilities in this district are not adequate. Only 64.3 percent of the villages have primary schools while 35.7 percent do not have any primary schools at all. 21.4 percent of the villages have primary schools within a distance of 3 Km., 7.1 percent within a distance of 3 to 8 Km., 3.3 percent within a distance of 8 to 16 Km. and 3.9 percent beyond 16 Km. But 89.7 percent, the second largest percentage of villages in Telangana do not have any upper primary schools. About 36 percent of the villages do not have upper primary school within 8 Km. distance. In regard to high school facilities, the district has high schools in 8.3 percent of the villages. There are 13 hospitals and 24 dispensaries in the district and 48.9 percent of the villages do not have medical facilities within a distance of 8 Km.

Rich in mineral wealth, with good soils spread, the district holds good potential for a diversified economy.

21. NALGONDA

The Nalgonda district lying between 16°, 25' and 17°, 50' of the northern latitude and 78° 40' and 80°, 5' of the eastern longitude is bounded on the north by Medak and Warangal districts, on the east by Khammam and Krishna districts, on the south by Guntur and Mahbubnagar districts and on the west by Mahbubnagar and Hyderabad districts. The district is drained and watered by the rivers Krishna, Musi, Aleru, Peda Vagu, Dindi, Halia and Kungal. The most important river being the Krishna. Musi river a tributary of the Krishna is the next important river in the district. Pedavagu and Dindi flow in Devarkonda taluk and merge into the Krishna river. Halia river which rises in the hills west of Narayanpur in Nalgonda taluk flows in south eastern direction for about 45 miles and it is joined by Kungal river near Kungal village and continues in the same direction, falls into the Krishna river. Aleru flows in Bhongir taluk in south eastern direction and joins Musi. All these are for irrigation purposes. The mighty Nagarjunasagar Project having been constructed across the river Krishna, near Nandikonda village. The other important irrigation projects worth mentioning are the Musi project across the Musi river and Dindi Project across the Dindi.

The area of the district is 14,242 square kilometers with a population of 18.20 lakhs—16.98 lakhs rural and 1.22 lakhs urban. The density of population of the district is 128 per square kilometre. There are 965 females per 1,000 males in this district. The percentage of rural population is the highest in the district being 93.31 while the percentage of urban population is only 6.69. The percentage of Scheduled Castes population in this district is 15.89 higher than the State average, while the percentage of Scheduled Tribes population is considerably less being 0.03%. There are 1,115 inhabited villages and 50 uninhabited villages in this district. Of the 224 urban areas only 6 are located in this district. The number of urban areas along with the urban population in the district reveals low degree of urbanisation in this district. Of the total population, 45.8% are workers while 54.2% are non-workers. Of the workers 36.1% are cultivators, while 36.4% are agricultural labourers and 27.5% are other workers.

The climate of this district is very hot during the months of April and May and in August and September, the most heat is exceedingly oppressive. The annual normal rain-fall in this district is only 687 millimetres, This is one of the districts with a very poor rain-fall. Of the 7 taluks in this district, 6 taluks have normal rain-fall between 650-750 m.m. and one taluk between 750-900 m.m. The bulk of the rain-fall is received through the southwest monsoon during June to September, while some rain-fall is also received through the north east monsoon between October and December. The rain-fall during January to May is rather scanty. However, since the percentage variability in none of the taluks is more than 20%, the rain-fall in this district should be considered fairly reliable.

The soils in this district are mostly chalka, (sandy loam) and Dubba (loamy sands). While 47% of the villages in the district have predominantly Dubba soil, 44% of the villages have sandy loam

soils. Only 9% of the villages in the district have predominant black soils. The chalk soils occur in the taluks of Devarkonda, Miryalaguda, Huzurnagar and Suryapet, while Dubba soils occur in Bhongir, Ramannapet and Nalgonda taluks. In none of the taluks in the district, the black soil is predominant. The district is generally poor in mineral wealth. The only deposits so far found of economic value being clay which occurs near Chintrala. The clay deposits are estimated to yield about 2.5 lakhs tonnes of clay which is of high grade suitable for ceramic purposes. The long narrow belt of Palnad lime stone occurring along the north bank of Krishna river in the Miryalaguda taluk and Huzurnagar taluk contains extensive deposits of limestone suitable for manufacture of cement. Besides, coloured limestones are found in this area which may be used for polishing and decorative purposes. Excellent building stones consisting of granite and lime-stones of various shapes and textures are found in large scale. Lime stone slab quarries are developed near Damaracherla near Miryalaguda taluk.

The district does not contain large or important forests. The district has the smallest proportion of forests to the geographical area. The percentage of area under forests to the geographical area being as low as 6.3 which is about one fourth of the average area under forests in the State. The forest vegetation of the district belongs to the dry, deciduous, tropical forest type of the Krishna basin. The wood from the forests of this region is useful only for fuel and for agricultural implements like ploughs.

The district is divided into 7 taluks and 15 Community Development Blocks for administrative purposes. Of the 15 Blocks, 4 have been classified as ordinary blocks, while the remaining 11 are classified as backward blocks. There is not even a single Block in the district which has been classified as an advanced block. All the 7 taluks of the district have been declared as chronically drought affected taluks in the State while one of the taluks namely Ramannapet has been declared as the hard core area.

