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SEVENTH FIVE YEAR PLAN

1985-90

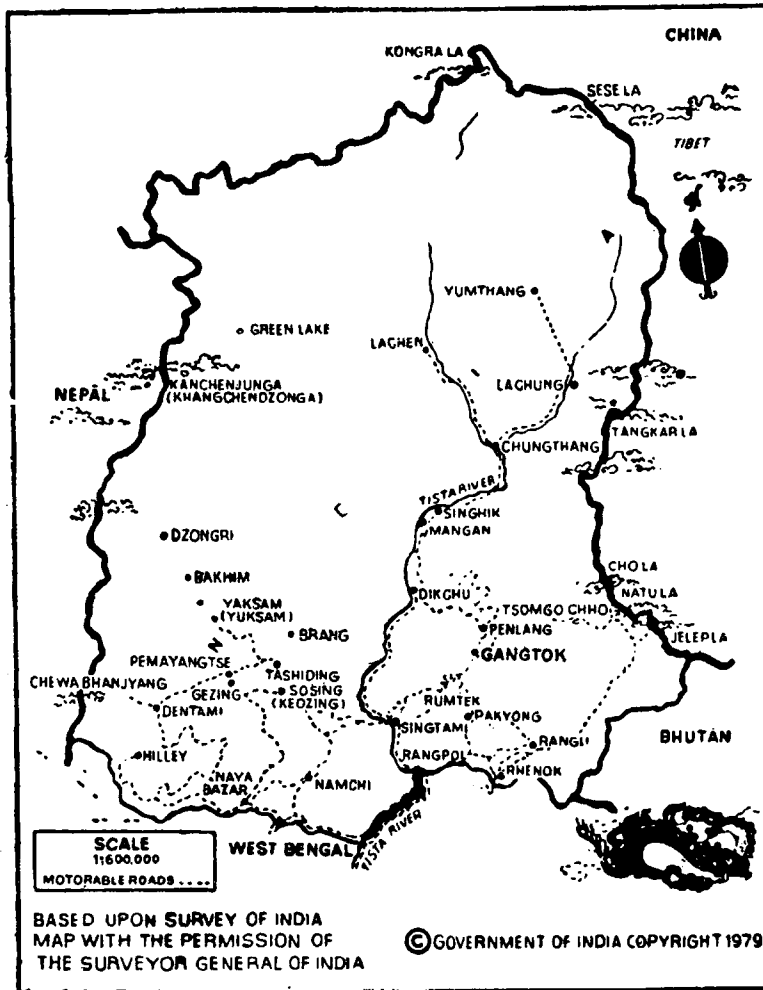
Draft Proposal From
GOVERNMENT OF SIKKIM



Planning And Development Department
Govt. of Sikkim, Gangtok

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SEVENTH FIVE YEAR PLAN 1985-90



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**Planning And Development Department
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SEVENTH FIVE YEAR PLAN

Introduction

Although Sikkim became a part of the Indian Union only in May 1975 planned economic development had taken place in the State ever since 1954 when a technical team of the Planning Commission helped the State to formulate its first plan. The process of planning thereafter was not exactly in accordance with the general pattern prevailing in the other States. The State depended upon Central guidance in plan formulation and its financing. Every year technical teams used to visit the State and draw its annual plan within the frame work of the five year plans.

After Sikkim joined the main stream, the fifth five year plan was started from 1.4.1976. Thereafter, the planning system became similar to the pattern in other States. The fifth plan however was required to be adjusted on account of the rolling plan of 1978-83 which had again to be replaced by the sixth plan from 1980 onwards.

The actual expenditure of the 1979-80 annual plan was Rs. 17.79 crores and thereafter the sixth plan was finalised with an outlay of Rs. 122 crores. The actual expenditure in the sixth plan is likely to be in the region of 134 crores which means an addition of more than 12 crores to the approved outlay.

The pattern of investment underwent certain changes during the sixth plan. In the first few plans the largest investment, in terms of percentage, was in the communication sector, it being between 40 to 50% of the plan outlay. This was understandable since the penetration of remote areas, which are normally inaccessible, was a *sine qua non* to the process of planned economic development. Gradually however, the investment pattern changed and by the time the sixth plan started the share of the primary sector, which was only about 15% to begin with, went up to nearly 30%. The investment pattern in the sixth plan was on the same lines. This profile of investment is in consonance with the strategy adopted throughout the country to remove poverty and to confer gainful employment opportunities in the rural sector where population is concentrated.

Physical features

Sikkim is entirely mountainous with an area of 7,299 sq. kms. It is 114 kms. long and 64 kms wide and is bound by Bhutan in the East, Nepal in the West and Tibet in the North. Consequently it is strategically a very important State in the country. Although the State has an area of more than 7,000 sq. kms the habitable area is only about 2,500 sq. kms. since the rest of the area is perpetually bound with snow or high altitude forests.

The conditions in the State are such that the priorities in the plan have to be somewhat in variance with the States in the plains although the main objectives of removing poverty, providing more food and employment are equally relevant to Sikkim as in other States.

Administratively, the State is divided into 4 districts conveniently called as North, South, East and West. In each district, recently two sub divisions have been created. Below the sub division are 405 revenue blocks. Each revenue block is taken as a village for economic planning. The Panchayats in the State are not coterminous with villages. There are 153 Panchayats in the State.

Rainfall and climate

The region is subjected to heavy rainfall - the average annual rainfall varying from 200 cms. with varying intensity differing from drizzles to heavy showers and to torrential rains. The maximum rainfall is received during the months of May to early September. The terrain of the State being hilly there is wide variation in climate and vegetation. The temperature decreases with increasing altitude. The elevation varies from 300 metres to 5500 metres. The habitable area is normally only up to 2,100 metres.

Population

After the integration of Sikkim as a full fledged State of the Indian Union, it participated in the all India programme of conducting the decennial Census of 1981. According to the 1981 Census, the population of Sikkim was 3.16 lakhs of which 2.65 lakhs (83.85%) was reported from the rural areas and the remaining 0.51 lakhs (16.15%) from the urban areas. East district accounted for the highest population with 1,38,762 (43.85%) distributed over 128 revenue blocks and 3 towns followed by the South district with a population of 75,976 (24.02%) residing in 145 revenue blocks and 2 towns, West district with a population of 75,192 (23.76%) spreading over to 120 revenue blocks and 2 towns and the North district with 26,455 persons (8.36%) located in 54 revenue blocks and one town. The density of population varies from 145 per sq. km. in the East district to 6 per sq. km. in the North district with a State average of 45 per sq. km. The sex ratio measured as the number of females per 1000 males, at the State level is 835 while West district records a maximum of 906. The least ratio of 789 is recorded in the North district.

As regards the composition of the population, the Sikkim Nepalis account for the highest number followed by Bhutias, Lepchas and Sherpas. Within the Nepali group, the Kami, Damai, Sarki and Majhi are notified as Scheduled Castes and account for 5.78% of the total population of the State. They are spread more or less evenly in all the districts. Bhutias, Lepchas and Sherpas, notified as Scheduled Tribes, constitute 23.27% of the population of the State with very heavy

concentration of 53.57% in the North district to as low as 17.52% in South district. The recently conducted survey of population, births and deaths indicates an annual growth rate of 2.41% for the State as a whole with 2.75% for the rural sector and 1.85% for the urban sector. Applying this growth rate to the 1981 base figures, the population as on 1st March, 1984 is projected as 3.42 lakhs.

Land Use Pattern & Agriculture

Of the total geographical area of 7 29,900 hectares, a major share of 36.34% is under forests followed by 28.64% of barren and unculturable land. In addition, permanent pastures and grazing land including culturable waste and land put to non agricultural uses account for 14.04% and 9.58% respectively. Thus the land available for cultivation is about 11.40% of which 0.57% is under miscellaneous tree crops and groves. The area under crops is distributed over 31,061 holdings with 35% located in East district, 33% in West district 25% in South district and the remaining 7% in North district. As regards size of the holdings, about three-fourth of the holdings are below 3 hectares of land accounting for an operated area of about 53.55%. Of the remaining, most of the holdings have an area between 3 to 20 hectares covering 61.44%. As most of the holdings in the North district are under cardamom crop average size of the holding is higher in North it being 7.71 hectares.

Although a wide variety of crops is grown in the State, the more important among them are maize, paddy, cardamom, wheat, orange, potato and millets. The area under the major crops is given in the statistical supplement. The altitude and temperature naturally influence the cropping pattern. Cultivation takes place in three seasons namely the pre-kharif, kharif and rabi.

Since the available land, which can be brought under cultivation without disturbing the ecology of the hills, is very restricted, the future agricultural pattern has to revolve around optimum utilisation of existing cultivable land through the introduction of a package of services like better and improved varieties of seeds, larger doses of fertilisers, wide spread use of plant protection systems and the conservation of top soil, all of which are important in increasing the productivity per unit area. The agricultural strategy in the 7th plan will accordingly be essentially to improve productivity which is consistent with the National objective of improving productivity and producing more food for the Nation. The various schemes contemplated during the plan will accordingly revolve around the basic premise that within the available land there should be more intensive cultivation leading to increased food production.

Animal Husbandry

Animal Husbandry activities are closely allied to agriculture in the State because most of the farming families in the State keep a few heads of cattle, pigs and goats and in some areas poultry. Excepting for cattle development, the farmers of the State have not

considered so far the rearing of other animals as contributing to economic regeneration. During the Seventh plan while efforts will be made to improve the breed of cattle by adopting a progeny policy which will take into account the existing type of breeds, the availability of feed and other climatological factors, the next five years will also be utilised for making a break through in poultry and piggery development as a major economic activity in the rural areas. State level farms will provide the needed infrastructure for the purpose of providing at the farm level facilities for rearing improved varieties of birds and animals not only for the purpose of consuming meat and animal products within the homestead but also for commercialising such operations on a larger scale.

Rural Development

The introduction of poverty alleviation programmes particularly the IRDP and NREP as major items of relieving unemployment has set in motion certain healthy impulses. The success of the IRDP depends almost exclusively on the availability of credit. Fortunately for Sikkim, there has been a tremendous expansion of banking services in the past few years with a number of branches of major Nationalised banks coming up in different parts of the State. There is therefore great hope that in subsequent years banking services will improve for the benefit of the common man. The IRDP and NREP will continue to be major policy instruments in the drive against poverty.

Development of Power

In 1975-76 when Sikkim became part of India the total installed capacity in the State was only just over 3 MW and the supply of power was rather erratic. There was practically no change in capacity upto 78-79 when, in September, 1979, the first phase of the Lower Lagyap Project started functioning making available an additional 3 MW firm power and 3 MW of seasonal power to the State. The second phase of Lagyap was also commissioned in April, 1984, whereupon the installed capacity rose to 12 MW. Including about 1.6 MW of diesel power total installed capacity went upto 17 MW. Unfortunately, torrential rains in the month of May 1984 resulted in a whole section of the Lagyap system getting washed away as a result of which the firm power generation from Lagyap has once again come down.

This is however expected to be restored within a year.

Rapid growth in the economy however, requires that the generation of power becomes more sustained not only to make the State self reliant on this account but also for the purpose of obtaining additional revenues by the sale of surplus power to the neighbouring State. With this view in mind the strategy in the power sector has been to identify small micro hydel schemes and to investigate them efficiently and as quickly as possible so that before too long the State could generate more power. Micro hydel schemes are easier to

implement and can serve localities in and around the area of generation which will consequently minimise transmission losses. However, they are rather costly and therefore finance has always been a constraint leading to inevitable delays in implementation. In order to overcome such delays, sizeable outlays have been projected in the Seventh Plan exclusively for new generation schemes.

The following table gives, the energy balance sheet for 1980-85.

Energy Balance Sheet 1980-85						Unit : KWH
Sl. No.	Particulars.	1980-81 (A)	81-82 (A)	82-83 (A)	83-84 (A)	84-85 (Re)
1.	Total Energy Generated	17.44	21.67	25.43	27.77	26.40
2.	Energy consumed by different categories.					
a)	Auxilliary.	2.52	2.67	2.94	2.72	2.70
b)	T & D losses.	3.42	4.17	4.28	4.25	4.20
c)	Public Lighting.	0.40	0.35	0.45	0.60	0.65
d)	Lower Lagyap (construction)	3.10	3.53	4.15	2.28	2.00
e)	Domestic	5.00	5.64	6.47	9.31	9.55
f)	Commercial.	1.50	1.76	1.96	2.50	2.00
g)	Industrial	1.50	2.90	3.45	3.89	3.00
h)	Other States.	—	0.65	1.73	2.22	2.30

Development of Industries

Availability of power is the first pre-requisite for rapid industrialisation. Although the terrain and communication problems of the State do not make industrialisation an item of top priority there is no gain saying the fact that with more and more young boys and girls studying in high schools and colleges and with lesser and lesser opportunities of direct absorption in Government, the need to provide a climate of industrialisation particularly in the small scale sector is over due. With this end in view the emphasis in the Seventh plan would be to identify and promote those industries which by their very nature would use local raw materials and skills and would attract local entrepreneurs.

Health & Family Welfare

Medical and Public Health Services have made its impact in improving the health and hygienic conditions of the people at large and those in the rural sector in particular. It is seen that only 71 out of the 405 revenue blocks in the rural sector have either a primary health centre or primary health sub centre located within it and for the inhabitants of as many as 204 revenue blocks medical facilities are available only beyond

a distance of 5 Kms. Hospital facilities are available only at the district headquarters viz Mangan, Gangtok, Namchi, Gyalzing and Singtam. Considering the high rate of incidence of diseases peculiar to the hilly terrain and the need for immediate medical attention, there is thus a strong case for enhancing the facilities currently available in the district hospitals and opening up similar institutions distributed over the State.

Literacy & Education

The 1918 Census records a literacy rate of 34.05% at the State level—East district with 49.39% accounts for the maximum literacy rate and West with 33.62% accounts for the lowest literacy rate. It is heartening to note that from as low a level of 3.54% in the year 1931, the literacy rate has improved to 34.05% in 1981 presumably due to the thrust given to the spread of formal and non-formal education systems in the State. Despite the growth of educational facilities, it is seen that as many as 100 out of the 405 revenue blocks do not have primary schools located within it. This aspect is more prevalent in South district with 37 revenue blocks without primary school facility and North district with 32 revenue blocks belonging to this category. The school going children of 75 revenue blocks have to walk a distance of 1-5 kms and those belonging to 25 revenue blocks are required to walk for more than a distance of 5 kms. for receiving primary education. The recently conducted village directory enquiry further reveals that Junior high schools are located in only about 74 revenue blocks and higher secondary school facilities in the rural sector are available only in 8 revenue blocks. The directional thrust of the educational plan is thus clear.

Roads & Communication

The communication system in the state being solely dependant upon roads, the system of transportation of passengers and commodities is directly influenced by the terrain of the state and the geographical conditions characterised by land-slides and breaches during the rainy season. As a result of the emphasis given to this sector of development notable achievements have been made. It is seen that about 50% of the revenue blocks (201 out of the 405) are connected by pucca jeepable approach road at a distance varying from 1 to 5 kms. West district with 53.1% of its revenue blocks connected with pucca roads tops the list and North district with 42.2% revenue blocks is at the bottom. As regards communication, only 100 out of the 405 revenue blocks have either post or sub post-office facilities located within it. While for 170 revenue blocks such facility is available at a distance of 1-5 kms. the inhabitants of the remaining 135 revenue blocks have to foot a distance of more than 5 kms. for availing of postal facilities.

Working Force

Of the total population of 3,16,385 recorded in the 1981 Census, 46.60% are classified

as main workers and 1.70% as marginal workers. Even though more or less similar pattern of work participation is observed in all districts, differential rates have been seen among males (56.46%) - and females(34.45%) such differentials prevailing in all the districts. The high participation rate is consistent with the labour participation feature of the hilly states attributable to the physical and climatic conditions. Disguised unemployment and underemployment are widespread in the rural areas and by and large a good number of persons having nothing else to do attend to farm activity or household enterprises as additional hands. It is pertinent to note that about 29.56% of the total population are engaged either in own cultivation or farm labour and 17.05% in other secondary and tertiary sectors,

	Male	Female	Total
1. Population	1,72,440 (100.00)	143,945 (100.00)	3,16,365 (100.00)
2. Main workers	97,508 (56.55)	49,928 (34.69)	1,47,436 (46.60)
2.1. Cultivators	48,907 (28.36)	39,703 (27.60)	88,610 (28.01)
2.2. Agri. Labourers	3,361 (1.95)	1,526 (1.06)	4,887 (1.55)
2.3. Household industry	1,216 (0.71)	370 (0.25)	1,586 (0.50)
2.4. Other workers	44,026 (25.53)	8,329 (5.78)	52,353 (16.54)
3. Marginal workers	1,155 (0.67)	4,218 (2.93)	5,373 (1.70)
4. Non - workers	73,770 (42.78)	89,801 (62.38)	1,63,571 (51.70)

(N.B., The figures in bracket indicate percentage to total).

There is a very heavy leaning towards agricultural sector for supporting the labour force giving a clear indication that the excess labour force needs to be diverted to other sectors. Viewed in this perspective, substantial scope exists for raising the efficiency of the industrial sector particularly pertaining to cottage industry. Diversion of excess labour force from the farm economy can pave the way for an accelerated growth of the economy.

Prices

Even though consumable articles in general witnessed price increases more or less uniformly throughout the Sixth Plan, the prices came under pressure towards the end of the year 1983-84. A significant aspect of the rise in prices was its concentration in few essential commodities such as edible oils, pulses, milk and milk products, fish, egg, nut-ton, coal, charcoal, toilet and washing soaps and vegetables. Prices of these commodities rose on an average by more than 15 percent as a result of which the consumer price index number registered a steady increase. The annual rate of inflation as measured by the consumer price index number in April, 1984 was 11.04 percent.

State Income

The year 1983-84 witnessed a reasonable economic surge piloted by the agricultural sector, Agricultural production reached an overall target of 1,14,770 tonnes registering an increase of 25.2 percent over the level attained in the year 1982-83. The Animal Husbandry sector was comparatively slower but contributed in its own fashion to the economic growth. Prices continuing their rising trend registered a sharp increase in the later part of the financial year 1983-84. The significant and note-worthy increase in agricultural production and the modest increase in the other primary sectors like horticulture, animal husbandry, fisheries etc. has given rise to an increase in the growth of the state domestic product. On the basis of the available statistical information on various aspects of the economy, it has been estimated that at current prices the state domestic product (S.D.P.) for the year 1983-84 is of the order of Rs. 44.44 crores as against the level of Rs. 35.93 crores in the year 1982-83 the increase being 23.68 percent. As a result of the increase in SDP the per capita income has risen to Rs. 1300.45 from its recorded level of Rs. 1078.75 during 1982-83 both measured at the prices prevalent during the respective years. A major part of the increase witnessed in the state domestic product and per capita income could be attributed to the price increase in the economy characterised by the observed inflationary rate of 11.04 percent as revealed through the consumer price index number. The state domestic product computed at constant prices of 1981-82 is seen to have risen from the level of Rs. 33.58 crores in the year 1982-83 to Rs. 37.36 crores in 1983-84 the increase being of the order of 11.12 percent signifying the growth of real income.

Per Capita Income

It has been well recognised that the most important and convenient measure of regional disparity is the differentials in state domestic product at per capita level, as these estimates when available for a given point of time provide a cross sectional measure of inter state disparity. The state remains more or less at the bottom when compared with the per capita income level of other states. During the year 1981-82 the per capita income of the state was Rs. 899.67 and this was the least prevalent amongst the states and even in the year 1982-83 the level of Rs. 1078.75 attained in Sikkim happens to be the lowest as compared to the remaining states and union territories. Only recently, it has been showing some signs of recovery due to sustained planned endeavour. Still the per capita income of the state at the current prices for the year 1983-84 worked out as Rs. 1300.45 compares very unfavourably with the all India level of Rs. 1891 achieved in 1982-83 indicating the extent of disparity prevalent.

It is against this back drop of experience that the seventh plan proposals have been

formulated with its orientation on reducing the poverty rate within the plan period.

A brief review of the sixth plan follows :

Review on the Sixth Plan

The Sixth Five Year plan which ends on 31st March 1985 had an approved outlay of Rs. 122 crores. The actual expenditure is expected to be around Rs. 134 crores. The details giving sectorwise expenditure are given in the statement G N. 1

Gauged from some of the salient achievements the 6th plan can be considered to be a success.