61.3% of the total geographical area accounts for the total cropped area in this district. Though a backward district, the percentage of the cropped area to the total geographical area during the year 1970-71 happens to be the highest among the districts in the Telangana region. Of the total cropped area 26.9% is irrigated. This district has the largest area under canal irrigation and therefore a large percentage of the area irrigated is under assured sources of irrigation. The district also has considerable areas irrigated through tanks and wells. 74.3% of the total cropped area is under food crops while 25.7% is under non-food crops. The principal food crops in the district are paddy, jowar, bajra and pulses, while the principal non-food crops are ground nut and castor. Castor accounts for about 15% of the cropped area. 10% of the cropped area is under groundnut while the area under jowar and paddy area almost equal, each accounting for about 24%. The percentage of areas under bajra accounts for highest percentage viz., 16%, which is about 4 times the average for the State. The yield rates of various crops in this district are more or less same compared to those of the State.

There are 55 registered factories in this district employing 1815 workers on an average per day. Among the districts in the Telangana this district accounts for lowest number of small scale organised units in the unorganised sector numbering 37, only out of which as many as 15 are agro-based, 7 are forest based, 1 is mineral based and 14 other industries. The average employment in the unorganised sector is only 246. From the point of view of industrialisation this district should be considered the most backward of the districts. The total number of towns and villages electrified in this district forms 41.5% of the total number of villages and towns in the district. The percentage of population covered with the provision of electricity is 57.7%. The progress made under electrification may be considered fairly satisfactory since the position is much better when compared to the other districts of the State.

The length of roads maintained by the P.W.D. is 697 miles of which 406 miles are black topped/asphalt 193 miles metalled and 98 miles unmetalled/murram. While 239 villages in the district are connected by all-weather roads, 473 villages are connected only by fair-weather roads, 399 villages forming 35.9% of the villages in the district are not connected by any roads at all. In the matter of the rural communications this district like the other districts in the Telangana region is comparatively very backward.

There are 1,575 Primary Schools, 299 Middle Schools and 95 Secondary Schools in the District. Though the district is economically backward one, the percentage of villages having primary schools is the second largest being 89.1%. Of the villages which do not have any primary school facilities, 8.1% of the villages have the facility within a distance of 3 Km., while the percentage of villages which do not have the primary school within a distance of 3 to 8 k.ms. is only about 2%. About 87% of the villages in the district do not have Upper Primary Schools. About 61% of the villages have the facility within a distance of 8 k.ms. In matters relating to the availability of high school facilities, this again is the second best district in the Telangana region. 10% of the villages in the district have high school facilities. However, about 52% of the villages do not have high school facilities within a distance of 8 k.ms.

There are 11 hospitals and 62 dispensaries in this district. This is again the best district from the point of view of medical facilities in the Telangana region. 46% of the villages have medical facilities. 7% of the villages have medical facilities within 3 k.m. while 16% have the medical facility between 3-8 K.m. 16% of the villages between 8-16 k.m. and the rest 15 per cent have the facility beyond 16 km. distance.

The district has the benefit of Nagarjunasagar and for some areas the proximity of Hyderabad Metropolitan city. The irrigated agriculture and concomitant industrial/dairy development for project areas and activities to meet the consumer needs of city dwellers for the rest of the area would be significant in any approach to development. However the taluks of Deverkonda, Ramannapet and Nalgonda pose problems and avenues of development in terms of dry farming including animal husbandry/dairying may have to be explored.

III AREA DEVELOPMENT APPROACH

In the context of regional development policy the concept of centres is important and this is based on the simple proposition that the development does not occur evenly all over the space and equally at all points geographically. Logically from this proposition, we in the State arrived at a system of centres with hierarchical relationship between them. Involved in this was an area development approach. Four levels of centres have been accordingly differentiated though such a differentiation is slightly arbitrary in certain cases. For the purpose of meaningful and operational policy guidance, such differentiation is essential. The four levels of centres are termed Service Centres, Market-cum-service centres, Growth centres and Growth poles.

The Service Centre may broadly be defined as a centre which provides the basic minimum services that are considered essential for civilised existence, as a point of preliminary outlet for information and technical guidance, reasonable level of social services and the point of contact for integration with the rest of the economy for its hinterland. Thus, the Service centres are expected to provide consumer co-operative, market sub-centre, agricultural, veterinary and agro-service facilities, secondary school, dispensary, bus, phone, telegraph facilities, etc.

In delineating these Service Centres, the following considerations have been kept in view :

- (a) The Service centre should be so located that all the services are within a reasonable distance for every inhabitant :
- (b) The coverage of population should be reasonable enough ;
- (c) The centre should be already fairly developed or with a potential to develop these services ;
- (d) As far as possible, the centre should be geographically centrally located to the hinterland proposed ; and
- (e) The Service centre should be so located that the administrative boundaries are not substantially disturbed.

In more definite terms, these considerations involve an effort to study the present level of development of the various settlements. By a system of scoring of the various functions available in all the settlements, a list of centres which could qualify to be the Service centres by virtue of the present level of development was arrived at. There have been instances where such Service centres were found even within a distance of 2 to 3 miles from each other. In such cases only one of the two based on the present level of development the transport convenience and population was selected. There have been cases where for a large area there are no settlements with substantial development. In such cases a centre had to be selected in view of its population, transport facility and location even if the level of development was not adequate. Also the Service centres have been so selected

that there is a centre for any human settlement within a distance of 5 to 7 miles and covering a population of 20,000 to 35,000.