The state, like other sister states is predominantly based on agriculture and being a hill state horticulture and other commercial crops are of equal importance. The improvement in agriculture during the 6th plan can be assessed from the increased level of foodgrain production which rose from 57420 tonnes to 93,000 tonnes which is 13,000 tonnes more than what was targeted for in the beginning of the first year of the plan. Other inputs which have shown remarkable improvement in agriculture are the total quantum of consumption of fertilisers, the figures of which are 600 tonnes in 1980-81 going up to 1500 tonnes in the terminal year of the plan. Wider coverage under plant protection, cultivation of high yielding varieties and the improved techniques in seed processing and certification are indicators of growth in agriculture. In horticulture the availability of seedlings from progeny orchards of the state has enabled the propagation of improved seedlings over extensive areas. Marketing was also given a boost during the 6th plan. Certain new schemes like pulses and oil seed development and the introduction of dry land agricultural cultivation were also innovations in the 6th plan.

The control of soil erosion by terracing fields, conserving moisture and in adopting new techniques of soil conservation received an impetus during the 6th plan particularly after the creation of a Land Use directorate based upon the recommendation of a high power team that visited the state in 1982. Thereafter the Land Use directorate has been taking up schemes for the complete control of water sheds so that the effect of soil control in one area would be beneficially utilised in other areas.

In Animal Husbandry and Dairy Development the 6th plan period was one of consolidation which saw the gradual building up of the nucleus of an improved breed of cattle by extensive use of artificial insemination methods. The commissioning of the Sikkim Milk Union which not only set in motion a process of economic development at the village level but also enabled the more wide spread use of artificial insemination methods has contributed in no small measure to the over all development of animal husbandry. The organisation of the milk union has resulted in the supply of wholesome milk to consumers.

There has been improvement in the field of poultry production and other related activities although the potential for poultry and piggery has not been fully tapped. During the 6th plan the SLDC set up a subsidiary unit called the 'Sikkim Organics' which is to utilise animal waste for the purpose of producing manure and other industrial byproducts.

In the field of forestry, social and farm forestry were given considerable impetus by including the plantation programmes as a part of the Prime Minister's 20 point programme. More than 4 crores of seedlings were planted in the afforestation programme of the department. The establishment of the Kanchanjanga National Park as a wild life sanctuary was another notable achievement of the department.

In the matter of poverty alleviation, two programmes which received a lot of support were the IRDP and the NREP. Both the programmes aimed at improving the economic level of the poor families. The opening of more and more branches of Nationalised banks facilitated the implementation of the programme.

The introduction of the Vikas Patrika was also instrumental in monitoring the progress of the scheme. The IRDP also went about the TRYSEM in a big way as a result of which we have a number of trained men and women who are capable of starting their self employment units with proper financial help.

In the field of Cooperation the establishment of the Sikkim Marketing Federation was a major achievement. The federation, through the help of the NCDC is likely to take up important trading and marketing activities which include the marketing of large cardamom, ginger and perhaps oranges. It will also undertake the procurement and distribution of essential oil like mustard and rape seed.

As far as Power Development is concerned the commissioning of Lower Lagyap eased the power situation in the State. More micro hydel schemes have been investigated and two of them the Sang Khola and Rimbi Stage II are already in an advanced stage of consideration. More villages have been electrified and today atleast 161 can boast of having electric supply.

There was correspondingly a lot of progress in the industrial sector where, apart from the Roller Flour Mill which was established as a public sector unit a number of small units in the small scale sector were established through financial assistance rendered through the Sikkim Industrial Development Corporation.

The 6th plan was also notable for the large scale investment in the road sector. Apart from the extra kilometers added to the road net work the importance attached to the consolidation of existing roads by widening and protecting the base helped in establishing

the state among the better served areas in the Himalayas. Major bridges like the one at Melli was constructed and another one at Jorethang is under construction. The one at Legship is also in an advanced stage of consideration.

In the social service sector progress made in education is also impressive despite the fact that the position still continues to cause concern. The enrolment level increased from 39,684 to 60,821 during the 6th plan period and as a result 3044 number of additional teachers at the primary level were recruited. During the 6th plan period the emphasis given was to upgrade educational institutions wherever the need was felt and to provide physical facilities by adopting novel schemes like low cost class rooms, construction of class rooms through NREP and so on. Despite the gigantic effort made, there was still a back log which is progressively being made good. Another important aspect of the 6th plan was to rationalise the teachers training programme and to provide additional opportunities for in service training. The Degree College was consolidated and a Law College giving instruction during evening hours was constiuted.

In the field of health, more primary health centres were constructed and the state has fulfilled the norm of having one Primary Health Centre for every 20,000 population. Eighty-two Primary Health Sub-Centres were sanctioned and the facilities in the Government hospitals were improved upon and for providing nutrition to children and expectant mothers, an extrusion plant was commissioned at Tadong.

Supply of clean water was another objective which was fulfilled with great gusto. By the end of the 6th plan all the 405 revenue blocks would be covered with drinking water but since the type or habitation in Sikkim consists of hamlets the programme of supplying drinking water to such isolated pockets within a revenue block would be continued. In the urban sector also the water supply position has been improved upon particularly in Gangtok where a major augmentation-cum-distribution scheme was taken up. The sewerage scheme in Gangtok also went ahead although somewhat slowly.

As far as housing is concerned the 6th plan saw the construction of more government quarters and the introduction for the first time of a social housing scheme where GCI sheets were distributed to selected families.

As regards the under privileged and weaker sections of the community an old age pension scheme was introduced for the first time. Handicapped persons particularly the blind were given special facilities including the organisation of a sheltered workshop at Jorethang. For the first time a scheduled tribe and scheduled caste component plan was drawn up exclusively for the benefit of the scheduled castes and scheduled tribes.

From the above description it can well be said that a lot of progress has been achieved

within the state during the five years starting from 1980-81 which in arithmetic terms has resulted in the state domestic product approximating to Rs. 45 crores with a per capita income of Rs. 1,300/-. This is lesser than the All India level and hence Sikkim continues to be a backward state qualifying for special consideration. This then is the broad scenario on which we are embarking on the Seventh Five Year plan.

Approach To The Seventh Plan

The approach to the Seventh Plan was discussed in the National Development Council in July and the document prepared by the Planning Commission on this behalf was wholeheartedly approved by the Chief Ministers. The State plan will therefore have to be in conformity with the broad National objectives. The guiding principles of the Seventh Five Year plan have been laid down as continuation of growth with equity and social justice, efficiency and productivity. Within this framework it has been mentioned that the movement towards social justice has to be faster and there must be a sharper focus on employment and poverty alleviation. Emphasis has been laid on consolidating existing assets created during the earlier plans and to make optimum use of such assets. The three watch words of the Seventh plan, which have been personally emphasized by the Prime Minister herself are more productivity, more jobs and more food. The approach document at the National level has *interalia* given special thought to the maintenance of a proper environment, the introduction of scientific and technical input and the decentralisation of planning activities so that the anti-poverty programmes could be more effectively implemented.

Keeping all these aspects in mind, the outline of the Seventh. Five Year plan has been drawn up for the state. In simple terms, the projection of the state for the Seventh plan is Rs. 302 crores as against the approved Sixth plan outlay of Rs. 122 crores. If one takes into account the inflationary situation and the real value of the rupee the increase cannot be considered as being over optimistic. As a matter of fact, if the base level figure is taken as Rs. 35 crores. which is the annual plan for the year 1984-85 and if 12 to 15 percent growth rate is envisaged during the successive years of the Seventh plan, the final size of the Sikkim plan should be around Rs. 250 crores. To this, a few extra crores have been added because of some new schemes that are contemplated. A very brief idea of the new schemes is given below.

In forestry, the department has, with the help of the Government of India, prepared a very extensive social forestry programme which has to be financed through World Bank assistance. The Government of India have tentatively agreed to the state proposal. The scheme of financing envisages that atleast Rs. 5 crores for this purpose will have to be contributed by the State Government. Accordingly, we have included Rs. 5 crores for this in the state plan.

The communication system in Sikkim, though good in comparison with other hill states, still cuts off the state particularly during the monsoon and sometimes even during good weather. The need for having a transportation system to various parts of the state without depending upon road has been considered for a long time and accordingly a proposal has been included in the Seventh plan for the state to purchase a helicopter and to operate it by our own staff. This has been felt to be a better alternative to the construction of an airstrip and to request the Vayudoot to operate the service. The total cost of the helicopter including operational expenses is estimated to be around Rs. 2 crores which has also been included in the Seventh plan.

Another costly scheme which has been included as a major item in the Seventh plan is the supply of water to Namchi town. Preliminary investigation reveals that water will have to be drawn over 30 kms from a perennial forest source. The estimated cost of this venture will be between 4 to 5 crores which has also been included in the plan. In addition, there is also a proposal to pump up water in multiple stages from the Rangit to Namchi town not only to serve as an alternative water supply system but also as a medium irrigation project which will contribute to optimum utilisation of land in and around Namchi town. The estimated cost of the scheme is around Rs. 7 crores.

The Power department has very rightly projected its requirements for more generation schemes because of the need to make the state self-reliant in power generation and also as a source of earning revenue for the state. A number of small micro hydel schemes have already been investigated in a preliminary way and all of them hold out good promise for quick and efficient generation of power. Such schemes are however, very costly and so a minimum of Rs. 20 crores has been projected for these purposes in the plan.

The decentralisation of administration which has already been pronounced as a National objective has to be tackled in an efficient way in the Seventh plan. For earmarking specific amount in the state budget to be handled at the district and lower levels a consolidated amount of Rs. 2 crores has been proposed in the Seventh plan for being placed at the disposal of the District Collectors without attaching them to any specific sector so that the District Planning mechanism would have complete freedom to utilise the amount, in the most pressing areas of that particular district. In addition, it is proposed to give an annual grant of Rs. 20,000 to each of the 153 panchayats so that grass root level planning and implementation of ordinary schemes can be undertaken at the district level

Finally, in the field of nutrition a new scheme of providing hot meals to children and expectant mothers is proposed to be introduced in all the ICDS centres in combination with extruded food which will not only ensure that no child goes hungry but also will provide additional employment opportunities to women in particular who could be employed as supervisors and helpers in such centres.

As far as the other sectors are concerned, the Seventh plan is proposed to represent a continuation of existing areas of development with limited expansion but more of consolidation. In Education in particular, the emphasis will be to prevent the rate of drop outs and to make good the gap in the teacher input both in quantitative and qualitative terms. More residential schools including a sainik school will be insisted upon and incentive scholarships for attendance will be given. In the field of health also, the emphasis will be on making the existing institutions more capable of handling ordinary diseases and for these purposes more specialists will be inducted and hospitals and Primary Health Centres provided with basic equipments which are today unfortunately lacking in them. Control of goitre, tuberculosis and blindness will be given added importance. As far as Rural Development Department is concerned although the same type of schemes will be pursued an endeavour will be made to introduce systems through which a cluster approach is adopted and all government functionaries made to inspect the level of attainment in the various fields of activities.

The Seventh Five Year plan will consist of a set of schemes some of which can be implemented at decentralised levels. It will be the endeavour of the government to start the grass root level system of planning by making the Panchayats responsible for formulation and implementation of small schemes and to suggest the nature of bigger schemes to be implemented at the district and state levels. While the main planning activities will continue to be undertaken from the state level, the district authorities will be given a larger say in the entire process of planning not only by allotting some specific sums of untied money but also by earmarking some of the amounts from sectoral budgets to the district.

As in the previous plans, importance has been given for the minimum needs sector. The total amount earmarked for the minimum needs programmes out of a projected plan outlay of Rs. 302.50 crores is Rs. 74.74 crores. Similarly the 20 point programme of the Prime Minister will also be given the same importance as was given during the previous plan. The total plan outlay for the items constituting the 20 point programme out of the projected amount of Rs. 302.50 crores is Rs. 120.13 crores.

As far as the financing of the plan is concerned the low resource base of the state requires it to depend upon central assistance even during the Seventh Five Year Plan. It is presumed that the assistance that would be given by the centre to the state will be as before 90% grant and 10 loan. As far as the states resources are concerned the low resource base being what it is the only scope of raising extra revenue is to increase the current levels of rates of taxes particularly in state excise, sales tax and other miscellaneous taxes including revision of bus fares and electricity consumption duties. It is envisaged that through such measures an additional resource of approximately Rs. 4.5 crores can be generated during the five year period.

Besides the revision of rates of existing revenues, the only other way of resource raising is to impose taxes in new areas. The possibility of introducing taxes under agricultural income and profession tax will be considered along with a tax on passengers and goods which has hitherto not been introduced in the state. Since a number of buildings are coming up in the state and the owners are not contributing anything to the government the possibility of imposing a special tax on buildings which have plinth area of more than a prescribed limit will also be considered. In the overall analysis not more than 6 to 7 crores can perhaps be contributed by the state as its own revenue for the entire plan period.

Man Power Development

Human resource development is an important aspect to be given consideration in the state plan. It is necessary to expand opportunities for education, training and on the job experience so that the state can move progressively towards self sufficiency in skilled and educated man power.

In Sikkim there is a dearth of man power in selected fields which are mainly technical and semi technical. In some of the areas there is a large gap between the sanctioned strength and existing strength which is evident from the following table :

Department	Sanctioned — Strength	Existing — Strength	Difference
1. Health & F. W.			
(a) Doctors (Specialised)	34	18	16
(b) Doctors (General)	70	49	21
(c) Asst. Metrons	7	1	6
(d) Staff nurse	46	37	9
(e) Compounder	105	70	35
(f) Lab-Technician	43	22	21
2. Deptt. of Education.			
(a) Post Graduate teachers	140	135	5
(b) Graduate teachers	899	849	40
3. Deptt. of Animal Husbandry			
(a) Veterinary Doctors	55	26	29
(b) Dairy Technologist	3	3	Nil
(c) Accountants	7	3	4
4. Deptt. of Land Use & Environmental.			
(a) Range Officers (BAC)	12	9	3
(b) Block Officers (Matric trained).	24	18	6
(c) Sr. Soil Surveyor (FDSC trained)	4	1	3

From the above table it can be seen that the absorptive capacity of technical man power in the state is very high.

In order to assess the man power intake in various governmental sectors it is necessary to assess the existing strength and the likely vacancies arising on account of retirement or other natural causes. This is rather negligible in the state since a vast majority of the personnel were appointed only after 1975. The following table gives the position of job seekers as revealed from the live register of employment for the year 1983-84.

Level	Local	Non-Local	Total
1. M. R. (unqualified)	135	197	332
2. Class I to VII	423	153	576
3. Class VIII to IX	338	175	513
4. Class X to XI	529	360	889
5. Class XII	139	94	233
6. Graduate	115	105	220
7. Technical Personnel	14	17	31
8. Ex. Service Man	11	56	67
Grand Total	1704	1157	2861

The above table reveals that the number of job seekers in comparison to other states is negligible. It is also interesting to note that highly qualified persons both technical and non-technical do not figure in the list. This is indicative of the fact that there is a short supply of technical and non-technical personnel indicating a high absorptive capacity in the state. The table also indicates that job seekers from outside the state have also registered their names.

In the Seventh plan period, skilled personnel are likely to be required in engineering disciplines, social sciences, medical and other professional fields. The projected requirement during the Seventh plan period is given in the following table :

Projection of requirements during the 7th Plan Period (Selected Deptt).

Name of the Post	1985-86	'86-87	'87-88	'88-89	'89-90	Total
1	2	3	4	5	6	7
1. P.W.D. (a) Engineer	43	52	55	62	65	277
(b) Diploma Holders	100	97	95	95	96	483
2. Health Deptt.						
(a) Doctors	15	15	15	15	10	70
(b) Staff Nurse	32	31	30	33	29	152
(c) Pharmacist	2	2	2	2	2	10
(d) Compounders	11	11	11	11	11	55
(e) Lab/Technician	7	7	7	7	8	36

1	2	3	4	5	6	7
3. Animal Husbandry,						
(a) Veterinary doctor,	5	5	5	5	5	15
(b) Dairy Technologist	5	Nil	Nil	Nil	Nil	5
4. Education :						
(a) Post Graduate teacher	8	56	42	28	14	224
(b) Graduate teacher	227	235	195	152	159	968
5. Mining & Geology :						
(a) Engineers	4	4	4	4	4	20
(b) Geologist	7	7	8	8	8	38
(c) Chemist	3	3	3	3	3	15
(d) Surveyors	2	2	2	2	2	10
6. Forest Deptt.						
(a) I. F. S. Cadre	6	4	2	2	2	16
(b) S. F. S. ..	3	3	3	3	2	14
(c) R.O. ..	6	6	6	6	4	28
7. Fisheries Deptt.						
(a) Post-Graduate		1	1	1	1	5
(b) Graduate	7	8	8	8	8	39
(c) Diploma Holders	2	3	3	4	4	16
8. Agricultural Deptt.						
(a) Post Graduate	14	16	18	20	22	90
(b) Graduate	70	77	84	92	100	423
9. Irrigation Deptt.						
(a) Engineer	7	5	5	5	5	27
(b) Overseers	5	4	4	4	4	21
(c) Technical Staffs	16	—	—	—	—	16
10. Land Use and Enviromental :						
(a) Soil Conservation Officers	3	—	—	—	—	3
(b) Accountants	5	—	—	—	—	5
(c) S. A. C.	4	—	—	—	—	4

According to this table about 3005 additional staff of class I category including technical and non-technical will be required during the plan period in addition to other categories of staff like accountants. The more important sectors requiring specialist staff are engineering medical and animal husbandry.

In order to take stock of available manpower and to assess whether the state will be

able to generate the required man power a study has been undertaken, details of which are tabulated below :

Sl. No.	Name of the course	Years candidates were sponsored						Total
		1979-80	80-81	81-82	82-83	83-84	84-85	
1.	M. B. B. S.	17	8	14	14	12	18	83
2.	B. D. S.	1	1	1	2	3	8	16
3.	Homeo	—	—	—	—	—	—	—
4.	B. E.	8	10	19	13	17	17	84
5.	B. Sc Ag/B. VSc/	5	5	16	8	9	10	53
6.	B. Sc Geology	—	—	4	—	—	2	6
7.	Diploma in Engineering	12	5	23	24	46	46	156
8.	B. Phy. Ed.	—	—	4	—	1	2	7
9.	M A/MSc/MBA Hotel Management	—	—	5	8	10	10	133
10.	B. Com	—	—	—	—	—	4	4
11.	Tib. Studies	4	2	2	2	2	2	14
12.	BA/HSC	4	2	4	4	4	7	25

Sl. No.	Name of the Course	Year candidates become ripe for absorption.					
		1984-85	85-86	86-87	87-88	88-89	89-90
1.	M. B. B. S.	—	17	8	14	14	12
2.	B. D. S.	1	1	2	3	4	—
3.	Homeo	—	—	—	—	1	—
4.	B. E.	8	10	19	13	17	16
5.	B.Sc Geology	5	19	8	9	10	—
6.	B.Sc Geology	—	2	—	—	2	—
7.	Diploma in Engineering	5	22	24	46	46	—
8.	B. Phy. Ed.	4	—	1	2	—	—
9.	MA/MSc/MBA/Hotel Mge.	8	10	10	—	—	—
10.	M. Com	—	—	3	—	—	—
11.	Tib. Studies	2	2	2	2	2	—
12.	BA/BSc/BED	2	4	2	2	7	7

From the above tables it can be seen that there are a total of 445 students pursuing studies for higher degrees. Many of them are already in the pipeline and the first batch of such students are likely to be available for absorption in government sectors. A

comparison of the number of students in the pipe line with the projection of man power needs, reveals that despite the fact that more students are pursuing higher studies there will still be a short fall in man power. In the ordinary graduate level there will be large turn out of graduates and if they do not go in for higher specialisation they will be in search of jobs and hence the pressure on government will be considerable. Hence during the Seventh plan the state is likely to face the dilemma of educated unemployment on the one hand and the ample opportunities on the other hand for technical man power. The gap in skilled man power will have to be made good either by recruiting such persons from other states or by obtaining people on contract or deputation. The whole matter will have to be considered keeping the possible social repercussions in mind, but it is evident that as a long term objective the state education plan has to lay emphasis on quality rather than quantity and make education oriented towards vocational and technical skills.



Agriculture

INTRODUCTION :

Like in other States of India agriculture occupies the most important place in the economic life of the people of the State. The majority of the people depend upon land for their livelihood. Being a hill State there are inherent limitations for expanding the area under cultivation. As a matter of fact in terms of percentage the area under cultivation out of the total geographical area of the State is only about 12% which is understandable when the terrain is taken note of. Nearly two thirds of the State is covered with snow and virtually inaccessible forest as a result of which cultivation has to be confined to the more easily accessible areas in the lower altitudes. Even in these regions the steep slopes render it difficult to organise traditional cultivation. However, over the years the farmers of the State have, with great success, been able to terrace their land and cultivate not only field crops but also vegetables and fruits.

The fact that hill sides have to be shaped for making them cultivable has caused a certain amount of erosion problems as a result of which the further expansion of agriculture in this direction is fraught with difficulties. In view of these constraints the main strategy in agriculture has to be to increase productivity. Consistent with the theme of the 7th plan which is to provide more jobs, more food and increase productivity, the nature of the schemes that are under contemplation is essentially to use existing land for multiple cropping, to increase per hectare yield by better practices and use of better inputs. These measures will be supplemented by more extension services and by providing incentives to the farmers—to go into commercial oriented agriculture.

In Sikkim, a proper beginning in agricultural development can be traced to the period after the merger when 9 agriculture regional centres were established in different eco-geographical regions of the State. These focal points of agricultural development were gradually given all the needed facilities for conducting adaptive trials and for identifying the type of seeds and varieties most suitable for the region. From a very rudimentary start these Centres today possess the basic infrastructure including facilities for producing their own seeds and seedlings. Attached to the regional centres are a number of VLWs, operating in selected regions of the State essentially for extension services. The strategy adopted has brought in rich dividends and therefore in the 7th plan these systems will be continued with vigour.

The thrust in the Seventh Plan would be to consolidate the gains made during the Sixth Plan, to orient agricultural development in such direction as to maximise yield per unit area and to raise productivity by adopting appropriate programmes and policies, by making optimum use of the limited land resource without disturbing the ecology. This can be rendered possible by orienting the development programmes towards the adoption of high-value crop production along with concerted efforts directed to protect, preserve and restore the ecological balance of the State. This necessarily calls for bringing about certain changes in the traditional land use patterns and introduction of more scientific and modern practices of land management in the light of the urgency of the problem of erosion and to make use of the available lands in the best possible way according to the situation, topography, suitabilities and capabilities. Information on the ideal land use patterns of slopes and agro-climatic situations is available and ready for the transfer of these techniques of land use systems into the farmers' fields through a practical approach.

The primary objective of the Seventh Plan is to promote such land use and cropping programmes which will give maximum per unit area net income to the cultivators. The farmers will be given adequate support to motivate them to take up faster adoption of improved agricultural practices which is of utmost importance in a State like Sikkim where they are backward compared to other advanced States. The existing practice of growing seasonal crops in steep slopes without any soil conservation measures will be replaced by a more ideal land use system including agro forestry, agro-horticulture, silvi-pasture etc. including cultivation of crops. The extension service will be reorganised to enable field level functionaries to have better contact with farmers and execute agriculture development programmes in a more meaningful manner. The approach to development will be based on individual farm rather than on region.

In consideration of the topography and hilly terrain, the most suitable crops for Sikkim would be fruits and commercial crops like orange, large cardamom, ginger, seed potato, table potato, turmeric and off-season vegetable than the production of foodgrain. However, taking into account the remoteness of the area and transport problems, the need for attaining self sufficiency in foodgrains cannot be completely overlooked. Under the prevailing situation the best would be to use land in such a manner that individual farmers can grow both food crops and cash crops, by devoting the best land for food crops and other seasonal crops, and by allocating slopy unterraced lands for fruits and plantation crops, go in for mixed cropping such as inter-cropping, Further, the farmers could also be motivated to relay cropping, etc. Another approach to increase the production of food-grains would be to lay equal stress on double or multiple cropping, particularly, in lower and mid altitudes, the scope for which is bright and promising. Concerted efforts, therefore, will be made to narrow the gap of foodgrain deficit, although the State is likely to continue to be deficit in foodgrains due to increase in human and domesticated animal population.

Considerable area of land is unproductive and remain more or less fallow. The total area of this category of land is 14,718 hectares. This land could be brought under proper use by growing fruits, fuel trees and fodder. It is proposed to bring a large area of such lands into productivity during the Seventh Plan. This will not only ensure more income to farmers but also preserve such lands from erosion and degradation so prominently experienced in the Himalayan State,

The Table presented on Page 3 gives the targets of selected programmes for the terminal year of 7th Plan and anticipated achievements during 1984-85 i.e. terminal year of 6th Plan.

II.CROPS

(a) Foodgrain Production :

In foodgrain production there has been notable achievement during the Sixth plan period. The terminal year target on this is expected to be exceeded by 13,000 tonnes which is significant considering the size of the State. It is envisaged to increase foodgrain production from 93,020 tonnes in 1984-85 to 1,10,230 tonnes in 1989-90, an increase of 17,210 tonnes representing a growth of 18% over a period of five years. The estimated foodgrain requirement in 1989-90, based on population growth (human and animals), is 1,37,000 tonnes which leads to a deficit of around 27,000 tonnes. This target of foodgrain production will be realised by promoting cultivation of high yielding and improved varieties, judicious use of fertilizers and soil correctives, proper plant health cover, increase in area under double or multiple crops in lower and mid hills and by promoting mixed cropping systems.

Item	Unit	1984-85 Anticipated Achievement	1989-90 Target 7th Plan (Terminal year)	Growth over Base Level (1984-85)
1. Foodgrains	'000 Tonnes	93.02	110.23	18.28
2. Fertilizers (in terms of nutrients)	Tonnes	1,500	3,000	100.07
3. Seed Production	"	2,494	3,956	58.62
4. Area under H.Y.V. and Improved varieties	Hectares	55,600	65,800	18.35
5. Plant Protection				
(a) Technical Grade Material	Tonnes	20	34	70.00
(b) Area Coverage	Hectares	39,040	60,000	53.69
6. Production of Commercial and Horticulture Crops				
(a) Oilseeds	Tonnes	6,000	11,300	88.33
(b) Potato	"	18,200	25,000	37.36
(c) Ginger	"	8,000	12,800	60.00
(d) Cardamom	"	4,000	4,400	10.00
(e) Fruits	"	13,620	24,080	76.80
(f) Vegetables	"	16,620	29,860	79.66

(b) Seed Multiplication and Distribution :

Improved agriculture is an indispensable step towards better living standards, and this depends upon improved inputs, of which seed is the most significant. Seed is the germ of life, a beginning and an end, the fruit of yesterday's harvest and the promise of tomorrow's. Without an ample store of seeds there can be no real treasure or future for a State like Sikkim, where nearly 85 per cent of the total population depend on agriculture for their livelihood. Improved seeds, which are the fruits of research made available from the vast genetic resources in the plant kingdom by crop improvement, should reach the farmers to realise a better output. It is important, to ensure the supply of this essential input to farmers

at the right time in adequate quantities. No amount of fertilizer, weeding or careful husbandry will compensate if the seed sown produces plants which are incapable of exploiting the environment in which they have been planted.

Prior to 1975-76, there was no seed multiplication programme in Sikkim. Its seed requirements were met from outside sources. With the establishment of Government Agricultural Farms in different regions in 1975-76, seed production in the State was initiated. Till the end of the Fifth Five Year Plan, that is, 1979-80, seed production was restricted to the Government Farms only. With the advent of the Sixth Five Year Plan, seed production in farmers' fields was started in the State. For this, seed certification programmes on a small scale were initiated with the appointment of seed certification staff under the Department of Agriculture. A Seed Testing Laboratory at Marchak was established and it started functioning since 1982-83. A Seed processing unit for cereal seeds at Majitar is being commissioned and is expected to start functioning soon. In short, the Sixth Five Year Plan has very successfully laid the foundation for sound and scientific seed production system in the State. Seed production in the state has gone up considerably thereby aiding increased production of foodgrains and commercial crops in the State.

In the seventh plan, efforts will be made to give a further boost to seed production for meeting the ever increasing demand for improved seeds. Emphasis will be laid on quality seed production, in farmers' fields with strengthening of seed testing, seed certification, seed processing, seed storage and seed distribution systems in the State. The programme and *modus operandi* of the scheme will be as follows :

1. *Seed Production in the Government Farms :*

High quality seeds as breeder's seeds, foundation seeds and certified seeds of recommended and promising crop varieties will be produced in the Government Agricultural Farms for further multiplication in the farmers' fields as well as for general distribution.

2. *Seed Production in the Farmers' Fields :*

Certified or truthfully labelled seed production will be carried out in the farmers' fields for making available more seeds of suitable crop varieties within the state itself.

For this, strengthening of seed testing and seed certification organisations needs to be given importance.

3. *Seed Testing :*

The seeds produced either from the Government Farms or from the farmers' fields need to be tested in the State Seed Testing Laboratory, Marchak, prior to distribution and marketing. This would ensure the distribution of quality seeds to the farmers. Seed testing involves the judging of seed quality, that is, varietal purity, moisture content, germination percentage occurrence of weed seeds, presence of seed borne diseases etc. to know whether it is physiologically fit or not for raising new crop, selling in the market and certification. Seed Testing Laboratory will fix up the minimum standards for purity, germination and moisture content, and will play a statutory role in implementing the provisions of the seed Law.

4. *Seed Certification :*

Seed certification is a regulated process designed to secure, maintain and make available certain prescribed levels of genetic purity, physical purity, physiological quality and health in seeds including vegetatively propagating materials of superior crop plant varieties. Seed is the only medium by which varieties evolved by plant breeding programmes spending considerable skill, time, energy and money can be continuously and repeatedly made available to the public in their original form, on a large scale over a long period. Seed may also be an agent either singly or in combination with others for transfer and spread of harmful fungal, bacterial or viral pathogens, nematodes, insects and weeds over crop generations and over time and space. Further, it is of value only if it is pure and viable. If genetically, physically and physiologically good seed should be available for successful crop production an effective quality control mechanism is necessary, right from the choice of seed for raising the seed crop to the supply of seed so produced for subsequent crop production. Seed certification is specialised, man-power-intensive technical process. It begins with verification of the authenticity of seed source and continues until tagging and sealing of the seed container, The state lacks in the strength of staff engaged for seed certification, and as such, this needs to be rectified in the Seventh Plan by appointing more number of Seed Certification Inspectors, Field Assistants and a Chief Seed Certification Officer.

5. *Seed Processing :*

Seed lots produced from the fields of both Government Farms and farmers' fields are often at high moisture content and contain trash and other inert materials, weed seeds, deteriorated and damaged seeds, off-size seeds, etc. Seed processing is necessary in order to dry the seeds to a safe moisture level; remove or reduce to the extent possible the various undesirable material like weed seeds, other crop seeds, deteriorated or damaged seeds; and watch uniform size grading, seed treatment etc. to upgrade the overall seed quality. Seed processing refers to all the steps necessary for preparation of harvested seed for marketing, namely handling, drying, shelling, preconditioning, cleaning, size grading, treating, packaging, tagging and post-processing storage. In Sikkim, one unit of seed processing for cereal/bold seeds is being commissioned and will start functioning in the Seventh Plan Period.

In order to process smaller seeds like that of vegetables' rapeseed, mustard etc., there is need to establish one more unit.

6. *Seed Storage :*

Seed quality is greatly influenced by prevailing environmental conditions. Maintenance of high seed germination and vigour from harvest until planting is of the utmost importance in a seed programme. Seeds are practically worthless if, on planting, they fail to give adequate plant stands in addition to healthy and vigorous plants. Good seed storage is therefore, a basic requirement in seed production. Infrastructure for storage needs to be created at the State as well as district levels. The storability duration of the Central Seed Godown should be of three years and that of District seed godowns one year. In view of the various factors like kind/variety of seed, moisture content, initial seed quality, relative humi-

dity and temperature of storage, provenance, fluctuating environmental condition on viability, storegrain pests, fungi, bacteria, rodents etc. affecting seed viability in storage, seed storage should be dry and cool and should have proper sanitation and storage pest control facility. Further, seeds to be placed in storage should be dried to appropriate moisture level and well processed.

7. *Seed Distribution :*

In the past, seeds were distributed to farmers on seed-to-seed loan basis for promoting cultivation of improved crop varieties. In the process, a large quantum of the seeds distributed, could not be realised. Even the small quantity of realized seeds could not be used for re-distribution since they were sub-standard. As such, the State Government has revised the seed distribution policy with effect from rabi, 1983-84. Now, seeds are being distributed to the farmers at 50% subsidized rates with the exclusion of transport and handling costs. This system needs to be continued for sometime to pick up the momentum of greater use of improved seeds by the farmers.

In Sikkim, seed distribution is carried out by the Agriculture Department through its VLW Centres, Regional Sub-centres, Regional Centres and vegetable stalls in the bazar. Seed is an essential commodity, and in order to keep down seed prices, to make seeds available in time and to make seed distribution more effective it is necessary for the Department to acquire adequate number of trucks for distribution.

8. *Seed Legislation and Seed Law Enforcement :*

The basic purpose of seed legislation and seed law enforcement is to regulate the quality of seed sold to farmers. With technological advancement and the systematic application of science to agriculture, it becomes imperative to regulate the quality of seeds through seed legislation and its subsequent enforcement to ensure that buyers are not made to take risks.

In the seventh plan, it is proposed to increase seed production from 3,520 quintals in 1984-85 to 5,320 quintals in 1989-90 in Government Farms and from 21,420 quintals in 1984-85 to 34,240 quintals in 1989-90 in Farmers' Fields.

(c) *High Yielding Varieties Programme :*

In Agriculture, the most important object is to increase production per unit area. Of the various measures to increase agricultural production, the high yielding varieties (H.Y.V.) play the pivotal role in boosting up agricultural production; in abolishing poverty, famine and misery and in improving the standard of living of man. It is, therefore, highly essential to popularise the use of H.Y.V. for achieving the ultimate goal of food production.

The identification of suitable H.Y.V. and improved varieties for the State is being made from time to time through adaptive research of Agriculture Department and research findings of the I.C.A.R. Complex. The H.Y.V. and improved varieties like N.J.D. White and VL 43 (HIM 128) in maize; Gaiza 14, RASI (I.E.T. 1444), VLK-39 and DR-92 in Paddy; Sonalika in Wheat. VL-101 in Finger Millet; VLB in Barley; T-9 and Pahelidal in Black gram; Pusa Baisakhi in Green gram; Gyalab, Bragg and Shilajeet in Soyabean;

Varuna in Mustard; T-9 and M-27 in Toria; Sikkim Sarson-1 in Sarson; Kufri-Jyoti, Pimpermal and Kufri Sherpa in Potato; Nadia and Rio-di-Janeiro in Ginger; Dania and Pusa Snowball-1 in Cauliflower; Pride of India and Golden Acre in Cabbage; G-3 and Pant C-1 in Chilli; Sikkim Selection 1, Singtamay and Mantulal in Common beans; Contender and Premier in French beans; Improved Sikkim in vegetable mustard; Sikkim Selection R-1, Japanese White and Chinese Pink in Radish; Vaishali Badhu and Pusa Sawani in Bhindi; etc. have benefited the farmers considerably in the State. Considerable increase in area under H.Y.V. & improved varieties has been recorded in the State during the Sixth Five Year Plan. The area under improved and high yielding varieties increased from 22,044 hectares in 1979-80 to 55,600 hectares in 1984-85.

Under this programme, the promising strains and varieties evaluated through adaptive trials and research will be tried in the farmers' fields in the form of minikit trials and demonstrations. Large scale demonstrations will be conducted in the farmers' fields, covering larger per unit areas and on a repetitive basis.

The demonstrations will be organised with complete package including seeds, fertilizers, plant protection chemicals, agricultural tools and implements and extension means. Based on the performance of these trials and demonstrations, the best suited and accepted varieties will be realised and popularised among the farmers in order to achieve the target of increased area under H.Y.V. and improved varieties as well as to bring more area under double and multiple cropping for gearing up agricultural production of the State.

The Seed requirement will be met from the produce of the government farms as well as farmers' fields and outside procurement for the deficit seeds. The actual quantities of H.Y.V. seeds to be procured from sources out-side the State have been estimated at 20% of the total requirements on an average. However, in some cases the procurement from outside sources will be upto 75%.

The programme will also be supplemented with the related Centrally Sponsored Schemes like All India Co-ordinated Maize Improvement Project (I.C.A.R.) and Minikit-cum-community Nurseries Programmes of rice.

In the Seventh Plan, the cultivation of improved and high yielding varieties of crops will be promoted more vigorously. It is proposed to increase the area under high yielding varieties from 36,900 hectares in 1984-85 to 40,800 hectares in 1989-90 and in case of improved varieties, the area to be increased from 18,700 hectares in 1984-85 to 25,000 hectares. There is also need for replacing old varieties with new ones which will be done in a phased manner.

MANURES AND FERTILISERS

The consumption of fertilisers in the State is still at a low level in per capita terms. In 1979-80 the consumption was about 8 kg. per hectare which in terms of nutrients is expected to increase to 11.79 kg. per hectare in 1984-85. The increase is insignificant and not really proportionate to increase in area under high yielding and improved varieties. There is therefore a need to make a real break through in fertiliser consumption during the Seventh Plan. The target is to increase the total consumption from 1,500 tonnes to atleast 3,000 tonnes by the end of the plan period which will result in a per hectare

consumption of about 20 kgs. The only way to achieve this is to adopt various promotional measures like opening of more sale points, increasing the number and area under demonstration and by providing short term credit facilities to the farmers. So far the sale of fertiliser has been almost exclusively through the VLWs. The possibility of opening other outlets particularly through the cooperative net work will be considered and the Sikkim Marketing Federation will also be given the facilities of procuring and distributing fertilisers. In certain places where there is no cooperative outlet the possibility of engaging ordinary retail dealers will also be considered. Another aspect of promoting the use of fertilisers is to develop better storage facilities particularly in the VLW Centers. Although there are such facilities even today they leave much to be desired as a result of which a fairly large proportion of available fertilisers gets spoilt. Thus the approach in the 7th plan would be that fertiliser distribution would be streamlined through a combined strategy of timely procurement and distribution without any bottleneck, buffer storage and increasing the number of outlets.

An important consideration for the promotion of fertilisers is on the subsidy element. The present system of granting 100% subsidy for transportation cost and 30 to 40% subsidy on the material cost will be continued but with the understanding that the quantum of subsidy will be tapered off towards the end of the plan period.

Recently the Government of Sikkim have started a public sector undertaking called the Sikkim Organics which is expected to produce through animal waste certain types of fertilisers including bone meal which is a very valuable fertiliser for the State. Such fertilisers will be brought by the Agriculture Department directly from the unit.

In a hilly State like Sikkim, fertilisers have to play only a supplementary role because of inherent problems of transport, storage and distribution. The bio-fertilisers like rural compost, rhizobium inoculant and by-products of leather industry and slaughter house will have to be given higher priority. For farmers growing off-season vegetables, ginger, turmeric, potato, yam, tapioca and sweet potato, the need for organic manure is imperative and cannot be replaced. Similarly, rock phosphate has great relevance and significance in acidic soils of Sikkim. During Seventh Plan organic manures and rock phosphate will receive special priority. It is proposed to cover 5,000 hectares under such organic manures beginning from 1985-86 with annual growth rate of 10%

Sikkim soils have been found deficient in some of the important micro-nutrients like zinc, boron and molybdenum. The deficiency is found to be pronounced in vegetables and fruits. To overcome this problem a micro-nutrient promotion campaign will be initiated. To start with only vegetables and fruits will be brought under this campaign to cover 2,000 hectares in 1985-86 with annual growth rate of 20%.

PLAN PROTECTION :

Sikkim's environmental condition is extremely congenial for the development of diseases and pests on endemic or epidemic form causing extensive damages to crops. Further, losses of farm produce in storage have been considerable due to improper storage condition coupled with high humidity and inadequate sanitation. Sikkim produces substantial quantities of fruits and commercial crops, such as cardamom,

ginger, seed and table potato, orange, guava, banana, plum, off-season vegetables etc. and also the acreages under improved and high yielding varieties have been on the increase year after year. The total loss of crops in field and in storage due to diseases and pests is estimated at a staggering figure of more than Rs 200 lakhs, which is extremely high considering the size of the State.