In selecting the Service centres care was taken to ensure that every Block headquarters and urban centre which was not a higher order centre mentioned below was included since substantial infrastructure was already developed in the Block headquarters. Theoretically speaking identifying a hierarchy of centres, and relating them to appropriate services and locating them physically in dynamic context requires a study of settlement pattern service-wise, distance and population functions as also the frequency of trips required. It is, however, observed from the preliminary work by pilot projects on growth centres that this methodology adopted now gives very reliable results.

With regard to the Market-cum-Service centres, it is expected that these centres would provide a higher level of public function such as land Mortgage Bank, Wholesale Trade, Industrial Estate, hospital with beds, etc. On the basis of certain studies following the similar methodology as in the case of Service centres a number of Market-cum-service centres have been identified. However, in certain cases even the Taluk Head-quarters were not fully developed to the level of being a market-cum-Service centre at present. It was, however, decided, that all the Taluk Headquarters should be treated as Market-cum-Service centres since the Taluk headquarters has important governmental services being provided, and appropriate facilities provided. In the case of Telangana, since there are already a substantial number of regulated markets geographically spread over the entire region, all these have been included. Besides those, all taluk headquarters which are not higher order centres and which are not already regulated markets have also been included in the light of the potential they have in developing as market focii.

The third level is termed Growth centre which generally included all the District Head-quarters and such other centres which have either reached a fairly high level of development of secondary and tertiary activities or which have the potential to develop into such centres in the near future. In this case also there have been a few District Headquarters in Telangana whose level of development does not justify their being treated as Growth centres; in those districts some other centres which have a larger potential for being a Growth centre have been selected. The identification of growth centres, however, is being reviewed.

As far as Growth pole is concerned, it is a centre with large concentrations of industrial and or commercial complexes. At present in Andhra Pradesh, Hyderabad city alone claims the distinction of being a growth pole. However, in future it is possible to develop some other centres also such as Visakhapatnam, Vijayawada, Guntur, Cuddapah, Proddatur, Nizamabad and Warangal as growth poles. For the present, however, these centres are still treated as Growth centres.

The more important functions that are expected to be provided through policy measures at various levels of centres are as follows:

FUNCTIONS PERFORMED BY CENTRAL PLACES OF DIFFERENT ORDER—ILLUSTRATIVE LIST

<i>Category</i>	<i>Distributive Service</i>	<i>Marketing & Banking</i>	<i>Agriculture</i>	<i>Animal Husbandry</i>	<i>Industries</i>	<i>Education</i>	<i>Health</i>	<i>Transport & Communication</i>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Service Centres	Consumers Co-operative	Market Sub-Centre, Commercial Bank.	Agricultural Asst. Depot.	Veterinary Dispensary, A. I. Centres.	Agro Service Centre, Pre-processing.	Secondary School.	P. H. C./ Dispensary.	Bus, Phone Telegraph Post Office.
2. Market-cum-Service centres.	Wholesale Trade & Marketing Society, F. C. I. Depot.	Market Centre and Yard L. M. B.	Soil Testing Laboratory.	..	Industrial Estate.	Junior College.	Hospital with beds.	..
3. Growth Centre.	Specialised trade, Super Bazars.	Central Banks other financial institutions.	Agricultural Research stations.	Veterinary hospitals.	Industrial Development areas.	Degree College, Polytechnic.	Headquarters Hospital with specialised services.	Bus Depots, Express Services.
4. Growth pole.	Super Bazar.	Cold Storage facilities, regulated specialised markets, Divisional Offices of the financial institutions and other agencies.	Divisional Offices.	Dairy Plants.	Industrial Complex.	University & Technical College.	Medical College and Specialised Hospitals.	Aerodromes.

For Andhra Pradesh as a whole, 1,102* Service centres are delineated. Of these 562 are in Coastal Andhra, 219 in Rayalaseema and 381 in Telangana. The Development of Service Centres is visualised in two phases. Depending on the level of development of the area, the population and area thresholds of each of the service centres and their geographical location some of them have been selected for development in first phase itself. Thus, "In Telangana are 110 centres are tentatively selected for developing in the first phase. Some more centres will be selected for first phase and the rest will be developed in 2nd phase," while in Andhra area 389 are in first phase and 392 in second phase. These are tentative. A final view can be taken after district planning exercise is completed. In regard to the growth centres, there are 45 in the State including most of the district head-quarters. 19 of them are in Coastal Andhra, 11 in Rayalaseema and 15 in Telangana. However, this list is being reviewed. It regard to the growth pole, Hyderabad is the existing growth pole, Visakhapatnam, Guntur and Vijayawada could be immediately developed while Cuddapah, Warangal, Proddatur may have a long term base. However all these Centres are included as growth centres.

The details of areas, population, number of Blocks and the number of growth centres, market-cum-service centres, service centres district-wise in indicated in Table enclosed. The list of these centres is given in Technical Papers—Series III.

Area Development Approach

There is a dilemma here that has to be resolved. The growth centres, and to some extent the other centres also, have been identified as a result of an analysis of past trends and to that extent they reflect the effect of these trends. Our whole approach to regional development however is that these trends need to be corrected by deliberate policy in future. Therefore, we may have to select the growth centres as much from the point of view of a deliberate regional development policy for the future as from the acceptance of the results of socio economic forces in the past. We will also hopefully be initiating new trends of economic growth in hitherto stagnant areas and we will have to recognise the future effect of this which no past trend would include. The number of growth centres also does not reveal their size. Thus in certain areas only two growth centres may develop each of them growing to a large size, while in other areas due to various local circumstances three might develop but each only to a moderate size. All these factors would have to be further studied and analysed. This is proposed to be done as part of the District Planning exercise and at that stage the present exercise and this list of various centres would have to be reviewed.