Diseases and pests like rhizome rot in ginger and cardamom; blast, leaf roller and stem borer in paddy; die-back in orange, scab in apple, late blight in potato, powdery mildew in peas etc. are quite common requiring organisation of large scale plant protection campaigns. Rodents also cause extensive damage of crops both in fields and in storage. All these require proper plant protection infrastructure for timely prevention and control of diseases and pests. Hence, plant health cover will receive special priority in the Seventh Plan.

For strengthening plant protection services in a proper manner, the following programmes will be taken up :

1. To increase Plant Protection Mobile Units from existing four to nine to have one such unit per region.
2. To strengthen the State Plant Protection Laboratory and to set up diseases and pests Investigation laboratory in the districts.
3. To continue organisation of plant protection campaigns to control diseases and pests occurring in endemic or epidemic form including rodent control on a campaign basis.
4. To lay more stress will be laid on seed and soil treatment than on foliar sprays considering the rainfall pattern of the State.
5. To prevent & control orange die-back, apple scab, potato blight, powdery mildew in peas and rhizome rot in ginger and cardamom.
6. Control of store grain pests will be given special importance.
7. Pests and diseases surveillance will receive considerable importance.
8. The consumption of technical grade materials will be increased from 20 tonnes in 1984-85 to 34 tonnes in 1989-90, and area coverage under plant protection will be increased from 39,040 hectares in 1984-85 to 60,000 hectares in 1989-90.

Pesticides will be distributed on subsidised basis through VLW centres and regional centres.

DEVELOPMENT OF OTHER COMMERCIAL CROPS :

Besides large cardamom, coffee and fruits, seed potato, ginger, vegetable seeds, off season vegetables, other tuber crops like turmeric, tapioca, sweet potato etc. and other commercial crops including black pepper, mushroom, cumin and valuable herbs, hold eminent position as commercial crops.

The climatological condition of the State are highly suited for the production of these commercial crops. Hence, these crops deserve special attention for development, and the importance given for them will be an impetus in improving the economic condition of the people.

1. Seed Potato :

Seed potato production is the most important occupation of the people located around and above 2,100 meters altitude and it is the only major source of income. The areas located above and around 2,100 meters elevation present favourable environmental conditions like low temperature, good exposure, high wind velocity and high humidity for raising high quality seed potatoes. In the Sixth Plan, systematic potato seed multiplication programme was initiated with continuous multiplication of the breeder seed allotted every year by the Central Potato Research Institute in foundation seed potato farms located at Hilley and Zaluk as well as in the government farms of Lachung and Lachen in smaller scale. This has boosted up foundation seed potato production from 900 quintals in 1979-80 to over 1,500 quintals by the end of Sixth Plan. In 1982-83 the state produced record foundation seed potatoes in the government farms amounting to about 2,500 quintals. In order to increase the production level of foundation seed potatoes it is proposed to establish one more foundation seed potato farm during the Seventh Plan period.

The certified seed potato production has gone up considerably in the Sixth Plan. During 1979-80 certified potato production in the farmers' fields was initiated in the state with production of 2,100 quintals. This has now touched a mark up to 20,000 quintals, of which State Agriculture Department alone procures about 3,000 quintals for general distribution and marketing. In the Seventh Plan, efforts will be made to increase certified seed potato production from 20,000 quintals to 30,000 quintals.

2. Ginger :

Ginger is one of the most profitable cash crops in Sikkim. The development of ginger will help to change the economy of farmers because of its high commercial value. The programme of ginger rhizome multiplication in government farms as well as in farmers' fields was initiated recently with the identification of improved varieties. In the Seventh Plan it is envisaged to cover more area under improved varieties as well as to increase the overall area under ginger to boost up its production. This programme will also help in initiating agro-based industries with ginger as a base.

3. Vegetable seed Production :

Quality seed production of vegetables like radish, cauliflower, beans, peas etc. will be carried out for meeting internal seed requirements as well as for selling outside the State.

4. Vegetable development :

This programme under commercial crops, which may not make much impact for sometime, is now gaining momentum with identification of suitable varieties of cabbage, cauliflower, vegetable mustard, radish, brinjal, chilli, bhindi, peas, beans, chayote, tree tomato and so on. Besides varietal screening and trials in vegetable, crash programmes will be launched in order to promote vegetable cultivation in the state. The crash programmes are intended to provide complete package of suitable vegetable production for the selected areas. The package may include seeds, seedlings, fertilizers, plant protection chemicals and tools and equipments, water tanks and alkathene pipes, training and practice literature.

5. Other Tuber Crops :

Tuber crops like turmeric, tapioca, sweet potato and yam have great potential in Sikkim due to favourable agroclimatic conditions. So far, these crops have not received the needed attention for development and improving production in the state. In the Seventh Plan, improved varieties will be screened out and multiplied for popularising among the farmers.

6. Mushroom Development :

The initiation of mushroom production programme in the State was agreed upon in the annual plan of 1984-85 with a token provision for site selection, land acquisition and imparting training to departmental officers. In the Seventh Plan it is proposed to establish a spawn laboratory, mushroom house and processing centre with appointment of requisite staff and creation of necessary infrastructure. With the production of spawns of European mushroom (*Agaricus bisporus*), Paddy Straw mushroom (*Volvariella species*) and Dhingri mushroom (*Plueurotus species*) artificial cultivation of these mushrooms will be popularised among the farmers and growers. For this, training will be organised from time to time and growers associations will be formed.

7. Minor Commercial Crops :

Sikkim which is exceedingly rich in aromatic and medicinal herbs needs to preserve and domesticate some of these plants, depending upon value and marketability. Effort will be made to domesticate and to work out suitable package of practice for aromatic and medicinal plants in the state during the Seventh Five Year Plan.

HORTICULTURE :

The agro-climatic condition of the State is extremely conducive for growing fruits like orange, guava, papaya, plum, peach, pear etc. There is also scope for introduction of non-traditional fruits, such as, avocado, walnut, almond, cherry, passion-fruit, chestnut. etc. Hence, fruit cultivation has immense potentiality in the State, not only for economic reasons but also from the point of view of land use. The importance of fruits for preserving, protecting and restoring the already degraded hill slopes cannot be over emphasised. The lands, not suitable for seasonal crops and remaining barren and unproductive at present could with great advantage be converted into orchards to enable farmers to generate more income and also to prevent further degradation. In the Seventh Plan fruit development will receive top priority over other schemes taking into account the significance of fruits both from economic and ecological reasons. However, this lofty objective will not come to bear fruit if production is not linked with processing and marketing in an integrated manner.

In the Sixth Plan, satisfactory progress was obtained in fruit development, particularly in local production of planting materials, increase in area of fruits, rejuvenation of deteriorated orchards, new plantation demonstrations, etc. Nevertheless, the progress so far made is not substantial when one considers the scope for further development. In the Sixth Plan seven small size progeny orchards were established, 500 hectares of orange and apple orchards were rejuvenated, around 15 lakhs planting materials of different

fruits were distributed and self-sufficiency in the production of planting materials of orange, guava, lime-lemon, tree tomato, papaya etc. was achieved and ten private nurseries were established. The area under fruits increased from 3,760 hectares in 1979-80 to 8,200 hectares in 1984-85 representing a growth of 118% over a period of five years

During the Seventh Plan efforts will be made to promote the cultivation of fruits by vigorously implementing the programmes mentioned above. The important programmes to be included in Seventh Plan are indicated below :

1. Strengthening and improvement of the physical facilities of existing progeny orchards and establishment of five more progeny orchards to become self-reliant in planting materials of all fruits. This involves production of 20 lakhs planting materials in 7th Plan period.
2. To increase area and production of fruits from 8,200 hectares and 13,620 tonnes in 1984-85 to 13,300 hectares and 24,080 tonnes in 1989-90, which represent percentage increase in area and production by 62% and 77% respectively over a period of five years.
3. Citrus die-back and apple scab continue to cause damages to orchards, although significant improvement has been made in their control by adapting plant protection and management schedules evolved by the Regional ICAR Research Complex. This programme of rejuvenation of orchards will be continued more vigorously covering 500 hectares.
4. Introduction and promotion of cultivation of non-traditional fruits, such as, avocado, walnut, cherry, passion-fruit, chestnut etc. by organising new plantation demonstrations in farmers' fields. This involves providing assistance in the form of inputs and partial cost of establishment from planting to entire gestation period on demonstration basis. This programme will cover 500 hectares during the 7th Plan period.
5. Floriculture has great scope in Sikkim, but so far no programme exists for its promotion. There is immense potential for the propagation of planting materials, development of cut-flower industry not only to cater to the needs of internal markets but also for export purposes. The activities under floriculture include development of progeny farm for screening of flower species and varieties, propagation of planting materials of selected varieties and development of private nurseries. Floriculture will be a new area of development in the Seventh Plan.
6. Adaptive research on tissue culture, post-harvest technology etc. will also form important programmes in the Seventh Plan.
7. The existing Fruit Preservation Factory will be given support to diversify its activities for making new products out of guava, plum, peach, pear, vegetables, ginger, cardamom, etc. This will help the factory to increase its working days and earn more profit.
8. With the establishment of good number of branches of Nationalised Banks in the State, the prospect of fruit development has widened. For promoting horticulture development in the State, it is desirable to subsidise bank loans on fruit cultivation in order to encourage farmers' to concentrate more on such crops. It is, therefore, proposed to subsidise such loans to the extent of 25%.

PLANTATION CROPS :

Large cardamom is the foremost cash crop of Sikkim with area and production of 21,000 hectares and 3,800 tonnes respectively. It has great significance as it is a crop grown primarily by tribals, fits in very well under agro-forestry system of land use and gives returns to growers over a long period. This crop, despite being the most important, has been more or less neglected as far as its improvement in terms of varieties, agronomic practices and post-harvest technology are concerned. The greatest problem associated with this crop is the deterioration of old plantations, most primitive curing method impairing the quality of dried fruits and the practice of establishment of new plantations through suckers. The departmental activities have so far been confined to distribution of planting materials and control of diseases and pests, and also construction of new modern curing houses. The work of Cardamom Board also includes distribution of planting materials and establishment of curing houses.

In case of coffee cultivation, no programme has been undertaken to extend its cultivation in private holdings. The experimental plantation of coffee in 20 hectares of land in Government Farm has proved very successful and it is desirable to see its performance for few more years before extension of area in private lands.

The possibility of growing small cardamom at lower altitudes has been tried and the results have been very encouraging. It requires further observations and investigation to come to a definite conclusion.

The programmes to be undertaken under Plantation Crops during Seventh Plan are as follows :

1. Establishment of nurseries, both Government and private, for producing quality seedlings of large cardamom. The total requirement of seedlings annually to cover 250 hectares under new plantation and rejuvenation would be 12.5 lakhs.
2. To increase the area under large cardamom from 21,000 hectares in 1984-85 to 22,000 hectares in 1989-90, for which subsidies are to be provided, meeting the cost of planting materials as well as establishment cost.
3. To bring 500 hectares under cardamom rejuvenation programme which involves distribution of planting materials at subsidised rate.
4. To subsidise the cost of construction of modern curing houses both for community and individual farmers, It is proposed to subsidise construction of 100 curing houses.
5. Extension of coffee area in Government land to cover 100 hectares. Experimental plantation of coffee to be taken up in the lands of few selected farmers to cover about 50 hectares.
6. The feasibility of growing small cardamom to be assessed in more Government Farms representing varied agro-climatic situations.

AGRICULTURE ENGINEERING :

Agriculture Engineering is one of the mainsprings of agricultural development and growth. Articulation of improved varieties of seeds, water, plant nutrition and plant protection, power and implements, and

soil and water management to achieve higher production and productivity, called modern agricultural technology, can only come from active and purposeful utilisation of agriculture engineering techniques. Besides increasing production and productivity, the modern agricultural technology makes it possible for intensive cultivation of multiple crops and raising of animals by wisely utilising physical resources such as land, water, climate and manpower. Key to more employment is more production, and key to more production, is adoption of modern agricultural technology.

In the Sixth Plan period, a good beginning has been made in agriculture engineering in the State with the establishment of an Agriculture Engineering Workshop and four Agro-service Centres. The achievement attained in the matter of production of agricultural implements in the Sixth Five Year Plan includes distribution of number of hand tools, horticultural tools, implements and plant protection equipments. The programmes to be emphasized during the Seventh Plan will be as follows :

- (a) Agricultural Engineering Workshop will be modernised to increase its efficiency of production. In this workshop, testing of new tools and implements will be carried out. Some of the recommended tools and implements for Sikkim conditions after testing will be fabricated and manufactured for distribution. The workshop will also be entrusted with repair works.
- (b) Agriculture tools and implements like seed bins, threshers, horticultural tools, plant protection equipments, seed drills, etc. that cannot be manufactured in the workshop in sufficient quantities, will be procured for distribution among the farmers.
- (c) Demonstration of recommended tools and implements will be conducted with free installation at the farmer's level as a means to popularise the use of improved tools and implements.
- (d) The establishment of agro-service centres will constitute an important programme. Each agro-service centre will be equipped with power operated machineries and equipments for processing, threshing, shelling, oil extraction, grinding and so on. Agro-service, run on custom service basis, not only solves the problems of post-harvesting processes of the farmers, but also helps in increasing agricultural production of the surrounding areas. In the Seventh Plan, it is proposed to establish ten such agro-service centres in the State.
- (e) Agriculture engineering will also look after the construction and maintenance of residential buildings and farm structures of Agriculture and Animal Husbandry Departments in the State.
- (f) Minor works and micro-irrigation facilities in the Government Agricultural farms will be executed by the Agriculture Engineering Cell. The volume of work involved in Agriculture Engineering necessitates the strengthening of this cell by the creation and appointment of more staff.

AGRICULTURAL RESEARCH, EDUCATION AND ECONOMICS & STATISTIC :

(a) Agriculture Research :

The main research activity in agriculture, as far as the State is concerned, has been undertaken by the Regional ICAR Research Complex. To supplement and support the research work of the ICAR, the State also has been taking up adaptive research on various problems related to crops, soils, climates, management

etc. in its Regional Farms located in different agro-climatic zones. The nine Regional Centres seven Regional Sub-Centres and Progeny Orchards of this Department have been undertaking adaptive research as the most important activity. The outcome of such adaptive trials has been exceptionally fruitful with the result that the State has been able to identify specific varieties of different crops for various regions with appropriate package of production practices. Suitable land use and cropping patterns for different agro-climatic situations have been evolved and farmers are encouraged to adopt the same in their farms.

During the Seventh Plan considerable endeavour will be made to further strengthen adaptive research activity as without such adaptive research no progress can be made. The adaptive research will be carried out in close association and coordination with the ICAR Research Complex. The new areas of adaptive research requiring special priority include large cardamom and dry land agriculture. Sikkim has the largest area under large cardamom with 23,000 hectares and production of 4,000 tonnes valued at Rs. 12.00 crores at current price level, but so far no research work of any kind has been taken up to improve this crop. This is unfortunate and the situation demands immediate attention. Another important area of research is on dry land agriculture as the farming will continue to depend on rainfall which happens to be erratic, unpredictable and unevenly distributed. Hardly 5% of the total cultivated area is under assured irrigation. Hence, the research on dry land agriculture deserves special consideration. Research Centres with adequate physical and manpower infrastructure will be established to work on cardamom and dry land research programmes.

Other adaptive research work to be included in the Seventh Plan involves identification of legume crops for acidic soils, off-season production of vegetables, vegetable seed production, introduction of non-traditional crops etc. Specific research projects on floriculture and medicinal plants including domestication of wild edible plant species will also be given due importance. For this two separate Centres will be established in suitable locations. Floriculture, medicinal plants and edible wild species have unlimited scope in Sikkim. Ultimately Sikkim should specialise on such plant species that would aid the development of agro-based industries.

b. Agriculture Education :

Significant progress has been made in the development of a cadre of technically qualified personnel so vital for the proper and effective implementation of Plan programmes. However, the State continues to lag behind in developing technical proficiency amongst the field level functionaries such as Agriculture Inspectors, VLWs, Plant Protection Assistants etc. including Fieldman and Malis. During Seventh Plan all efforts will be made to train such field level functionaries for raising their technical competence through well planned training programmes. The composite training Institute already set up in the State will be geared up for this purpose. Also, extension workers will be sent for short duration course outside the State on different subject matters. Further, officers will be sent for short courses, diploma courses and post-graduate studies outside the State for specialised courses as in-service nominees.

The primary objective of Agriculture Education is aimed at professionalisation of the extension staff and others with a view to make them more competent and effective in the discharge of their responsibilities for rural development. Some of the important activities proposed to be included under Agriculture Education during Seventh Plan are as noted below :

- (a) In-service training of officers with specialisation in various subject matters including post-graduate studies.
- (b) In-service training of extension officials and staffs in short courses, diploma courses, graduate courses to improve their technical proficiency and competence.
- (c) Running of the Composite Training Centres set up for giving gram sevaks and other training programmes for the benefit of field level functionaries.
- (d) To set up libraries at State and District Headquarters for the benefit of officers and extension staff of the department.
- (e) Organisation of workshops, seminar symposiums etc. at State and National levels on various topics relevant to the State's problems on crops, soils, water management, marketing, processing etc.

(c) Agriculture Economics & Statistics :

For proper planning and execution of agriculture development programmes, the importance of agriculture statistics cannot be overemphasised. Sikkim continues to suffer from lack of adequate information on basic statistics in agriculture, so vital for making best use of inputs resources for raising productivity.

With the exception of agriculture census no progress in recording could be made during the Sixth Plan period. This is primarily due to absence of technically trained personnel to handle any important programme like that of Agriculture Economic & Statistics. Hence, it is imperative to give due importance to this during the Seventh Plan. A well organised cell manned by experts will be set up in the Department to handle the activities on agriculture economics & statistics.

Some of the important activities which are proposed are as follows :

- (a) Continuation of agriculture census work including input survey to update the data on operational holdings, land utilisation, area under principal crops, irrigation, land holding system and inputs utilisation patterns. Such information is of great utility for formulating policies and programmes for agriculture development at regional levels.
- (b) Estimation of area and production of principal crops and conduct of crop cutting to ensure timely reporting of such information of area and production. This will be done in close coordination with the State Bureau of Economics & Statistics.
- (c) Agro-economic research on cash crops like ginger, potato, off-season vegetables and vegetable seed production to find out their economics. Also, study of economics of different crop combinations under double or multiple cropping system.
- (d) Survey and study of land use and cropping patterns to evolve the most ideal land use-cropping system for different reasons. This has relevance considering the need for protecting, preserving and restoring the ecology of the State.

- e. Study of crop weather relationship to equip the department to handle situations created by natural calamities, such as drought, hailstorms and excessive rains.

OTHER PROGRAMMES :

(a) Prime Minister's New 20 Point Programme :

During the Sixth Plan quite satisfactory progress has been made in the 20 Point Programme, such as, development of pulses, oilseeds, dry land agriculture and development of tribals and schedule castes. However, there is considerable scope for implementing larger programmes in pulses, oilseeds, dry land agriculture and tribals and schedule castes development. In the Seventh Plan concerted effort will be made to promote the 20 Point programme.

In pulses, it is envisaged to increase the area from 9,000 hectares in 1984-85 to 12,000 in 1989-90 and production from 8,880 tonnes in 1984-85 to 13,020 tonnes in 1989-90, which represents increase in area and production by 34.4% and 46.6% respectively. In case of oilseeds, the area and production will be increased from 10,500 hectares in 1984-85 to 13,000 hectares in 1989-90 and 8,650 tonnes in 1984-85, to 11,300 tonnes in 1989-90, the increase in area and production in terms of percentage being 23.8% and 30.6% respectively.

Despite being in the high rainfall zone, dryland agriculture has great significance and relevance to Sikkim, as rainfed farming continues to depend on timely rains, fully irrigated area is still at a low level. In the Seventh Plan, dry farming will receive special priority for increasing agricultural production. The prevalent rainfall pattern has been unpredictable, unevenly distributed and occurrence of mild or severe drought has become a regular feature. The State, as such, faces no problem in growing Kharif crops, but the problem arises with pre-kharif and Rabi crops when typical semiarid climate prevails.