In accordance with the identified centres, the programmes of various sectors are proposed to be located. Apart from the developmental plans in all the sectors, and of all the departments conforming to the

*Bhadrachalam and Nugur areas recently transferred to East Godavari district (Coastal Andhra) are however treated as part of Khammam district (Telangana). Similarly Giddalur and Markapur taluks are treated as part of Prakasam district (Coastal Andhra)

spatial order, envisaged above, there is also need for adequate institutional arrangements for ensuring rational land-use pattern within these centres and plan for reasonable level of amenities therein to enable a planned growth of these centres. Some of the lines of action necessary in this regard might be :

- (a) preparation of Master Plans so as to ensure demarcation of the various areas within each of the centres for different purposes such as industrial, housing, commercial, etc., not only for the better land use but also to avoid dangers of pollution.
- (b) For this purpose :
 - (i) Creating development authorities for growth poles and major growth centres such as Hyderabad and Visakhapatnam immediately and for the other potential centres also in course of time ;
 - (ii) ensuring that in other centres the Municipality discharge the function effectively;
 - (iii) ensuring that the provision of the Municipalities Act relating to lay-outs town-Planning, etc., are made applicable to the service centres also;
- (c) ensuring the provision of adequate water supply and housing facilities to all these centres on a priority basis;
- (d) ensuring well planned internal roads, drainage etc., for these centres particularly higher level centres, apart from a net work of roads inter-connecting the various levels of centres;
- (e) Since as a result of the above policy of special order the infrastructural facilities of these centres will grow and consequently land values are likely to increase due to this social investments it would be necessary to take up measures for socialising all the land in these centres through some sort of nationalization or taking over all the lands within the identifiable limits of these centres.

TABLE
Growth Centres Market-cum-

Sl. No.	District	Area in Sq. Kms.	POPULATION IN LAKHS		No. of Blocks.
			Excluding Urban area of growth Centres.	* Total Population.	
(1)	(2)	(8)	(4)	(5)	(6)
<i>Coastal Andhra</i>					
1.	Srikakulam ..	9,748	25.45	25.90	24
2.	Visakhapatnam ..	18,789	22.98	28.05	25
3.	East Godavari ..	10,940	27.06	30.87	20
4.	West Godavari ..	7,780	21.83	28.74	16
5.	Krishna	8,734	19.76	24.94	17
6.	Guntur	11,877	24.29	28.45	21
7.	Prakasam	17,620	18.44	19.20	17
8.	Nellore	18,058	14.47	16.10	14
	Total ..	92,991	174.28	197.25	154
<i>Rayalaseema</i>					
1.	Anantapur ..	19,125	19.85	21.15	16
2.	Chittoor	15,768	21.21	22.86	19
3.	Cuddapah	15,856	14.40	15.77	12
4.	Kurnool	18,799	16.97	19.82	13
	Total ..	69,048	71.98	79.60	60
	Total Andhra Region ..	1,62,084	246.21	276.85	214
<i>Telangana</i>					
1.	Adilabad	16,188	12.40	12.88	11
2.	Hyderabad	7,707	9.96	27.92	8
3.	Karimnagar	11,824	18.89	19.64	14
4.	Khammam	15,866	12.88	18.70	18
5.	Mahabubnagar	18,419	18.80	19.82	16
6.	Medak	9,685	14.42	14.68	10
7.	Nalgonda	14,242	17.68	18.20	15
8.	Nizamabad	7,969	11.97	13.13	9
9.	Warangal	12,875	16.68	18.71	14
	Total Telangana Region	1,14,720	188.18	158.18	110
	Total Andhra Pradesh	2,76,754	879.84	485.03	824

*The figures in Phase I of Telangana are tentative and some more centres will be selected later.

**Yet to be finalised.

Service Centres By Districts

No. of Growth Centres**	No. of Market-cum-Growth Centres	NO. OF SERVICE CENTRES			Total No. of market-cum-service Centres and Service Centres.	Population in thousands per market cum service centre and Service centre.
		Phase-I	Phase-II	Total		
(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	11	57	50	107	118	22
3	16	55	48	103	119	19
3	27	38	42	80	107	25
2	16	32	27	59	75	29
3	16	23	25	48	64	31
3	10	30	28	58	68	36
2	10	30	31	61	71	26
2	11	21	25	46	57	25
19	117	286	276	562	679	26
3	15	28	26	54	69	28
3	14	35	37	72	86	25
2	16	17	21	38	54	27
3	19	23	32	55	74	23
11	64	103	116	219	233	25
30	181	339	392	731	962	26
2	12	11	37	48	60	21
1	10	9	18	27	37	27
3	12	11	30	41	58	36
2	6	15	35	50	56	22
1	20	22	31	53	73	26
2	10	10	27	37	47	31
2	9	8	40	48	57	31
1	13	16	19	35	48	25
1	11	8	34	42	50	31
15	103	110*	271	381	484	28
45	284	499	663	1,163	1,446	26

Part IV—Tables

STATE : ANDHRA PRADESH

DRAFT FIFTH FIVE YEAR PLAN

OUTLAY AND EXPENDITURE SUMMARY .

TABLE—I.

(Rs. in lakhs).

Sl. No.	Head/Sub-Head	FOURTH PLAN				FIFTH PLAN OUTLAY PROPOSED.		
		Approved Fourth Plan outlay.	Approved Outlay for 1973-74.	Anticipated expr., 1973-74	Anticipated expr., during the Fourth Plan.	Fifth Plan Total.	Capital outlay.	Foreign Exchange.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Agricultural Education & Research		196.44	38.85	38.85	196.44	450.00	..	..
Agricultural Production		442.53	119.00	119.00	490.37	1,265.00	..	..
Small Farmers & Agricultural Labourers
Training Centres		28.89	4.40	4.40	18.50	42.68	..	..
Minor Irrigation		2555.26	303.01	303.01	1,970.09	4,350.00	1,730.00	..
Soil Conservation		320.28	39.58	39.58	259.15	525.00	..	..
Area Development Programme		1,109.66	211.72	211.72	786.38	3,013.00	2,750.00	..
Animal Husbandry		173.40	43.45	43.45	189.77	570.00	45.25	..
Dairying & Milk Supply		350.18	88.72	88.72	357.16	800.00	..	..
Forests		284.72	57.00	57.00	286.54	600.00	..	..
Fisheries		224.17	51.50	51.50	173.07	421.00	185.00	..
Warehousing, Marketing and Storage		13.70	3.25	3.25	18.90	150.00	140.00	..
I. Total Agricultural Production Programmes ..		5,694.23	955.48	955.48	4,746.37	12,166.68	4,850.25	..

Co-operation	1,098.78	251.00	251.00	1,192.39	2,500.00	1,898.80	..
Community Development	850.28	78.00	78.00	607.74	1,284.00	..	..
Panchayats .. .. .	..	..	..	..	90.00	..	..
II. Total Community Development, Co-operation and Panchayats	1,949.06	324.00	324.00	1,800.13	3,824.00	1,898.80	..
Irrigation	10,685.83	1,628.80	1,628.80	} 9,818.27	20,000.00	19,900.00	..
Flood Control	107.72	8.70	8.70				
Power	20,072.46	3,629.88	3,629.88	17,627.87	45,500.00	44,900.00	104.00
III. Total Irrigation and Power	30,866.01	5,261.88	5,261.88	27,446.14	65,500.00	64,800.00	104.00
Large and Medium Industries	1,298.99	117.50	117.50	910.58	3,666.00	..	..
Mineral Development	63.53	14.50	14.50	22.30	546.00	..	..
Village and Small Industries	652.45	112.00	112.00	544.55	2,000.00	44.72	5.88
IV. Total Industry and Mining	2,009.97	244.00	244.00	1,477.88	6,212.00	44.72	5.88
Roads	1,806.27	264.00	264.00	1,180.34	5,700.00	5,700.00	..
Road Transport	233.51	60.00	60.00	231.08	1,380.00	1,380.00	..
Ports and Harbours	36.49	8.00	8.00	120.00	270.00	270.00	25.00
Other Transport	16.00	..	..	..	..	..	..
Tourism	22.18	5.00	5.00	18.61	37.78	..	..
V. Total Transport and Communications	1,614.40	337.00	337.00	1,550.03	7,387.78	7,350.00	25.00

TABLE I.—(Contd.).

(Rs. in lakhs)

Sl. No.	Head/Sub-Head		FOURTH PLAN				FIFTH PLAN OUTLAYS PROPOSED		
			Approved Fourth Plan Outlay	Approved Outlay for 1973-74	Anticipated expenditure 1973-74	Anticipated expenditure during the Fourth Plan	Fifth Plan Total	Capital outlay	Foreign Exchange
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
General Education	1,539.64	861.60	861.60	1,298.04	6,928.00	910.00	..
Technical Education	155.19	29.20	29.20	130.53	293.00	76.00	..
Health	526.09	132.28	132.28	447.94	4,374.00	2,004.48	..
Family Planning
Nutrition Programmes	3,950.00	..	..
Water Supply	2,256.50	666.25	666.25	1,938.82	6,800.57	6,800.57	..
Housing	794.45	157.00	157.00	833.02	4,350.00	4,350.00	..
Urban Development	236.48	31.78	31.78	168.57	800.00	320.00	..
Welfare of Backward Classes	848.25	220.00	220.00	808.33	3,270.13	183.79	..
Social Welfare	28.02	8.96	8.96	27.09	89.86	..	..
Labour & Labour Welfare	41.57	15.50	15.50	43.20	205.00	14.00	..
VI. Social Services	6,866.14	1,622.52	1,622.52	5,690.54	31,060.61	14,658.84	..

Statistics	..	14.99	5.00	5.00	14.58	50.00	..	..
Information & Publicity	.. ..	31.48	5.00	5.00	12.88	26.68	..	..
Public Cooperation	.. ..	2.61	0.62	0.62	1.68	..	..	..
Land Reforms	.. ..	..	..	..	..	500.00	..	..
Planning Organisation	..	13.86	4.00	4.00	8.91	150.00	..	..
Area Planning Programmes	.. ..	..	..	..	..	822.80	..	..
VII Total Miscellaneous		..	62.94	14.62	14.62	38.00	1,548.98
Grand Total		..	48,562.75	8,759.00	8,759.00	42,748.59	1,27,700.00	93,602.61	134.88

STATE: ANDHAR PRADESH

DRAFT FIFTH FIVE YEAR PLAN.
PROGRAMME-WISE OUTLAY AND EXPENDITURE.

TABEL-II
(Rs. in lakhs.)