It is proposed to gear up dry land farming programmes which involve adoption of dry land agriculture techniques like water conservation, growing short duration and drought resistant crops, planting of quick growing fruits, etc. Some of the important programmes to be included for implementation during Seventh Plan are as under :

- (a) Integrated area development in selected four micro-watersheds covering 1,000 hectares per micro-watershed.
- (b) Crop production programme outside micro-watersheds covering 15,000 hectares every year.
- (c) Development of quick growing fruits and fodder in dry land areas to cover 500 hectares every year.
- (d) Land development and water conservation to cover 500 hectares per year.

Centrally Sponsored Schemes :

The Centrally Sponsored Schemes in operation in the State include All India Coordinated Maize Improvement Project (ICAR), (2) Rice Minikit-cum-Community Nurseries Programme, (3) Development of Pulses (4) Intensive oilseeds Development programme, (5) Small and Marginal Farmers programme for increasing crop production, (6) Minikit Programme of Maize and (7) Training Programmes. The first two schemes have been in operation in Sikkim for a long time whereas the others have been introduced from 1983-84. These schemes have helped considerably in increasing agricultural production. The targets envisaged under these schemes in the Seventh Plan are as follows.

P A R T I C U L A R S	7th Plan Target (Cumulative)
1. All India Coordinated Maize Improvement Project (No. of trials)	40
2. Rice Minikit-cum-Community Nurseries Programme :	
(a) No. of rice minikits	4,000
(b) Area of rice community nurseries (Ha.)	1,390
3. Development of Pulses Programmes coverage (Ha.)	20,000
4. Intensive Oilseeds Development Programmes coverage (Ha.)	28,000
5. Special Assistance to Small & Marginal Farmers :	
(a) Distribution of minikit of pulses and oilseeds (no.)	6,000
(b) Land Development (Ha.)	640
(c) Fruits, Fodders and Fuel Plantation (Ha.)	2,000
(d) Development of Irrigation (Ha.)	1,000
6. Minikit programme of maize (nos.)	6,100
7. Training programmes (Nos.)	19

TRAINING AND EXTENSION :

(a) Agricultural Farms (Regional Centres) :

The establishment of nine Regional Centres, seven Regional Sub-Centres and 105 VLW Centres has been the most notable achievement during the Sixth Plan period. These Centres have been doing significant and commendable work on adaptive trials, seed multiplication and extension service with the result that crop varieties for different regions have been released, their seed multiplications taken up and large scale distribution of quality seed undertaken. Twenty five VLW Centres have been converted into VLW-cum-Demonstration Centres which besides conducting demonstrations on various crops also take up raising of seeds and seedlings of fruits and vegetables for distribution to the cultivators in Sikkim. Unlike in other States, the VLWs are made responsible for the distribution of inputs directly in addition to their normal and routine work of extension service.

The Regional Centres have become focal points for agriculture development, although these Centres including VLW Centres continue to suffer from improper and inadequate physical infrastructure like residential and non-residential buildings, fencing, footpaths, irrigation facilities etc. During the Seventh Plan, the physical facilities of these Centres will be strengthened and improved upon to make them more effective for taking up work on adaptive trials, seed multiplication and extension.

During the Seventh Plan, it is proposed to increase Regional Centres from existing nine to twelve, Regional Sub-Centres from seven to 15 and VLW Centres from 105 to 153. Also, it is envisaged to gradually convert VLW Centres into VLW-cum-Demonstration Centres. A minimum of 50 such Centres will be organised by the end of the Plan.

For increasing production in agriculture, modern farming practices need to be popularised amongst the cultivators at a faster pace, for which there is necessity for reorganisation of the agricultural extension set up in the State. The proven and well established system of "Training & Visit" method of extension will be introduced in Sikkim and during the course of five years all VLW Centres will be covered under this system of extension.

(b) Extension & Farmers' Training :

It is well recognised fact that productivity from lands ultimately depends on the adoption of modern farming technology by the cultivators, most of them being small, marginal and tenant farmers. Hence, the process of agriculture development revolves largely around extension and farmers' training. It is, therefore, of paramount importance to disseminate scientific farming techniques amongst cultivators at a faster pace to keep up with recent advances in science and technology. In this respect training and farm information service have to play a pivotal role in providing proper education to farmers and farm women.

The two Farmers' Training Centres in operation in the State have been imparting training in agriculture covering varied subject matters to farmers and farm women. These Training Centres have become very useful and the demands and needs for more such Training Centres are being felt. The distribution of booklets, pamphlets, crop calendars etc. including organisation of workshops, seminars, crop competitions, exhibitions etc. have become a regular feature which have greatly helped in educating the farmers. However, in the sphere of extension no significant progress could be achieved primarily due to absence of training facility. This deficiency will be overcome during the Seventh Plan.

Some of the important activities to be included in the Seventh Plan under Extension & Farmers' Training are as follows :

- (a) Establishment of one Composite Training Institute for giving training to gram sevaks, agriculture inspectors, fieldman and malis. This Institute to act primarily as Gram Sevak Training Centre and also to provide training to other field level functionaries including farmers.
- (b) Establishment of one more Farmers' Training Centre to cater to the training needs of farmers of East and North district. More than 90% of the farmers in North district are tribals and they deserve such training facility.
- (c) Preparation of slides and documentary films on various subject matters to improve upon] teaching methodology and establishment of two audio visual lab units for the purpose.
- (d) Organisation of crop demonstration, crop competitions, field days, exhibitions, workshops and tours outside the State will be given more importance.
- (e) Initiate a programme of offering prizes, rewards and incentives to outstanding field workers for encouragement and creating a feeling of competition amongst themselves. This will be made a regular feature in the Seventh Plan.
- (f) Publication of booklets, pamphlets, krishi samachars, crop calendars etc. for the benefit of rural people. Such materials will be brought out in local languages and distributed to farmers free of cost.
- (g) Strengthening of the Agricultural Information unit and setting up of 4 mobile Agriculture Information units.

AGRICULTURAL MARKETING & QUALITY CONTROL :

Sikkim, although very small in size, produces important cash and commercial crops, such as, large cardamom, ginger, potato both for seed and table purposes, vegetables, guava, banana, plum etc. the acreages under which have increased considerably and will continue to increase during Seventh Plan. The total value of these farm produce marketed outside the State is around Rs. 20.00 crores at current price level. The production of such crops is bound to increase significantly during Seventh Plan if marketing is properly organised and to avoid distress sales. Hence, marketing, quality control and market intelligence have to contribute substantially to ensure remunerative price to the growers. This is more so in a hilly State like Sikkim with consuming centres located at great distances from producing areas coupled with very difficult terrain, very high cost of production and poor road network; the proper linkage between production and marketing is the key to prosperity in agriculture.

With the creation of the Supply and Marketing Federation in the State, the interest of the growers is likely to be protected by organising marketing on a firm footing. The Department of Agriculture will play only a supporting and promotional role in marketing, besides involving directly in marketing of vegetables and non-traditional fruits.

The important programmes under Agriculture Marketing and Quality control envisaged to be implemented during Seventh Plan are given below :

- (1) Provide incentives in the form of subsidies on packing materials, packing, transport and price support.
- (2) Establishment of collecting, grading and assembling centres for most important commercial crops like cardamom, ginger, potato and orange. For each commodity minimum of one such centre is to be established.
- (3) To be involved directly in the marketing of offseason vegetables and non-traditional fruits to encourage farmers for increase acreages under such crops.
- (4) Provide financial assistance to the Supply and Marketing Federation to promote setting up of agro-based industries like ginger drying, pickle production, oil extraction from ginger and cardamom, curry powder production etc.
- (5) Enactment of marketing legislation to streamline marketing of farm produce.
- (6) More concerted work on market intelligence to provide regular flow of feedback information on prices, arrivals, weather and crop production prospect, outgoing quantities and related matters on important cash and commercial crops.

DISTRIBUTION POLICY OF AGRICULTUREL INPUTS :

In Sikkim, unlike in other States, all the agricultural inputs like seeds, fertilizers, pesticides planting materials, soil correctives, agriculture implements etc. have been procured and distributed directly by the

Department of Agriculture through its network of VLW centres. The distribution points have increased from 65 in 1979-80 to 105 in 1984-85 and during Seventh plan the same will be increased to 188. This system of distribution of agricultural inputs has proved to be very efficient and effective, and will be continued during Seventh plan.

The agricultural inputs are distributed to the cultivators at subsidised rates, the subsidies being 40% to 100% on material and 100% on transport upto VLW centres. In a hilly State like Sikkim, the arrangement for transport and distribution of agriculture inputs are difficult tasks requiring an effective management system.

The existing subsidies for various inputs need to be maintained and continued in consideration of the backwardness of the State, higher cost of production, transport problems and poor economy of the rural people. The tribal and scheduled caste farmers, which comprise 28% of the total population of the State, require to be given much higher subsidies than others, as they are very backward, poor and still practising traditional farming. In case of agriculture implements and storage bins, there is need for increasing subsidies. The subsidies on various items will be gradually tapered off in a phased manner.

The existing subsidies and proposed subsidies during Seventh Plan on various items are as follows :

Item	Existing Material	Subsidy Transport	Proposed Subsidy Transport	7th Plan Materials Schedule Caste and Tribes	others
1	2	3	4	5	6
1. Seed	50%	100%	100%	60%	50%
2. Planting Materials	50	100	100	60	50
3. Fertilizer	40	100	100	50	40
4. Pesticides					
a. General Programme	50	100	100	60	50
b. Campaigns	100	100	100	100	100
4. Dolomite, rock and micro-nutrients		on demonstration basis	on demonstration basis.		
6. Implements, storage bins, etc.	50	100	100	75	50

It is also proposed to use 20% of all agriculture inputs for demonstration purpose in order to popularise the same amongst small and marginal farmers who are still not used to modern farming practices.

STORAGE AND WAREHOUSING :

In the Seventh Plan it is proposed to increase the Regional Centres from 9 to 12, Regional sub-centres from 7 to 15 and VLW Centres from 105 to 153. Also, the number of progeny orchards, seed potato farm, VLW Centre-cum-Demonstration Units etc. will be increased significantly. Further, the volume of seed, fertilizer, dolomite, pesticides, micro-nutrients, agriculture implements etc. to be distributed to the farmers will increase manifold in the Plan. All these require proper storage facilities and this is more so in a State having inherent problems of poor road communication, inclement weather for long periods and frequent landslides leading to disruption of road communications. This makes it necessary to stock the material well in time to ensure timely distribution of inputs.

In the Sixth Plan the storage capacity was increased from 2,000 tonnes to 8,000 tonnes which is far less than the present requirement. In the Seventh Plan the total estimated storage requirement would be around 18,000 tonnes which involves creation of additional capacity of 10,000 tonnes. It is, therefore, proposed to construct godowns for varied purposes to create additional storage capacity of 10,000 tonnes. There is also need for having one small size cold storage for storing seed potato, ginger, vegetables, fruits etc. under the control of the Department of Agriculture for storing the same for seed and marketing purposes. It is envisaged to construct one such cold storage with 2,000 tonnes capacity.

A programme of distribution of metallic bins to farmers will also be initiated in order to popularise them amongst farmers with a view to replacing traditional storage with functional ones. The storage bins will be distributed to farmers at heavily subsidised rate.

FINANCIAL DIMENSION

In order to achieve the objectives spelt out an outlay of Rs. 21 Crores proposed for the 7th plan, details of which are in Statment GN.

STATEMENT GN 2

Agriculture

Rs. in lakhs

Sl. No.	Name of Scheme/Projects	Sixth Five Year Plan 1980-85 Agreed outlay	1980-83 Actual expenditure	1983-84 Actual expenditure	1984-85		Seventh Plan 1985-90		Annual Plan 1985-86	
					Approved outlay	of which capital content	Proposed outlay	of which capital content	Proposed outlay	of which capital content
1.	Direction & Administration	20.00	9.47	5.58	6.00	6.00	13.75	—	2.00	—
2.	Multiplication and Distribution of seeds	60.00	45.49	22.47	30.00	30.00	220.00	34.00	34.00	7.00
3.	Agricultural Farms	120.00	115.64	41.33	36.00	36.00	250.00	90.00	38.00	18.00
4.	Plant Protection	70.00	44.77	16.28	17.00	17.00	150.00	11.00	20.00	2.00
5.	Dry Land Development	4.00	—	—	4.00	4.00	65.00	—	8.00	—
6.	Commercial Crops	60.00	28.50	11.03	15.00	15.00	150.00	30.00	20.00	7.00
7.	Extension and Farmers Training	50.00	31.40	11.46	14.50	14.50	70.00	—	10.00	—
8.	Agriculture Research	30.00	14.01	6.11	6.00	6.00	70.00	10.00	10.00	2.00
9.	Agriculture Education	14.00	5.00	0.78	3.00	3.00	30.00	—	4.00	—
10.	Horticulture	120.00	82.23	31.73	24.50	24.50	250.00	34.00	38.00	5.00
11.	Manure and Fertilizers	160.00	95.26	46.27	50.00	50.00	350.00	—	58.00	—
12.	Agriculture Economics and Statistics	10.00	3.31	0.79	2.00	2.00	15.00	—	2.00	—
13.	High Yielding Varieties	79.00	31.83	14.36	20.00	20.00	125.00	4.00	22.00	1.50
14.	Agriculture Engineering	50.00	19.21	8.15	7.00	7.00	75.00	20.00	11.00	4.50
15.	Plantation Crops	70.00	14.01	7.28	7.00	7.00	60.00	10.00	9.00	—
16.	Agriculture Marketing and quality Control	40.00	22.47	7.50	9.00	9.00	60.00	20.00	9.00	2.00
17.	Storage and Warehousing	15.00	3.90	5.17	5.00	5.00	70.00	70.00	13.00	13.00
18.	CENTRALLY/ SPONSORED SCHEMES									
(i)	All India Coordinated Maize improvement Project (ICAR)	—	0.52	0.19	0.20	0.20	1.25	—	0.20	—
(ii)	Development of Pulses	—	—	0.70	2.00	2.00	15.00	—	3.00	—
(iii)	National Oil seeds Development Programme	—	—	1.00	4.80	4.80	—	—	—	—
(iv)	Special assistance to Small and Marginal Farmers	—	—	—	10.00	10.00	50.00	—	10.00	—
(v)	National grid of Rural godowns	—	—	—	—	—	10.00	10.00	38.00	3.80
TOTAL :		972.00	567.02	238.18	273.00	273.00	2100.00	343.00	325.00	65.80

STATEMENT GN-3

Draft Seventh Five Year Plan (1985-90) And Annual Plan 1985-86
Physical Targets And Achievements.

Sl. No.	Item	Code No.	Unit	Sixth Five Year Plan 1980-85 target	1980-83 Achievement	1983-84 Achievement	1984-85 Target	Anticipated Achievement	Seventh Plan (1985-90) (Terminal Year)	1985-86 Target Proposed
I. Crop Production										
A. FOODGRAINS :										
1.	Rice	011	'000 Tonnes	14.00	35.25	13.62	15.00	15.60	17.60	16.38
2.	Wheat & Barley	012	(Cumulative)	16.00	42.00	13.25	19.00	16.51	19.41	17.06
3.	Maize	015	"	36.00	92.45	37.95	40.00	45.60	52.00	48.13
4.	Other cereals (Millets and Buckwheat)	016	"	8.00	17.61	5.95	10.00	6.08	7.60	6.27
5.	Pulses	017	"	6.00	13.59	7.05	9.00	9.23	13.62	9.87
Total Foodgrains				80.00	200.90	77.82	93.00	93.02	110.23	97.71
B. COMMERCIAL CROPS :										
a. Oilseeds :										
1.	Rape & Mustard	027	"	3.60	6.40	3.84	5.00	4.70	6.50	4.86
2.	Soybean	029	"	3.97	4.11	3.50	5.00	5.00	6.50	5.25
b. Total Oilseeds				7.57	10.51	7.34	10.00	9.70	13.00	10.11
b. Potato				18.15	22.34	16.97	18.15	18.20	25.00	19.50
c. Ginger				6.60	12.11	8.64	8.00	8.70	12.80	9.21
d. Cardamom				4.50	10.35	4.00	4.00	3.80	4.40	3.85
e. Other tuber crops (Turmeric Tapioca, sweet potatoes & yams)				'000 Tonnes	-	-	-	0.39	2.47	0.59
f. Minor Commercial crops (Black pepper, tej patta small cardamom, aromatic & medicinal plants etc.)				"	-	-	-	0.02	0.08	0.02
g. Vegetables				12.80	32.00	14.00	16.00	16.62	29.86	18.52

1	2	3	4	5	6	7	8	9	10	11
C. FRUITS :										
a. Orange			'000 Tonnes	10.75	23.32	8.30	9.50	9.50	17.00	10.00
b. Banana			"	1.00	2.40	1.00	1.20	1.20	1.95	1.28
c. Guava			"	0.40	0.60	0.30	0.80	0.60	1.00	0.65
d. Apple		031	"	0.43	0.90	0.20	0.35	0.45	0.60	0.45
e. Plum		-	"	0.50	0.85	0.40	0.50	0.50	1.00	0.55
f. Pears			"	0.50	0.83	0.40	0.50	0.50	0.88	0.54
g. Peach			"	0.10	0.24	0.08	0.10	0.10	0.25	0.11
h. Lime & Lemon			"	0.70	0.16	0.06	0.15	0.12	0.35	0.16
i. Others		036	"	0.90	1.16	0.50	0.65	0.65	1.05	0.71
II CROP AREAS										
1. Cereals	-		'000Ha.	65.96	161.03	66.90	72.40	72.40	78.50	73.50
2. Pulses	-		"	7.80	17.66	8.50	9.00	9.00	12.10	9.42
3. Oilseeds	-		"	10.50	20.54	10.40	10.50	10.50	13.00	10.70
4. Plantation crops	+		"	15.00	42.12	20.02	21.02	21.02	22.10	21.23
5. Tuber crops	-		"	4.20	9.54	5.98	6.00	6.00	8.55	6.38
6. Vegetables	-		"	3.00	6.90	2.80	3.00	3.07	5.30	3.40
7. Fruits	-		"	8.00	15.12	7.20	8.00	8.20	13.30	8.98
8. Net Cropped area	-		"	82.00	219.44	76.00	80.00	86.70	102.80	93.07
9. Gross cropped area	-		"	118.89	303.03	113.60	118.89	120.10	153.00	133.65
10. Foodgrains area	-		"							
a. KHARIF :										
i) Total area	-		"	57.80	135.81	58.94	62.50	62.50	64.80	63.02
ii) Irrigated Area	-		"	-	-	-	-	-	-	-
b. RABI :										
i) Total area	-		"	15.96	42.88	16.46	18.90	18.90	25.80	19.90
ii) Irrigated Area	-		"	-	-	-	-	-	-	-
Total (10)	-		"	73.76	178.69	75.40	81.40	81.40	90.60	82.92

1	2	3	4	5	6	7	8	9	10	11
III. High Yielding Varieties & Improved Varieties										
A. AREA:										
a. H. Y. V. —										
Maize	—	'000Ha	18.00	51.21	18.00	18.00	18.00	2.000	18.2	18.2
Paddy	—	"	10.00	22.81	9.00	10.00	10.00	11.00	10.20	10.20
Wheat	—	"	10.00	22.82	9.00	10.00	9.00	11.00	10.00	10.00
Total (A-a)	—	"	38.00	102.84	36.00	38.00	37.00	42.00	38.40	38.40
b. Improved varieties:										
Ragi	—	"	1.00	2.20	0.90	1.00	1.00	1.30	1.05	1.05
Barley	—	"	0.10	0.02	0.03	0.10	0.10	0.80	0.15	0.15
Pulses	—	"	5.00	5.75	4.00	5.00	5.00	6.10	5.21	5.21
Soybean	—	"	3.00	3.49	2.40	3.00	3.00	3.50	3.10	3.10
Rape & Mustard	—	"	5.50	11.60	5.60	5.50	5.50	6.00	5.60	5.60
Potato	—	"	2.40	1.80	1.80	2.40	2.40	4.00	2.70	2.70
Ginger	—	"	0.80	0.05	0.70	0.80	0.80	1.10	0.85	0.85
Other tuber crops	—	"	0.05	—	0.01	0.05	0.05	0.20	0.07	0.07
Vegetables	—	"	0.03	1.80	0.80	0.85	0.85	1.90	1.00	1.00
Total (A-b)	—	"	18.70	26.71	16.27	18.70	18.70	24.90	19.73	19.73
B. SEED DISTRIBUTION										
a. High yielding varieties										
Maize	—	Tonnes	70	148	65	67	67	114	80	80
Paddy	—	"	60	87	40	55	55	129	91	91
Wheat	—	"	250	430	200	240	230	255	246	246
Total (B-a)	—	"	380	665	305	362	352	498	417	417

1	2	3	4	5	6	7	8	9	10	11
b. Improved Varieties										
a. Ragi	-	"		3	4	2	3	3	15	11
b. Barley	-	"		9	12	6	9	9	30	13
c. Buckwheat	-	"		-	-	-	-	-	3	-
d. Pulses	-	"		85	90	70	85	85	200	85
e. Soyabean	-	"		30	54	25	30	30	94	45
f. Rape & Mustard	-	"		29	32	25	29	29	35	32
g. Potato	-	"		466	580	403	466	466	710	499
h. Ginger	-	"		120	140	80	120	120	220	159
i. Other tubercrops	-	"		16	-	5	15	15	57	20
j. Vegetables	-	"		17	37	15	17	17	46	20
	-	"		774	949	636	774	774	1,410	866

IV PRODUCTION OF SEEDS & PLANTING MATERIALS

A. GOVERNMENT FARM PRODUCTION-

1. Cereals	—	Tonnes	118	268	100	120	120	137	124
2. Pulses	—	"	10	6	7	12	10	18	12
3. Oilseeds	—	"	12	26	11	15	15	22	15
4. Potato	—	"	150	437	164	150	150	200	160
5. Ginger	—	"	40	26	18	40	40	100	50
6. Other tuber crops	—	"	—	8	8	8	10	42	12
7. Vegetables seeds	—	"	4	8	4	4	4	10	5
8. Cardamom	—	'000 nos	—	—	—	—	—	400	200
9. Fruit Plants	—	'000 nos	300	369	280	350	320	475	355
10. Others	—	'000 nos	—	—	—	—	30	120	80

1	2	3	4	5	6	7	8	9	10	11
B. FARMERS' FIELDS/ NURSERIES PRODUCTION :										
1. Cereals			Tonnes	65	79	43	65	65	198	80
2. Pulses	—		"	18	4	33	18	20	48	24
3. Oilseeds	—		"	12	1	3	12	12	45	15
4. Potato	—		"	2,000	2,715	1,600	2,000	2,000	3,000	2,200
5. Ginger	—		"	30	20	24	30	45	100	50
6. Vegetable seed	—		"	15	6	9	15	15	40	20
7. Cardamom seedlings	—		'000 nos	200	300	200	200	200	300	200
8. Fruit plants	—		'000 nos	150	295	125	150	150	250	150
9. Others	—		'000 nos	—	—	—	—	—	100	20
V. MANURES & FERTILIZERS :										
A. CHEMICAL FERTILIZERS :										
a. Nitrogenous (N)	041		'000 tonnes	1,000	1,580	0,850	1,000	1,000	2,000	1,200
b. Phosphatic (P)	042		"	0,400	0,895	0,340	0,400	0,400	0,800	0,480
c. Potassic (K)	043		"	0,100	0,412	0,100	0,100	0,100	0,200	0,120
Total (NPK)	—		"	1,500	2,887	1,290	1,500	1,500	3,000	1,800
B. AREA UNDER CHEMICAL FERTILIZERS										
	061		'000 Ha.	30.00	62.00	28.00	32.00	32.00	45.00	35.00
C. Area under Bio-fertilizers										
	—		'000 Ha.	—	—	—	—	0.50	7.00	5.00
D. Rural composting compost pits										
	—		No	5,000	3,000	1,000	1,000	1,000	5,000	1,000
E. Area coverage under micro-nutrients & fertilizer promotion										
	—		'000 Ha.	—	—	—	—	—	16.10	2.20
F. Opening of new sale points										
	—		No.	40	25	10	5	5	83	12

1	2	3	4	5	6	7	8	9	10	11
VI PLANT PROTECTION PROGRAMME :										
A. Consumption of pesticides (Technical grade materials) —										
1. Seed Treatment	051	Tonnes	10.00	18.00	7.50	10.00	10.00	10.00	15.00	10.00
2. Fungicides		"	5.00	9.60	5.10	5.00	5.00	5.00	10.00	5.00
3. Others		"	5.00	9.00	4.00	5.00	5.00	5.00	10.00	8.00
Total (A)		—	"	20.00	36.60	16.60	20.00	20.00	35.00	23.44
B. AREA COVER-AGE										
	052	8000 ha	40.00	95.87	36.00	38.00	39.04	60.15	41.14	

VII STORAGE :

a. Owned capacity with state Government	123	'000Tonnes	8.00	5.00	1.50	1.50	1.50	10.00	20.00
b. Cold storage construction	—	No	—	—	—	—	—	1	—
c. Distribution of storage bins	—	No	—	—	—	—	—	2,000	400

VIII AGRICULTURE ENGINEERING :

A. Distribution of Equipments & implements :										
		No.	4,000	5,610	3,200	3,500	3,500	6,000	4,000	
1. Hand tools		"								
2. Horticultural Tools	—	"	1,000	3,280	2,000	2,500	2,500	5,000	3,000	
3. Others	—	"	1,310	875	370	500	500	1,000	600	
Total (VIII-A)		"	6,310	9,765	5,570	6,500	6,500	12,000	7,600	
B. ESTABLISHMENT OF AGRO-SERVICE CENTRES										
		"	4	2	1	1	1	10	2	

1	2	3	4	5	6	7	8	9	10	11
IX DEVELOPMENT OF NEW INFRASTRUCTURES										
1. Regional Centre Estb. (cumulative)			"	9	—	—	—	—	12	1
2. Regional Subcentre Estb. (Cumulation)			"	7	6	1	—	—	15	2
3. VLW Centre Estb. (Cumulative)	—		"	105	90	12	3	3	153	8
4. Grading & Assembling centres	—		"	—	—	—	—	—	4	1
5. Cardamom curing house	—		"	—	—	—	—	1	15	3
6. Dry land Research Farm	—		"	—	—	—	—	—	1	—
7. Cardamom Research Centre	—		"	—	—	—	—	—	1	1
8. Floriculture Farm	—		"	—	—	—	—	—	1	1
9. Tissue culture laboratory	—		"	—	—	—	—	—	1	—
10. Medicinal Plant research farm	—		"	—	—	—	—	—	1	—
11. Foundation seed potato farm (new)	—		"	2	2	—	—	—	1	1
12. Progeny orchards (new)	—		"	7	6	—	1	1	5	1
13. Gram Sevak Training Centre	—		"	—	—	—	—	—	1	1

1	2	3	4	5	6	7	8	9	10	11
14. Seed processing unit		—	No	1	—	—	1	1	1	—
15. Mushroom & Spawn production complex.		—	No	—	—	—	—	—	1	—
16. Mobile soil testing laboratory		—	No	—	—	—	—	—	4	1
17. Plant protection laboratory		—	No	1	1	—	—	—	4	1
18. Farmers Training Centre		—	No	2	2	—	—	—	1	—
19. Agriculture information		—	No	—	—	—	—	—	4	1
20. Mobile units Libraries		—	No	—	—	—	—	—	5	1

X. TRAINING PROGRAMMES :

1. Post graduate courses		—	No	5	3	1	1	1	10	2
2. Graduate courses		—	..	5	3	1	1	1	10	2
3. Diploma, short courses etc.		—	..	25	16	4	5	5	75	15
4. Gram Sevak Courses		—	..	10	5	—	5	5	100	20
5. Seminars, workshop etc.		—	..	—	—	—	—	—	10	2

XI. AGRICULTURE INFORMATION & PUBLICATIONS

1. Distribution of leaflets, booklets, pamphlets, krishi Samachar etc.		—	Nos in lakhs	3,00	2,00	0,50	0,50	0,50	3,00	0,50
2. Making of documentary films		—	No.	—	—	—	—	—	5	1
3. Educational tours		—	No. of tours	—	—	—	—	—	20	4

1	2	3	4	5	6	7	8	9	10	11
XII. DEMONSTRATIONS :										
1. Field crops	—	nos.	16,450	8,200	3,800	4 450	4,450	25,000	5,000	
2. Horticultural coop	—	nos	2,600	1,285	550	805	805	5,525	935	
3. Plantation crops	—	nos.	-	-	-	-	-	500	80	
4. Tuber crops	—	nos	1,000	450	200	250	250	2,750	350	
5. Vegetables	—	nos	450	250	100	100	100	2,000	200	
6. Others	—	nos	-	-	-	-	-	84	-	

XIII. CENTRALLY SPONSORED SCHEMES

1. All India coordinated maize improvement project	—	No. of trials	36	20	8	8	8	40	8	
2. Rice Minikit-cum-Community Nurseries programme										
a. Minikits	—	No.	820	-	320	500	500	4,000	600	
b. Community Nurseries	—	Ha.	1,043	566	237	240	240	1,390	250	
3. Development of pulses programme-coverage	—	Ha	4,500	-	2,000	2,500	2,500	20,000	3,000	
4. National oilseeds development programme - coverage	—	Ha	9,500	-	4,500	5,000	5,000	28,000	5,200	
5. Minikit programme of maize	—	No	600	-	100	500	500	6,100	700	
6. Training programme on rice, wheat etc.	—	No	10	6	2	2	2	19	3	
7. Special assistance to small & marginal farmers -										
a. Land Development	—	Ha	-	-	124	128	128	640	128	

1	2	3	4	5	6	7	8	9	10	11
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b. Minikit distribution :

I) Pulses	-	No	-	-	600	600	600	3,000	600
II) Oilseeds	-	No	-	-	600	600	600	3,000	600
c. Fruits, Fodders & Fuels plantation		Ha	-	-	160	200	300	2,000	400
d. Development of minor Irrigation		Ha	-	-	224	250	250	1,000	200
8. Strengthening of Seed Testing Laboratory	-	N	-	-	-	1	1	1	
9. National Grid of rural Godowns - Storage Capacity	-	Tonnes	-	-	-	1000	-	2,000	500

Soil and Water Conservation

Introduction

The young geological formation of the Himalayan range, in the eastern part of which the State of Sikkim is located has always caused a certain amount of erosion problems on account of land slides and run off of top soil. The heavy rainfall and the numerous streams and rivers cascading down the mountains aggravate the problem. The unpredictability of the areas where landslides occur has often caused distress in the form of loss of lives and property. Increasing developmental activities particularly road formation, building construction and the denudation of forests have also contributed in no small measure to the erosion problems.

Review

During the past years, the problem has been tackled in an adhoc manner, wherein engineering control works used to be undertaken whenever reports of slips occurred. This not only resulted in a certain amount of wastage of funds but it really did not remove the root cause of the problem, since, very often the work consisted of only suppressing slips in particular areas without taking into account the fact that the areas in the periphery were equally vulnerable. From time to time the numerous jhoras through which water cascades down have been drained but there was no real impact in solving the problem since there was no complete control.

The need to conserve the soil and ecology of the Himalyan region needs no emphasis. Taking note of it, the Planning Commission themselves, through their initiative, appointed a High Level Committee to formulate a landuse plan in Sikkim. The team submitted its report in 1981. It looked at the problem from a wider angle and recommended an Integrated course of action which was to take into account not only the main problem of controlling erosion but also to put available land to optimal use. The recommendations of the team being large, varied and interdisciplinary, the Government constituted initially an Advisory Body and later a technical cell. Ultimately it was felt that unless there is a separate Directorate of Land Use & Environment with specialist staff attached to it, the problem will not be solved to any meaningful extent. Accordingly, a separate Directorate of Land Use and Environment was constituted which had in its organisation experts from the Forest and Agriculture sectors. In order to give policy guidelines and to generally oversee the working of the Directorate, a Land Use Board chaired by the Chief Secretary was also set up. This has now been functional for more than 2 years.

Consistent with the recommendations of the report of the High Level team, the Land Use Board took up for consideration, soil conservation measures in an integrated manner in identified water sheds. The whole of the State is capable of being classified under major water sheds, each of which can be further classified under minor water sheds. The approach has been to tackle each such minor water shed in a comprehensive and integrated manner. The idea is to prepare schemes of afforestation on that portion of the land within the watershed where erosion can be controlled only through afforestation. Likewise, where there is substantial danger of jhoras causing valuable land to be eaten up they will be trained and made stable. Other areas within the water shed will be taken up for land development consisting essentially of terracing areas which are of lesser gradient but requiring terracing

prior to cultivation. Wherever practicable fruit and fodder trees are also to be planted, The system of water shed management does not stop short of engineering and biological work alone but also takes into account the need to improve the soil condition. The comprehensive scheme envisages the conduct of soil analysis and the adoption of remedial action like removal of acidity of the soil and by identifying the crucial micro nutrients which are absent in soil and making the deficiency good so as to improve the texture of the soil.

The varied activities that are necessary to make the land within a water shed stable and kept under control requires suitable personnel both in the field and at headquarters. This has not been achieved to the desirable level at the Directorate.

Following the instructions of the Land Use Committee the Directorate has also undertaken certain special schemes like necklace and garland plantations in selected areas. The High Level Committee stated that it is advisable to introduce garland or necklace rows of trees of fruit fodder and shrubs or grasses after every three or four terraced benches with a view to restoring the ecological balance and ensuring better soil conservation. The garland plantation scheme has proved to be popular and therefore selected terraced areas have already been identified for the purpose of such plantation involving the local farmers themselves in plantation and maintenance.

Another area where special importance has been given is to restore pasture and grazing land, which have become degraded by planting species of grass and fodder trees in a compartmental basis with adequate fencing.

As a result of various activities undertaken, the achievements of the soil and land conservation unit can be briefly summarised below :

Terracing	=	8730 hectares
Afforestation	=	4430 hectares
Garland plantation	=	500 hectares
Amendment of Soils	=	3200 hectares
Fodder plantation	—	75 hectares

The Seventh Plan

The need to continue the same system of work during the Seventh plan needs no special emphasis. At present, schemes are under implementation only in 13 water sheds. It will be necessary to take up more water sheds so that atleast a large part of the State would be covered under such a comprehensive system. The size of the water sheds varies from 1,000 to 5,000 hectares and it is expected that atleast 40 more water sheds would be taken up for coverage during the Seventh Plan. The scope of schemes within water sheds will be enlarged by including stream bank and road side protection works.

Allied to the programme of water shed management, the Land Use Directorate will develop a well organised system of nurseries primarily for the purpose of producing seedlings of the varieties of trees

and grass proposed to be planted within the water shed areas. The nursery expansion programme will be undertaken keeping in mind the need to raise seedlings which are disease free and capable of quick growth.

Another aspect of consideration in the Seventh Plan will be the need to tackle and handle emergency protective measures outside water sheds in an isolated manner. The terrain being what it is, the Government are confronted from time to time with serious problems of erosion in different isolated localities some of which are within the bazar areas. When such occurrences take place there is need to restore the damages as quickly as possible and to provide for protection for the future. A part of the outlay ultimately available for soil conservation measures will accordingly have to be earmarked for undertaking protective measures outside the water shed areas including the bazar and town. Wherever the problems are acute and cooperation from land holders is not forthcoming it will be necessary to acquire the land for treatment purposes.

Another aspect of land use which will be handled by the Directorate is the command area development. A number of irrigation channels have been constructed with the intention of providing continuous water supply to farmers particularly for irrigating the rabi crop and in stabilising the khariff crop.

Unfortunately, the command areas have not really benefited, although irrigation water has been made available because no system of planning and construction of proper feeder and distribution channels including drainage has been conceived of. Specific command area development programmes with the prime objective of water conservation and management will therefore be taken up in the plan.

Soil improvement programmes which include soil testing, identifying and diagnosing the defects of the soil will continue to be given, high prominence during the plan period for which purpose a systematic coverage from place to place will be attempted.

Dry land farming, though not so important in the State of Sikkim will also come within the purview of the Department in view of the fact that there are certain areas of the State which have chronic water shortage problems. In such areas, apart from developing suitable varieties of crops, water conservation techniques will be adopted.

It goes without saying that to undertake the various responsibilities regarding soil and water conservation the organisation of the Department requires adequate strengthening. This will be done keeping in mind the resource position and the actual availability of qualified and trained staff.

Financial Dimension : As amount of Rs. 16 crores is proposed for Soil conservation to meet this manifold requirements of the directorate.

Soil Conservation

Statement GN-2

(Rs. in lakhs)

Name of the Scheme/ Projects	Sixth Five year Plan (1980-85) Agreed outlay.	1980-83 Actual expendi- ture.	1983-84 Actual expendi- ture.	1984-85		Seventh Plan (1985-90)		1985-86	
				Appd. Out lay	Anti. Expen- diture.	Proposed Outlay	of which Capital content	proposed Outlay.	of which Capital content.
1	2	3	4	5	6	7	8	9	10
Direction & Adminis- tration	15.00	20.40	19.68	20.00	20.00	31.00	—	2.00	—
Soil survey & investiga- tion	20.00	19.07	8.67	9.00	9.00	30.00	—	2.00	—
Soil Conservation in water sheds	—	—	68.80	96.00	96.00	1146.00	—	168.00	—
Other soil conser- vation measures	627.00	341.36	8.09	7.00	7.00	235.00	—	35.00	—
Garland planta- tion			6.78	8.00	8.00	63.00	—	8.00	—
Command Area development			4.93	10.00	10.00	95.00	—	15.00	—
	662.00	380.80	116.85	150.00	150.00	1600.00	—	230.00	—

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Animal Husbandry

The rural families of Sikkim have traditionally taken to animal husbandry as part of their livelihood. Almost every family can be found to rear a few heads of livestock and poultry mainly for meeting their own food requirements. The topography of the State is conducive to the utilisation of land for livestock development purposes and therefore it is one of the really important items of economic activity at the village level.

The development of animal husbandry has engaged the attention of Government ever since planning activities commenced in the state. However, traditional practices, low productivity levels, inadequate infrastructure, lack of timely availability of inputs and veterinary aid and a general apathy towards a commercial orientation have contributed to a sluggish growth in the animal husbandry sector which however improved considerably during the 5th and 6th Five Year Plans. There is tremendous potential for rapid development because by and large the State is free from diseases and existence of the army and a growing population makes a ready market available for products like egg, poultry meat, goat meat etc. The stress in development would therefore, be to introduce scientific methods of feeding and management and to provide all the needed facilities for enhancing farm income through livestock and poultry.

During the Sixth Plan considerable emphasis was placed on improving the genetics of livestock and poultry. Cross breeding programmes using artificial insemination techniques were given a boost. Veterinary health was given a wider coverage and training facilities were provided within the State to both farmers and stockmen. More dispensaries and stockmen Centres were opened and for the first time due emphasis was given on the nutritional aspect of feeding. By the end of the Sixth Plan, the number of hospitals and dispensaries would be 32 which, though an improvement on the earlier situation is still not sufficient to make available health services to the farmers at their doorstep. It was in the field of dairy development that there was a real break through during the Sixth Plan. The Cooperative Milk Union with 77 Milk Producers Societies at the primary level became functional, with the help of the NDDB. This proved to be a great boon for the poor farming families. In the field of poultry and piggery development the main area of work in the Sixth Plan was to improve the strains and to provide to the farmers chicks and piglets for breeding at subsidised cost. The development of animal husbandry has been hampered because of the lack of technical staff, not merely ordinary veterinary graduates but more so in specialised fields like in animal breeding, microbiology, nutrition etc. This shortage will have to be made good in case the programmes have to be made more successful.

The main objectives in the Seventh Plan are :

1. To improve at the farm level animal husbandry practices by providing timely and better inputs, by organising extension services on a sound footing so as to improve the management practices and by providing a wider health cover so that no farmer will suffer on account of mortality and diseased animals which in turn have low productivity;
2. To improve genetically the breeds by adopting the latest scientific techniques and to evolve a proper progeny policy so that only high yielding livestock are reared by the farmers.

3. To improve the infrastructure for marketing of livestock produce so that farmers have real incentives to produce more;
4. To make good the deficiency in manpower particularly in specialised feeds of animal husbandry ; and
5. To improve the data base so that the impact of all the programmes is assessed properly.