S. No.	Programme.	..	..	Fourth Plan approved outlay	Approved out- lay for 1973-74	Likely expen- diture 1973-74.	Likely expen- diture during Fourth Plan	Fifth Plan total outlay
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
I. AGRICULTURAL PROGRAMMES								
<i>(i) Agricultural Education & Research :</i>								
1.	Agricultural Education ..	..	..	147.42	23.50	23.50	147.42	305.00
2.	Agricultural Research ..	..	..	49.02	10.35	10.35	49.02	145.00
Total (1 & 2) ..				196.44	33.85	33.85	196.44	450.00
<i>(ii) Agriculture :</i>								
1.	Extension, Training & Farmers Education ..	..	..	..	..	..	..	60.00
2.	Improved Seed Programme. ..	..	..	41.63	7.35	7.35	38.56	75.00
3.	Manures & Fertilizers ..	..	..	32.14	6.28	6.28	28.56	49.00
4.	Plant Protection ..	..	..	71.92	9.60	9.60	55.99	100.00
5.	Agricultural Implements & Machinery including Agro- Industries Corporation. ..	..	..	77.12	..	..	102.00	770.00
6.	Agricultural Statistics ..	..	..	1.86	0.24	0.24	1.69	5.00

7. H. V. P., I. A. D. P. Multiple Cropping & other intensive cultivation programmes	..	..	..	..	12.84	12.84	32.86	72.00
8. Land Development	..	..	..	69.64	13.00	13.00	73.34	..
9. Record of rights	..	..	..	..	50.00	50.00	75.00	..
10. Commercial crops	..	..	..	35.97	7.01	7.01	34.31	*54.00
11. Others	..	..	..	112.25	12.68	12.68	48.06	80.00
Total (I to II)				..	442.53	119.00	119.00	490.37	1,265.00
(iii) Training Centres	..	..	..	23.89	4.40	4.40	18.50	42.63
(iv) Minor Irrigation	..	..	..	2,555.26	303.01	303.01	1,970.09	4,350.00
(v) Soil Conservation	..	..	..	320.28	39.58	39.58	259.15	525.00
(vi) Area Development programmes	..	..	..	1,109.66	211.72	211.72	786.38	3,013.00
(vii) Animal Husbandry	..	..	..	173.40	43.45	43.45	189.77	550.00
(viii) Dairying & Milk Supply	..	..	..	350.18	88.72	88.72	357.16	800.00
(ix) Forests	..	..	..	284.72	57.00	57.00	286.54	600.00
(x) Fisheries	..	..	..	224.17	51.50	51.50	173.07	421.00
(xi) Warehousing & Storage	..	..	..	6.00	..	..	6.00	100.00
(xii) Marketing	..	..	..	7.70	3.25	3.25	12.90	50.00
(xiii) Small Farmers & Agricultural Labourers	..	..	..	..	..	..	..	..

**Fifth Plan provision is shown separately under Miscellaneous.*

TATBLE II—(Contd.,

(Rs. in lakhs)

Sl. No.	Programme	Fourth Plan approved outlay	Approved outlay for 1973-74	Likely expenditure 1973-74	Likely expenditure during Fourth Plan	Fifth Plan total outlay
(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>(xiv) Co-operation :</i>						
1.	Agricultural Credit				516.36	565.15
2.	Marketing				164.52	155.48
3.	Processing other than sugar factories and large processing units.				..	..
4.	Co-operative Sugar Factories				286.75	530.00
5.	Co-operative Farming	1,098.78	251.00	251.00	28.04	366.16
6.	Urban Consumer Co-operatives				44.92	190.81
7.	Co-operative Storage .. .. .				..	..
8.	Additional Department Staff .. .. .				..	..
9.	Others				201.80	692.40
	Total ..	1,098.78	251.00	251.00	1,192.89	2,500.00

11. IRRIGATION AND POWER

(i) Irrigation :

1. Continuing Major Projects - Nagarjunasagar

	..	..	..	..	4,522.00	565.00	565.00	4,356.00	6,420.00
Pochampad	..	..	..	..	3,074.00	599.00	599.00	3,000.00	6,400.00
Kadam	..	..	..	..	63.27	3.84	3.84	49.89	..
Thungabhadra Project High Level Canal Stage-II	..			..	1,005.09	146.00	146.00	872.05	1,073.00
Vamsadhara	..	..	..	..	350.00	75.00	75.00	303.00	737.00
				1. Sub-Total	9,014.36	1,388.84	1,388.84	8,580.44	14,630.00
2. Medium Project	..	..	..	..	1,532.35	219.46	219.46	908.22	1,237.00
3. New Schemes					
4. Investigation & Research	..	..	..	..	139.12	..	..	329.61	200.00
5. Flood Control	..	..	..	..	107.72	3.70	3.70		
				Total (1 to 5)	10,793.55	1,632.00	1,632.00	9,818.27	20,000.00
(ii) Power :									
(a) Generation	..	..	..	..	12,184.31	2,282.38	2,282.38	10,406.12	29,900.00
(b) Transmission	..	..	..	..	2,125.57	700.00	700.00	2,065.60	5,000.00
(c) Distribution and Rural Electrification	..	..	..	..	5,703.21	630.00	630.00	5,039.80	10,500.00
(d) Investigation	..	..	..	..	59.37	17.00	17.00	66.35	100.00
				Total (ii)	20,072.46	3,629.38	3,629.38	17,627.87	45,500.00
				Total (i) & (ii)	30,866.01	5,261.38	5,261.38	27,446.14	65,500.00

TABEL II—(Contd).

Rs. in Lakhs.

Sl. No.	Programme.	Fourth Plan approved outlay	Approved out- lay for 1973-1974.	Likely expen- diture 1973-1974.	Likely expen- diture during Fourth Plan.	Fifth Plan total outlay.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
III. INDUSTRY AND MINING						
<i>(i) Large and Medium Industries:</i>						
(1)	State Industrial Projects. .. ..	..	..	..	..	..
(2)	Industrial Areas including Incentives	806.38	80.00	807.00	507.91	830.00
(3)	Industrial Development Corporation	403.87	20.00	20.00	320.00	2,480.00
(4)	State Financial Corporation .. ..	..	..	..	..	196.00
(5)	Research, Demonstration and Pilot Projects .. ..	..	..	..	..	..
(6)	Metric System	83.74	17.50	17.50	82.62	28.00
(7)	Andhra Pradesh State Transport Corporation .. ..	..	..	..	..	30.00
(8)	Others including creation of State Bureau of Public Enterprise. .. ..	..	..	..	..	102.00
	Total (1 to 8)	1,293.99	117.50	117.50	910.53	3,066.00

(ii) *Village and Small Industries :*

(1) Handloom including Sericulture	..	..	..	..	297.93	52.12	52.12	301.28	622.00
(2) Power Looms	..	..	..	..	38.50	..	..	..	..
(3) Small Scale Industries	..	..	..	..	170.00	30.69	30.69	113.27	847.00
(4) Industrial Estates	..	..	..	..	..	..	..	..	..
(a) Rural	..	..	..	..	..	..	..	..	..
(b) Semi Urban	..	..	..	..	45.00	7.74	7.74	43.53	42.00
(c) Urban	..	..	..	..	..	..	..	..	..
(5) Handicrafts	..	..	..	..	51.00	9.46	9.46	39.45	186.00
(6) Sericulture	..	..	..	..	8.92	..	..	..	..
(7) Coir Industry	..	..	..	..	4.40	0.84	0.84	3.55	19.50
(8) Khadi and Village Industries	..	..	..	..	2.45	0.18	0.18	1.92	10.50
(9) Leather Industry	..	..	..	..	30.44	9.57	9.57	38.09	257.00
(10) Industrial Co-operatives	..	..	..	..	3.81	1.40	1.40	3.46	16.00
Total (1 to 10)					652.45	112.00	112.00	544.55	2,000.00
(iii) <i>Mineral Development</i>	..	..	..	..	63.53	14.50	14.50	22.30	546.00
Total (i) to (iii)					2,009.97	244.00	244.00	1,477.38	6,212.00

TABE II—(Contd.)

(Rs. in Lacks.)

S.No.	Programme			Fourth Plan approved outlay	Approved outlay for 1973-74	Likely ex- penditure 1973-74	Likely ex- penditure during Fourth Plan	Fifth Plan total outlay
(1)	(2)			(3)	(4)	(5)	(6)	(7)
IV. TRANSPORT AND COMMUNICATIONS								
<i>(1) Roads:</i>								
	(i) <i>Spill over Schemes</i>	..	..	299.41	14.34	14.34	245.87	989.70
	(ii) <i>New Schemes</i>	..	..	1,006.86	249.66	249.66	934.47	4,710.30
			Sub-Total	1,306.27	264.00	264.00	1,180.34	5,700.00
	of which							
	(a) <i>Rurai Roads</i>	..	..	93.00	..	..	82.25	3,200.00
	(b) <i>Others</i>	..	..	1,213.27	264.00	264.00	1,098.09	2,500.00
(2)	<i>Road Transport</i>	..	..	233.51	60.00	60.00	231.08	1,380.00
(3)	<i>Ports and Harbours</i>	..	..	86.49	8.00	8.00	120.00	270.00
(4)	<i>Tourism</i>	..	..	22.18	5.00	5.00	18.61	37.78
(5)	<i>Inland Water Transport</i>	..	..	16.00	..	..	..	..
			Total (1) to (5)	1,614.40	337.00	337.00	1,550.03	7,887.78

V (i) GENERAL EDUCATION

1. Elementary Education	..	..	..	436.54	140.00	140.00	421.85	4,688.00
2. Secondary Education	..	..	..	229.48	52.85	52.85	194.41	1,116.00
3. University Education	..	..	..	748.51	141.25	141.25	587.52	700.00
4. Teachers' Training	..	..	..		
(a) Elementary	..	..	..	20.05	..	..	11.16	275.00
(b) Secondary	..	..	..	20.08	..	..	10.82	34.00
5. Social Education	..	..	..	..	..	..	..	100.00
6. Other Educational Programmes	..	..	..	80.01	25.50	25.50	65.82	50.00
7. Cultural Programmes	..	..	..	4.97	2.00	2.00	6.44	15.00
Sub-Total (1 to 7)			..	1,539.64	361.60	361.60	1,298.04	6,928.00
(ii) Technical Education			..	155.19	29.20	29.20	130.53	293.00
Total (i to ii)			..	1,694.83	390.80	390.80	1,428.57	7,221.00

VI. HEALTH

1. Medical Education	..	..	..	43.29	7.40	7.40	33.13	..
2. Training Programmes	..	..	..	4.44	0.40	0.40	2.95	5.00
3. Hospital and Dispensaries	..	..	..	260.59	71.48	71.48	258.71	1,844.00
4. Primary Health Centres	..	..	..	46.51	4.16	4.16	10.78	2,180.00
5. Indigenous system of medicine	..	..	..	30.11	11.50	11.50	23.18	86.22
6. Other Programmes including Nutrition	..	..	..	141.15	37.34	37.34	119.19	4,208.78
Total (1 to 6)			..	526.09	132.28	132.28	447.94	8,324.00

TABLE. II—(Contd.)