The above objectives of the 7th plan will lead directly to the creation of more job opportunities in the rural households and will also contribute to the greater availability of food, both of which are National priorities.

With these objectives in mind a brief account of the proposals contemplated during the 7th Plan follow :

Veterinary Services & Animal Health :

The key to the success of animal husbandry development lies in the provision of timely and adequate health coverage. In Indian conditions most of the livestock and birds are extremely susceptible to diseases which have to be prevented because apart from economic loss the confidence of farmers will be shattered if diseases wipe out their animal wealth.

The surest way to provide veterinary health cover is through the establishment of hospitals, dispensaries and stockman centres and to supplement them through mobile services wherever feasible. The norm so far fixed for Sikkim was to establish a veterinary hospital at every 40 kms. and a dispensary at every 16 kms.

Accordingly, by the end of the 6th plan the number of veterinary hospitals, dispensaries and stockmen centres that will have been established is, 7,25 and 9 respectively.

It has been found that the norm based on kms. is not appropriate in the State and hence during the 7th plan it is proposed to change the norm to livestock population. Accordingly it is proposed that there should be one hospital for every 30,000 population of livestock and one dispensary or stockman centre for about 4000/5000 livestock. Livestock population in the State has been assessed through a Census taken in 1982. During the five year period, 3 more hospitals are accordingly contemplated out of which one will be by upgrading the existing dispensary at Singtam. 42 more stockmen centres or veterinary dispensaries are contemplated during the five year period.

Most of the veterinary dispensaries are functioning in rented buildings which are not really suitable for the purpose. During the 7th plan a programme of constructing buildings for such centres will be undertaken. Since these centres are focal points of extension services the policy will be to acquire about 2 to 3 acres of land and build the infrastructure therein so that demonstrations for breeding and management of cattle and poultry along with fodder cultivation can be undertaken by the Department.

The need to control diseases is the most important responsibility of the veterinary health infrastructure. Most of the diseases in animals and birds occur due to slack control at the border points of entry as

a result of which there is an influx of diseases through such points. One check post was established at Rangpo for controlling the diseases and here all animals entering the State were subjected to a check up. Only the healthy animals were permitted to enter the State. During the 7th plan 3 more check posts are proposed at Rishi, Melli and Naya Bazar which are points of entry at the border.

Disease control can be established only by prophylactic vaccination. The number of cases treated and vaccination performed during the 6th plan is given in a tabular form below.

	80-81	81-82	82-83	83-84	84-85 (Targets)
Cases treated	71,528	1,07,241	80,543	95,588	1,00,000
Vaccination done	21,193	28,970	25,972	26,000	65,000
No. of Castrations	3,560	2916	2683	2857	3000

The programme of vaccination will be continued with vigour particularly in the case of foot and mouth disease which is one of the most dreaded diseases among cattle. At least 2.25 lakhs of animals are targeted to be protected against this disease. Among other diseases mention should be made about liver fluke and helminth control, rinderpest and pullorum disease of poultry. Some of these are undertaken through Centrally Sponsored Schemes and depending upon the nature of Schemes they would be continued during the 7th plan with a wider range and coverage.

An effective disease control programme has to be supported by a disease investigation laboratory. The laboratory is needed not only for investigating diseases but also for correctly diagnosing certain symptoms. At present there is a laboratory at Gangtok. A single laboratory in the State is however insufficient. Hence one more at Karfektar is proposed during the 7th plan. A virus typing centre will be attached to this laboratory. In order to intensify prophylactic vaccinations, the laboratory will also have a vaccination cell headed by a Veterinary officer assisted by a stockman and vaccinators.

Another aspect of veterinary health consists of animal disease surveillance under which an epidemiological unit was set up to compile, analyse and interpret data on the prevalence of diseases of livestock. Not much work could be done due to shortage of technical staff and therefore an endeavour would be made during the 7th plan to make good the deficiency. Finally, more intensive rabies control will be undertaken because dogs are today roaming around and are therefore highly susceptible to becoming carriers. Apart from vaccinating stray dogs they will also be destroyed in a more systematic manner.

CATTLE DEVELOPMENT

Most of the cattle in Sikkim being of a non descript variety with low yields and genetically poor they require a lot of improvement. The per capita yield of milk is sometimes as low as 2 to 3 litres per day as a result of which cattle rearing has become uneconomical to a large section of the farmers.

The National policy has revolved around the need to improve the productivity of milch cattle. Intensive cross breeding with exotic breeds which are high yielders is the answer. This programme was initiated

in Sikkim also, but the absence of proper breeding techniques and the difficulties in organising a sustained programme of AI resulted in a sluggish growth during the past few years. Although the growth rate in terms of milk production has been fairly good, growing by 4.6% it cannot be said to be the optimum level of improvement. During the 6th plan, the cross breeding programme was initiated through a build up of A.I. services through the net work of veterinary dispensaries and stockmen centres. The drawback was that a proper parent stock for a heifer raising farm could not be properly established. 50 Danish/Jersey cows were imported for the purpose but their performance has not been as high as expected. The reasons for the less than satisfactory output from the Danish herd have been acclimatisation problems and outbreak of foot and mouth disease. Nevertheless, the nucleus of the breeding programme can be said to have begun with the import of the Danish breeds.

The cattle population of Sikkim according to 1932 census is 1.72 lakhs, of which the following are the details pertaining to cattle development programme.

The total cross bred females-16,635, local - 47,390 young stock under 1 year consists of 7,554 cross bred and is 25,865 local indigenous varieties. This shows that there is considerable scope for improving the varieties.

The main strategy during the 7th Plan will be to evolve a proper progeny policy, the basic ingredient of which will be to nurture female cows, which after maturity will have a milk yielding capacity of 15 to 20 litres per day. If this strategy succeeds, the milk production in the state which is around 20,000 tons per year can be more than doubled bringing in economic returns to the farmers and can flood the State with surplus milk which could help the recently organised Milk Union to be a viable entity.

The essence of the programme will be to identify the type of breed that will be most suitable for Sikkim conditions. Current experiments and available knowledge has revealed that the Holstein Friesian breed, from the point of view of milk yield is the best bet. The Department will endeavour to organise a heifer raising farm at different locations, one of which at Pangthang has already been established. Another at Karfactor and at Chuchachen are also likely to be established soon. From these farms, the programme of collecting liquid semen from the healthy and high progeny bulls will be started using liquid nitrogen containers. Fortunately for the State, the milk union has a liquid nitrogen plant of 5 litres per hour capacity which can be made full use of for the purpose of collecting the semen. Necessary strengthening of man power infrastructure by appointing trained stockmen and supervising staff will be undertaken and every thing possible will be done to provide the farmers at their door step A. I. services. The number of A. I. Centres is proposed to be increased by 50 by the end of the plan period. The number of inseminations proposed is also to be stepped up to 30,000.

While improving the genetic quality of the cattle is an important consideration, the short term goal of the Government is to ensure that more milch animals are available in the State for the purpose of providing enhanced incomes to the rural families. During the 6th Plan, a scheme of purchasing good quality cows from the neighbouring district of Darjeeling was evolved with a fair amount of success. This scheme will be continued during the 7th Plan also but with the stipulation that the cows so purchased will be examined and certified as disease free by veterinary doctors.

As an adjunct to the cattle development programme, it is also proposed to build up a bull rearing farm at Gyalshing. The present farm has not really served the purpose and therefore, there is need to expand the scope of activity primarily for the purpose of distributing quality bulls to the Panchayats for natural purposes. The brown swiss cattle farm, the beginnings of which have taken root at Rabongla will also be expanded by increasing the strength of the herd which is only 10 at present to 75. The brown swiss animals are hardier and have good meat qualities. The calves born in the farm are proposed to be distributed to the farmers on a subsidised basis so that the spread of better quality cattle among the farmers will be wider.

The question of providing balanced feed will be given consideration. Feed should not only have bulk but also nutrition. There are several factories manufacturing good quality feed but the cost factor has always proved to be the deterrent to the consumption of feed in adequate quantities by the farmers. Problems of transportation, storage and distribution have also got to be overcome in order to popularise the feed content. These aspects will be given due consideration during the Plan by building in a subsidy element and by organising the distribution of feed through the auspices of the milk union and primary milk producers societies. Along with the manufactured feed, the extension mechanism of the Department will go all out to supplement such feed with green fodder. In the Government farms, special efforts will be made to grow more fodder and to distribute seedlings to poorer farmers free of cost.

Lastly, the question of cattle development will be considered from the man power point of view and least 2 Specialists in animal breeding will be inducted into the administrative hierarchy of the Department.

POULTRY DEVELOPMENT

Poultry Development : Poultry development programmes under the animal husbandry sector have the advantage of providing triple benefits of better nutrition, additional income and more job opportunities in the shortest possible time. The production of eggs and poultry meat has been maintaining a linear trend. Egg production has gone up from 3.0 million eggs in 1979-80 to 4-13 million eggs (anticipated) by the end of 1984-85 thereby recording an overall increase of about 7% per annum. High feed prices and unfavourable economics of egg production have proved to be the main constraints in more speedy development in this field.

On an average, eggs worth Rs. 6000 lakhs are brought in from other States to cater to the needs of the civilian public and the Indian Army. This implies that a lot of developmental work is required to build up farms and to be self-sufficient both in egg and meat production.

During the Seventh Plan the objective will be to increase egg production adopting the National growth rate of 8%. This will be achieved by establishing Central poultry farms at Karfektar and at Rabong where incubator-cum-hatchers have already been installed.

The Department has about 82 acres of land at Karfektar and till recently poultry, pigs, goats and cattle were maintained. But during the Seventh Plan it will be groomed mainly to keep poultry birds because the agroclimatic conditions are quite congenial for poultry farming. Presently, this farm has a capacity to house, 3,000 layers and the capacity is being fully utilised.

Parent stock of 550 broiler birds will be procured from central poultry farms, Hessarghata/Bhubneshwar in 1985-86 and it will be augmented to 1,100 birds and annually about 1.00 lakh chicks will be hatched and reared till the age of 12 weeks. Thereafter about 50,000 chicks will be distributed to the farmers against bank loans, SC/ST welfare schemes and the balance about 20-25 thousand will be reared for meat purposes. Hence in a time span of 5 years, it is targetted to distribute 2,50,000 broiler pullets of 12 weeks age.

To achieve all these, specialists in particular professions like sexing of chicks and incubator-cum-hatcher operation are required. Infra-structure like poultry shed, brooder house, rearing house and store will have to be built to accommodate additional stock.

Adequate veterinary health cover particularly against the occurrence of fowl cholera will be provided.

At Tadong, a stock of about 3,000 adult birds is being maintained for bridging the gap between demand and supply of eggs and meat in Gangtok.

During the Seventh Plan the strength of total birds will be raised to 10,000 and annually 2.0 lakhs eggs will be hatched for distribution to the farmers for multiplying and meat purposes. A layer farm of 1,500 layers and a broiler farm with 1,100 parent stock will be maintained. Necessary infra-structure like brooder house, rearing house and poultry shed will be built to accommodate the additional birds.

In order to popularise poultry farming, it is essential to establish small units at all the dispensaries/stockmen centres so that farmers are exposed to better management practices. During the Seventh Plan, demonstration units of 50 birds each will be established at all the dispensaries. From these units, fertile eggs to the tune of 1,00,000 per annum will be distributed to the farmers for hatching and the remaining will be hatched in departmental hatcheries. Yearwise target of establishing these units is given below :

Year	East	West	North	South	Total
1985-86	9	4	3	5	1
1986-87	5	4	1	7	17
1987-88	4	3	2	3	12
1988-89	5	4	2	4	15
1989-90	5	3	3	4	15
Total :—	28	18	11	23	80

Apart from dispensaries the demonstration farms at the hospitals except Chungthang and Tadong will be established each one having a strength of 500 birds. Presently such farms are working at following hospitals :

1. Rhenock	300 birds
2. Namchi	200 birds
3. Gyalshing	200 birds
4. Soreng	50 birds
5. Mangan	200 birds.

To house 500 birds, additional sheds will be constructed Like dispensaries, hospitals also distribute fertile eggs to the farmers for hatching.

Duck Breeding : Ducks are amongst the most versatile birds which can be raised both for meat and eggs. They are easy to raise because of their rapid growth, ease in handling and hardiness as far as resistance to diseases is concerned. Ducks are economical to rear. At present the ducks are concentrated in the eastern and southern States. If kept on commercial scale, they can fetch a handsome profit to the farmers. Moreover, unlike chicken, the ducks can be kept for three years continuously for profitable egg production and there is only a small pause between laying periods.

With this in view, the department acquired fertile eggs of 'Khaki' Campbell, egg producing type duck from Hessarghata. Unfortunately the stock built up was wiped out due to duck plague for which no vaccine was readily available.

During the Seventh Plan, it is proposed to build up a flock of about 500 ducklings for egg production and a parent stock of about 200 ducks. About 10,000 ducklings will be distributed to the farmers. Infrastructure like brooder house, rearing house and ponds will be built.

QUAIL AND TURKEY BREEDING FARMS :

Quails like duck are becoming popular for egg production. Feeding quails is less expensive. The quail meat is more delicious as compared to poultry birds. During the Seventh Plan, farm of about 500 birds will be established to study its suitability under a pilot Sikkim conditions and its acceptability by the general public. Similarly, a turkey unit will also be established to study their suitability etc.

PIGGERY DEVELOPMENT :

Most of the farmers in the State keep a few pigs in their households. Consumption of pork and pork products is quite popular as a dietary item even in rural families. A properly organised piggery development programme is therefore of great use to the people of the State. During the past few years the

demand for piglets has increased considerably and to the extent possible the department has been able to meet the requirements of the people. However there is a big gap between demand and supply. Pig population in Sikkim according to the 1981 census is 30093 out of which only 6,284 are cross bred. The cross breeds are white yorkshire and saddle back.

The strategy in the plan will be to increase the number of cross bred pigs and to do away with the nondescript population. Towards this end in view the programme consists of distributing improved varieties of boars so that the offspring are of better quality. The limiting factor is that most of the people who are used to consuming pork do not allow the piglets to grow to maturity but instead they are castrated for fattening and later eaten up. This has retarded the breeding programme but explains the preference for male piglets by the farmers. Secondly the average number of sows raised by the individual farmer does not exceed two or three and thus the maintenance of a boar is not always economical. Another factor is that the Government farms are not able to keep pace with demand. nally the community breeding through boars stationed at the panchayat levels is not used widely by the farmers.

In order to overcome these bottlenecks and to accelerate the cross breeding programme, boars are proposed to be stationed at all the stockmen centres, dispensaries and hospitals instead of at the panchayats. Only in those cases where there are no stockman centres will panchayats be provided with boars. In addition to this method the department proposes to encourage the purchase of cross bred piglets at remunerative prices. An element of subsidy will be built in.

During the 7th plan it is proposed to establish and strengthen the piggery farms at Tadong, Geyzing and Karfektar. The first mentioned will have a strength of 200 sows and other two 150 sows each. From the Tadong farm about 2,000 piglets are proposed to be distributed each year to the farmers under the socio-economic programmes. The programme envisages periodical replacement of sows so that only those in maximum production will be housed. Similar programmes are contemplated at Geyzing and Karfektar where the infrastructure will also be improved. At the panchayat level 90 boars will be distributed and this is expected to serve 12,150 sows during the period.

In order to encourage the farmers to take to piggery in a larger way, a scheme has been drawn up according to which in each unit 3 gilts will be given. The farmers will have to construct the pig house. Until the gilts grow up and start furrowing the department will supply feed concentrate at 50% subsidy. The farmer will be induced to select a minimum of 5 to 6 female piglets from the first and second furrows to start his own unit. After the second litter the sows will be weaned out and given to the second beneficiary for the next two furrows.

All pigs will be insured. After the 4th furrow the sows will be culled and auctioned. The essence of the scheme is to inculcate in the farmers the benefits of improved systems of pig rearing. This will be followed by distribution of subsidised piggery feed so that the burden of high prices can be absorbed by the farmers.

SHEEP AND GOAT BREEDING :

Goat Breeding : One of the objectives laid down in the Seventh Five Year Plan is to increase the

production of meat and other livestock products, keeping in view the food habits of people and the gap between demand and supply.

There is an increasing trend in the demand of meat throughout the State. This has shot up considerably due to the Indian Army stationed in this strategic State. The demand of meat by the Indian Army alone in Sikkim is 5,000 tonnes annually. For meeting their requirement, goats from the neighbouring states are brought in thereby draining out the money. On seeing the tremendous scope for goat farming due to assured and regular market and the quick returns available from the goats, farmers are coming forward to take up goatery.

The local goats which are of Bengal type are low producers of meat and their body weight is less. In order to improve the local stock, cross-breeding of local goats with jamunapari and beetal goats was taken up and flock of 73 jamunapari goats was acquired in 1983-84 and a farm at Namthang was started. It is still in its infancy.

The Project-Co-ordinator, Goats recommended an A.I.C.R.P on goats instead of sheep project on noting the quick response and interest taken by the general public.

The objective during the Seventh Plan will be to improve the productivity of local goats by crossing them with breeds like jamunapari and beetal goats—the crosses of which have already shown encouraging result in departmental studies. This objective will be achieved by establishing 2 farms for cross-breeding purposes and by distributing bucks to all the dispensaries stockmen centres for breeding purposes.

Goat Farms—Namthang : About 25 acres of land was acquired at Namthang and a beginning was made in 83-84 to establish a goat farm since the climatic conditions are quite favourable for goat breeding. Presently a goat shed for 30 goats and a dispensary building have been set up but this infrastructure is inadequate keeping in view the programme proposed and the future expansion.

It is proposed to keep 150 goats of non-descript local type and few heads of jamunapari males & females for cross-breeding purposes. It is proposed to distribute annually about 250 cross-breds to the farmers against bank loans and other schemes.

During the Seventh Plan, the existing man-power material infrastructure will be strengthened by creation of the needed posts and initiating construction of buildings. Another goat farm on a similar basis will also be established at Mangalbari—a dry area but potentially good.

Sheep Breeding : In Sikkim Sheep have not shown promising results because of high rainfall. The sheep population in Sikkim is only 10,817 and these are mainly migratory type and local/nondescript type (banpala, gharpala). Only 8.9% of the total sheep population is crossbred, mainly at Government farms. The cross-bred, are mainly crosses of Russian Merino, Corriedal and Rambouillet. Russian Merino, Corriedal were brought for improving the local sheep with regard to their wool production. This project has been wound up due to poor progress and unsuitability of sheep for fine wool production. This would have been better, had the project been on meat production.

A sheep farm at Bega in West district is functioning. It has 200 sheep in the farm. During the Seventh Plan, the object of this scheme will be to develop the banpala sheep primarily for mutton. For this, the herd at Bega will be maintained and rams will be distributed to the farmers. During the Seventh Plan 40 rams will be distributed.

OTHER LIVESTOCK DEVELOPMENT :

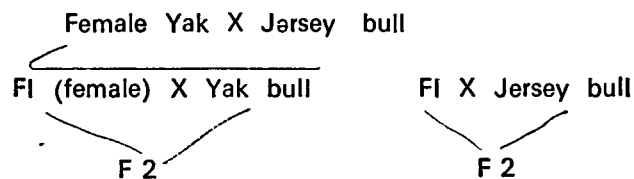
Cross-Breeding of Yaks : According to 1982 Census, the Yak population in Sikkim is 3,470. The animal thrives well in higher altitudes, usually beyond 9000-10000 ft. but can also be maintained with care at lower altitudes. They feel uncomfortable in temperatures beyond 15-20° C. Yak rearing is economical in the sense that no feeding of balanced feed is required. It lives on natural grazing. Yaks are low milk yielders usually between 500 ml. to 1000 ml. per day but it contains high percentage of butter fat (10-12%). These animals are used for carrying loads in the higher altitudes. The Yak tail has commercial value. Its hair is sheared once a year and is used for making mats.

So far no attempt has been made to improve the Yaks genetically. Very little study has been undertaken in Sikkim as well as in other parts of the country and abroad. Cross breeding of Yak, with Jersey which is a high milk yielder with low fat content with a view to evolve a species which have the salient features of both Yaks and Jersey has not been taken up though a token provision was made for the purpose. During the Seventh Plan period, a herd of about 20 female Yaks, 2 males each of pure Jersey and Yak will be maintained at Gnathang in East district which has an altitude of about 12,000 ft.