(Rs. in lakhs)

S.No.	Programme	Fourth Plan approved outlay	Approved outlay for 1973-74	Likely ex- penditure 1973-74	Likely ex- penditure during Fourth Plan	Fifth Plan total outlay
(1)	(2)	(3)	(4)	(5)	(6)	(7)
VII. WATER SUPPLY & SANITATION:						
1. <i>Urban</i>						
	(a) Water Supply	1,358.20	449.10	449.10	1,055.15	3,525.57
	(b) Sewerage & Drainage	25.00	..	..	..	175.00
2. <i>Rural</i>						
	(a) Piped Water Supply	385.00	92.00	92.00	374.99	600.00
	(b) Wells and Handpumps	488.30	125.15	125.15	508.68	2,500.00
	Total (1 to 2)	2,256.50	666.25	666.25	1,938.82	6,800.57
VIII. HOUSING:						
	1. Subsidised Industrial Housing	12.08	3.00	3.00	11.58	150.00
	2. Low Income Group Housing & M.I.G.H.	97.75	8.75	8.75	109.24	1,650.00
	3. Village Housing Projects	6.50	1.50	1.50	6.50	50.00
	4. Rental Labour Housing .. .. .	..	..	..	..	200.00
	5. Slum Clearance	115.43	13.75	13.75	61.99	1,000.00
	6. Other L.I.C. Schemes	502.69	130.00	130.00	643.71	..
	7. House Sites for landless Labourers .. .. .	..	..	..	..	1,300.00
	Total (1 to 7)	734.45	157.00	157.00	833.02	4,350.00

IX. TOWN PLANNING AND URBAN DEVELOPMENT :

1. Town Planning	..	80.90	9.63	9.63	69.59	250.00
Urban Development	..	155.53	22.10	22.10	98.98	550.00
Total (1 & 2)	..	236.43	31.73	31.73	168.57	800.00

X. WELFARE OF BACKWARD CLASSES :

1. *Scheduled Tribes*

(a) Education	..	145.47	62.79	62.79	163.60	435.15
(b) Economic Uplift	..	296.77	43.16	43.16	275.73	880.14
(c) Housing, Health & other schemes	..	72.79	14.05	14.05	66.06	..
(d) Administration	..	..	..	..	..	75.47

Sub-total (a) to (d) .. 515.03 120.00 120.00 505.39 1,390.76

2. *Scheduled Castes*

(a) Education	..	..	33.00	33.00	112.50	627.92
(b) Economic Uplift	..	..	9.00	9.00	27.00	463.50
(c) Housing, Health & other schemes	..	..	..	..	..	..

Total for S.Cs. 333.22 42.00 42.00 139.50 1,091.42

3. *Other Backward Classes*

(a) Education	..	..	6.00	6.00	22.50	471.00
(b) Economic Uplift	..	..	2.00	2.00	6.00	262.00
(c) Housing, Health & other schemes	..	..	..	..	..	..
(d) Administration	..	..	..	..	..	55.00
(e) Spl. Programme for Rayalaseema and Coastal Andhra	..	..	50.00	50.00	129.94	..

Sub total other B.Cs. .. 58.00 58.00 158.44 788.00

Total for (1 to 3) .. 848.25 220.00 220.00 803.33 3,270.18

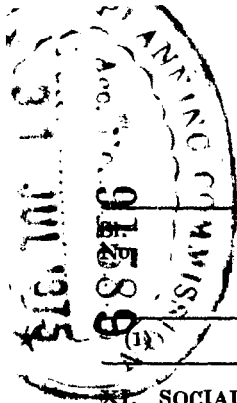


TABLE. II—(Contd.)

(Rs. in lakhs)

Programme	Fourth Plan approved outlay	Approved outlay for 1973-74	Likely expenditure 1973-74	Likely expenditure during Fourth Plan	Fifth Plan Total outlay
(2)	(3)	(4)	(5)	(6)	(7)
XI. SOCIAL WELFARE:					
1. Child Welfare	} 21.56	7.00	7.00	21.04	59.86
2. Women Welfare.					
3. Social Defence	3.96	1.46	1.46	3.55	25.00
4. Welfare of Physically and Mentally Handicapped	2.50	0.50	0.50	2.50	5.00
5. Grant-in-aid to Voluntary Organisations .. .. .	..	..	..	..	..
6. Training and Administration .. .. .	..	..	..	..	..
7. Others .. .. .	..	..	..	..	..
Total (1 to 7) ..	28.02	8.96	8.96	27.09	89.86
XII. CRAFTSMEN TRAINING AND LABOUR WELFARE ..	41.57	15.50	15.50	43.20	205.00
XIII. PUBLIC CO-OPERATION	2.61	0.62	0.62	1.68	..
XIV. INFORMATION AND PUBLICITY	31.48	5.00	5.00	12.83	26.68
XV. PLANNING ORGANISATION	13.86	4.00	4.00	8.91	150.00
XVI. STATISTICS	14.99	5.00	5.00	14.58	50.60
XVII. LAND REFORMS .. .. .	..	..	..	..	500.00
XVIII. AREA PLANNING PROGRAMMES .. .. .	..	..	..	..	822.30
GRAND TOTAL ..	48,562.75	8,759.00	8,759.00	42,748.59	1,27,700.00