Technical programme of cross-breeding of Yaks with Jersey bulls will be done in two phases as under :

(i) In the the first phase, physiological studies of Yaks like breeding cycle, age at maturity and first calving. production trait, inter-calving interval will be done.

(ii) During the second phase, cross-breeding of female Yaks with Jersey bulls will be taken up. In F1. males are believed to be sterile whereas the females are fertile. Males will be used for drought purposes whereas the females will be crossed with pure Yak bulls to get F 2 which will have 75% Yak blood. A second type of crossing of F1 female with pure Jersey bulls will be done to get F 2 generation having 75% jersey characteristics.



The production traits of F1 and both the types of F 2 will be studied with regard to their milk yield, fat content, adaptability to lower altitude and susceptibility to diseases common in cattle at lower altitudes.

For establishing the Yak cross-breeding farm at Gnathang, about 10 acres of land will be acquired.

and the infrastructure will be built.

Rabbit Breeding : Rabbit meat is gaining popularity throughout the world. The commercial value of rabbit fur is also well known. Keeping in view the quickness with which rabbits multiply, they have a gestation period of 90 days only and give birth to 5-6 young ones each time, Rabbit breeding is a promising scheme for bridging the gap between demand and supply of meat in the State. The climate in the higher altitudes is quite conducive for rabbit multiplication.

During the Seventh Plan, this scheme will be taken up at Pangthang. About 50 "angora" female rabbits and about 10 male rabbits will be procured from the neighbouring States. Suitability of rabbits in Sikkim conditions will be studied. The response of people will also be studied in accepting rabbit meat as a food item.

Feed and Fodder Development

It is well recognised that livestock feeding is important in animal husbandry as breeding, management etc. and feed and fodder account for nearly 70-80% cost of milk or other produce. Improved progeny fails to show its inherent potentialities unless fed properly.

In Sikkim there is a great deal of scarcity of cultivated pasture which can provide year round grazing to the dairy animals. The farmers, therefore depend largely upon products such as cereals straw, grass hay, fodder trees etc. These fodder are of poor quality. As a result the nutrient deficiency in animals is made up by feeding concentrates which are always in short supply and on the other hand are costlier.

For full exploitation of the milk production potential of especially the cross-bred and exotic breeds of cattle it is imperative that nutritious and palatable lush green forage is made available at the rate of 35 to 40 Kgs, per day per adult animal. Feed should consist of 2 parts of cereals and 1 part of legume, 3 Kgs. dry matter and 2 Kgs, of concentrate (roughly 35-40% of the milk production per animal). The efficiency of milk production is adversely affected by inadequate feeding practices during the dry period and also during late pregnancy.

Sikkim having 32,510 cross-bred animals and equal number to follow during the plan period, will require about 94 thousand tonnes of green fodder alone. The remaining cattle and livestock will require about 6.25 million tonnes of fodder. The total requirement works out to be 6.26 million tonnes. Of the total 7,23,860 hectares the area under fodder cultivation is very limited. Pastures have only 14% of the area. About 5 tonnes per hectare can be had from the forests which account for 36.2% of the total area and another 6 tonnes per hectare from the pasture land in a year. The availability of fodder from these two sources will be :

1. Forests-2,62,140 hectares=1.31 million tonnes
2. Pastures-1,02,400 hectares=0.61 million tonnes

Hence, there is a shortage of about 3.34 million tonnes of fodder. For getting this much of fodder 88 thousand hectares of land has to be put under fodder cultivation taking average yield per annum

per hectare as 40 tonnes. A master plan for fodder development has been prepared jointly by the team consisting of officers from relevant departments like Forest, Land Use & Environment, Agriculture, I. C. A. R., Sikkim Livestock Dev. Corpn., Milk Union and Animal Husbandry. The total cost of the project works out to be Rs. 1.59 lakhs. According to the report, the State has been divided into three zones viz: temperate, tropical and dry high zone. A fodder seed production farm has been recommended in each zone.

Thus the approach in the Seventh Five Year Plan will be:

1. to take trials of various fodder varieties in different farms in different agro-climatic conditions, altitudes etc.
2. to propagate the fodder plants which have given encouraging response and then multiply them for distribution.
3. to be self sufficient in the production of fodder seeds and fodder cuttings.
4. to set up demonstration units at all dispensaries/stockman centres/hospitals and do extension work by providing with necessary inputs.

During the Seventh Plan farms at following places are proposed to be set up :

Fodder Seed - Rorathang : 7 acres of land are available at Rorathang. Rorathang is situated at an altitude of about 3,000-3,500 ft. above M.S.L. At this farm the sub tropical fodders like clovers, rye grass which have shown promising results will be grown. At this farm the land is to be developed. Essential posts relevant to fodder development work need to be created. After building up a part of the essential infra-structure, cultivation of fodder will be taken up from the second year. The targets of seed production and the root slips/cuttings distribution from this farm are 12.0 qtls. of seed and 50,000 root cuttings to the farmers around milk collection centres in a year.

Fodder Seed Farm, Zema : This farm is situated in the North district at an altitude of about 10,000 ft. above m.s.l. The climate of this area is of temperate type. The cultivable area at this farm is about 5 acres. This farm will be developed for producing seeds of temperate and sub-tropical fodder which have shown encouraging results at other farms. Clovers of various varieties will be grown. During one year it is targetted to produce about 10 qtls. of clover seeds and about 50,000 root slip cuttings for distribution to the farmers around milk collection centres.

Since sheep are reared in the area, it is essential to provide cross-bred rams or rams with known genetic build up for breeding purposes.

Pasture and Fodder Farm, Karfektar : Department has about 82.0 acres of land at Karfektar but the area under fodder cultivation is very limited-about 5% of total land available. Only 4 acres of land have been developed and a fodder nursery has been established against originally planned 50 acres of land under fodder cultivation. The rainfall is scanty and it is not possible to tap the natural source which is far off from the farm. In order to mitigate the shortage of water a lift pump was installed in 1933

at the river bank. In the land developed, various fodder strains were planted and put to trials. One lakh cuttings of Gautemala grass were planted. Gautemala is drought resistant and remains green during the winter. From here about 2-0 lakh cuttings have been distributed. A new strain of Napier-african type had been introduced in 1983. Through vegetative propagation in 1983, 50,000 seedlings were multiplied. This fodder has been found to be ideal for Sikkim, due to its capability of growing in acidic soils and poor solar energy. Various fodder trees have also been planted. A new strain of sue-babul namely, Hawaiian strain has been found to be quite promising. Similarly out of 20 strains of grasses and legumes introduced, 4 strains including stylozanthus have shown encouraging results.

During the Seventh plan it is proposed to develop 50 acres of land and prepare it for planting the strains of grasses, legumes, fodder trees which have been found to be suitable under the prevailing agro-climatic conditions there

It is anticipated to produce about 72 tonnes of fodder annually from the pasture from 3rd year onwards and about 250 tonnes green fodder for conversion into silage and hay. About 15 lakh cuttings will be distributed to the farmers every year.

Fodder Farm, Pangthang :

To meet the fodder seedlings, hay and green fodder requirement of East and North Districts, the farm at Pangthang will be developed further during the Seventh Five Year Plan. Pangthang has about 25.0 acres of cultivable land which has been partially developed for planting fodder plants and grasses. Another, 35 acres of land will be developed and made suitable for fodder cultivation. At this farm which has temperate type climate, number of fodder strains have been successfully grown. Clovers, rye grass and oats have shown good results. These fodders will be raised for propagation and distribution.

During the Seventh Plan 2,000 qtls. of green fodder will be produced and 250 qtls. of hay will be made. 7.5 lakhs fodder cuttings will be made available for distribution to the farmers.

Fodder Demonstration Units :

One of the reasons for poor response in fodder development has been poor extension services. Unless fodder/grasses are grown in the vicinity of farmers area, they will not be able to mark the progress and adopt the pattern in their lands.

It has therefore, been felt essential to establish fodder demonstration units around all the dispensaries/hospitals/stockman centres. Land in all the dispensaries/stockman centres is not available. Efforts will be made to acquire land where dispensaries are running in private buildings and establish bull shed board-cum-buck shed and fodder demonstration units. Presently land is available at only 21 places.

Distribution of chaff-cutter and fodder seeds/minikit to the farmers :

Considerable wastage of fodder,¹ particularly obtained from maize, oats, para grass occurs can be saved if fodder is chaffed and then fed to the livestock. The use of chaff-cutters will therefore be popularised

as fodder saving devices, by granting subsidy towards their purchase. During the Seventh Plan, it is proposed to distribute 100 chaff-cutters to farmers on 50% subsidised rate.

Fodder Cultivation at Government Farms :

For meeting the fodder requirement in Government farms where livestock is kept/will be kept, fodder will have to be grown in the farm. Generally maize, oats, cowpea, clovers will be grown and gautamala will also be planted. Fodder trees like Ku-babul Subabul and local fodder trees will be grown which will not only provide fodder but will also help avoid soil erosion.

Animal Feed

As already indicated, the cost of production of livestock depends on feed apart from other factors. Cost of feed accounts for 70-80% of the total cost of production. In Sikkim, farmers are not coming forward to take up various livestock developmental schemes as anticipated. mainly due to the cost of feed which leaves very nominal margin. This problem cannot be solved unless the Directorate manufactures feed of its own and that too with locally available resources. Presently the feed is being procured from neighbouring states through the Sikkim Milk Producers Co-operative Union and the Sikkim Livestock Dev. Corpn. Ltd. and feed worth about Rs. 26-30 lakhs is procured annually for departmental stock.

Existing livestock position at various Government farms, hospitals and dispensaries targetted strength during the Seventh Plan and the annual feed requirement in the Seventh Plan period is given below :

Sl. No.	Farms/Hospitals	Type of livestock	Present Strength of livestock	Proposed strength during 7th Plan	Annual Feed requirement in the 7th Plan Qty. (in tonnes)	Value (in lakh)
1.	Livestock Farm Tadong	Poultry	7,000	10,000	2190.0	43.8
		Pig	75	200	730.0	14.60
		Cattle	50	—	—	—
2.	Pangthang Farm	Cattle	20	100	365.0	7.30
3.	Karfektar Farm	Pigs	50	150	547.5	10.95
		Cattle	25	50	182.5	3.65
		Goats	—	—	—	—
		Poultry	3,000	10,000	490.0	43.8
4.	Rabongla Farm	Cattle	20	75	410	8.20
5.	Chujachen Farm	Cattle	5	25	9.25	0.18
6.	Bull Rearing Farm Gyalshing	Cattle	10	30	131.25	3.28
		Pig	—	150	547.5	10.95

7.	Goat Farm Namthang	Goat	—	150	274.0	5.48
8.	Goat Farm Mangalbari	Goat	—	200	365.0	7.30
9.	Cattle Farm Rabum	Cattle	2 (bulls)	25	9.25	0.18
10.	Vety. Dispensaries	Poultry birds	150	2150	471.0	11.78
	Stockman Centres	Pig	5	86	314.0	6.28
		Bucks @ 1	5	86	157.0	3.14
		Cattle/bull @ 1	20	86	471.0	9.42
11.	Veterinary Hospitals	Poultry	2,000	5,000	1095.0	21.90
		Pigs	5	18	6.18	0.14
		Bucks	4	20	3.65	0.08
		Cattle	25	20	11.0	0.22
12.	Sheep Farm Begha	Sheep	200	200	365.0	7.30
13.	Yak Breeding Farm Gnathang	Yaks	—	100	365.0	7.30
14.	Duck/Quail Farm	Duck/Quail	—	700	153.2	3.83
15.	Rabbit Farm	Rabbit	—	100	9.25	0.18
GRAND TOTAL		LIVESTOCK AND POULTRY			11.372	231.24

The above table would indicate the need to prepare feed departmentally. It does not take into account the livestock and birds kept by the general public. In Sikkim maize, wheat and rice bran are available. If oil cakes could be produced only 15-20% of the raw materials will have to be brought from outside the State. Establishing this kind of agro-based unit will not only reduce the cost of production of feeds but also will help in using the locally available ingredients, thereby providing an assured market to the farmers and above all, will provide employment.

ORGANISATIONAL STRUCTURE

The present organisational structure of the Department needs to be restructured consequent on diversification in activities. The greatest need is to strengthen the technical men power input at all levels by the infusion of subject matter specialists. This will be given due consideration in the plan and the needed posts of specialists with supporting staff will be created at all levels.

One of the ways in obtaining the services of qualified personnel is to provide ample training opportunities for acquiring higher academic qualifications. Stipends and book grants will be provided to local candidates for under-going B.V.Sc and M.V.Sc courses. Wherever possible officers will be sent for training in foreign countries under bilateral programmes. In the fields of animal breeding, nutrition, pathology and medicine special emphasis will be given since these are vital aspects of development within Animal Husbandry.

Apart from specialists, the success of the various programmes depends to a great extent on training personnel at lower levels. Of these, stockmen constitute the most important rung. Candidates with basic

educational qualification at the school level are proposed to be selected and trained for stockman's duties. The training course including practical training will be of 9 months duration during which period the trainees will be provided mainly stipend and other facilities like boarding and provision of teaching material. Apart from training refresher courses for existing stockmen will also be provided, because they have to be continuously exposed to new areas of development. Training in artificial insemination will be an integral part of the stockmen training contemplated.

The Department also proposes to organise periodical training of farmers because unless there is an interaction between the officials and the beneficiaries the various programmes contemplated in the plan cannot become successful. The farmers' training will concentrate on exposing them to latest technical innovations in the field of breeding management and feeding which will be supplemented by pamphlets and booklets and also film strips. Progressive farmers will be taken on conducted tours to places like ANAND where they see and learn. It will also be necessary to construct a farmer's training centre with a hostel attached to it. The exposure of farmers to modern techniques will be supplemented by organising livestock shows and calf rallies which have proved to be very popular among the rural families.

Although a beginning has been made to collect important animal husbandry statistics, the collection of data still requires improvement. Proper planning, implementation and evaluation can be undertaken only if the flow of data is reliable and uninterrupted. Although a livestock census was undertaken in 1982, the statistics wing of the department was not able to complete the work of livestock product estimation survey. During the 7th plan, the 14th quinquennial livestock census of 1987 will be undertaken and among the special studies contemplated are estimation of production of various livestock products, survey on cost of production of milk, study on per capita availability and demand of various livestock products, and study of the economics of rearing livestock in different agro-climatic conditions and suggesting the most profitable schemes in each area. It goes without saying that for such purposes there will be need to strengthen the statistical machinery of the department which today has only a skeleton staff. Creation of the needed posts and appointing personnel against them will thus be an item of priority.

COMMERCIAL PROGRAMMES :

The commercial aspect of Animal Husbandry like the sale of meat, eggs and feed etc. is looked after by a public sector undertaking called the Sikkim Livestock Development Corporation. The corporation was originally set up for the purpose of introducing the milk collection programme on the lines of the NDDB ANAND pattern. This work was handed over to the Milk Union after the Scheme got itself established. However, the Corporation suffered financial loss because in the initial stages the operational deficits were on the high side.

After the formation of the Milk Union, the SLDC took up the production of poultry and piggery feed, the distribution of broiler birds for meat purposes, the sale of eggs and a few other livestock products.

During the 6th plan a subsidiary of the SLDC called "Sikkim Organics" was also set up mainly for the purpose of processing raw bones, hides and skins of animals for production of bone meal and other products of consumption by Industries and Agriculture.

The SLDC will have to be given further financial support because it can be a viable proposition only if some revenue earning schemes are taken up for implementation. One of the items proposed during

the 7th Plan is to construct a modern slaughter house near the border at Rangpo partly with the assistance of the NABARD and partly through the injection of equity capital. At present there are no holding yards for animals and the problem of disposing slaughter house waste is a major point. A modern slaughter house in a wide open space near the Sikkim Organics is a must. Setting up of a slaughter house in this area will also prevent the spread of diseases transmitted through animals which come into the State from West Bengal. With the setting up of a slaughter house the Sikkim Organics will also have an opportunity to diversify its activities including the production of high value items like gelatine and other organic manures.

Another area of activity that will be undertaken by the S.L.D.C. is to expand and modernise its existing feed plants for poultry and piggery. In addition to the feed plant at Gangtok the SLDC also plans to set up a mixing plant at Karfektar mainly for the animals and birds concentrated there.

Since the SLDC is expected to supply meat to the consuming public, commercial rearing of broilers, pigs and goats will also be undertaken after formulating specific projects for these purposes. A broiler farm of minimum capacity of 10,000 birds, a goat farm of 200 females and 20 bucks and a sow unit with 25 animals are targeted for the 7th plan.

In view of the need to provide timely and adequate feed to the farmers as well as to the Government farms the possibility of establishing a solvent extraction plant will also be given due consideration. Soyabean and maize are already grown extensively in the State. The cost of cultivation is also low but the lack of a ready market has hampered the farmers from going all out for such cultivation. Soyabean in particular has high protein having 18% to 20% of oil content. It however requires extraction by the solvent method. 5 kgs of soyabean can give 1 kg of oil which will fetch about Rs. 15 and give 4 kgs of soayabean cake, which can be profitably used for animal feed. In view of this great potential, the SLDC will explore the possibility of setting up a unit through which it can meet the feed requirements of the State and earn a good profit.

I.C.A.R. Projects :

During the Sixth plan, a number of I.C.A.R. schemes like the All India Co-ordinated Research on poultry and goats, epidemiological unit on foot and mouth disease are being implemented in which the contribution of the State Government is 25% for the foot and mouth scheme and 50% for the other schemes. Since all the three schemes have proved to be of great use to the State they will be continued with a wider coverage during the 7th plan.

Dairy Development

INTRODUCTION

Most of the rural farmers of Sikkim traditionally own herds of cattle as a result of which the organisation of farmers into small co-operatives through which the milk produced is collected and sold through an effective marketing mechanism is the most important of the socio economic programmes of the State. The farmers being poor, do not own more than two heads of cattle except in a few exceptional cases. Therefore, the strategy has been to organise such small farmers through a system which did not envisage capital intensive milk production.

Review

As early as 1977, the Central Government envisaged a fairly massive scheme of setting up a co-operative system on the 'Anand' model in Sikkim. As is the practice, the initial work was undertaken by a spearhead team of the NDDB and to start with the milk that was collected was processed in the existing 1,000 litre per day plant at Gangtok. The organisation of the farmers into Milk Producers Societies was a long but rewarding process and ultimately by the beginning of the Sixth Plan the essential elements of the scheme took root. Simultaneously, the spearhead team took up the extension work for inducing farmers to take to better cattle management and in inculcating in them the worth of supplying quality milk through the societies to the central dairy plants, two of which, one at Jorethang and the other at Gangtok, was also started. These were designed originally to handle only liquid milk. The programme of civil construction was started and ultimately the Jorethang plant was commissioned in 1981 and the Gangtok plant in 1982.

The utilisation of these plants is still below capacity being less than 50 percent and hence the main target for the Seventh Plan will be to increase the procurement so as to make the plants economically viable. Operation Flood II has been extended to Sikkim in January 1982 and that will considerably increase the scope of dairy development.

The trend is encouraging and can be further improved if a more dynamic approach is adopted to the farmers organisation and extension activities. For this purpose, it is necessary to increase the confidence of the ordinary farmer in the cooperative system which in its turn envisages active participation not only at the primary level but also at the Union level by the farmers themselves.

The entire commercial viability of the programme depends upon sustenance of the Milk Union which in the past few years has shown a significant improvement as a result of a more professional approach to the whole handling and marketing liquid milk. Polypacking has contributed to increasing the sales and the commissioning of the homogenisers in 1983 enabled the Union to use recombined milk in times of shortages. During the last two to three years, the Union has also diversified its activities like the establishment of a liquid nitrogen plant which has given a big boost to the artificial insemination programme. It has also become the agency for the supply of pelleted cattle feed which is procured from outside the State and from other sister Unions and sold to the farmers at an economical price through the societies. It has also been instru-

mental in enabling the farmers to go for a fodder cultivation programme. The strategy has been to make the Milk collection centres focal points for the farmers to get all their requirements for their herds of cattle including first aid kits, facilities for vaccinating animals etc. As a matter of fact, the Secretaries of the societies are being trained to do vaccination job at the rate of Re. 1/- per vaccination for large animals and 50 P. for the smaller animals.

Seventh Plan Objectives

The objectives of the Union during the Seventh Five year plan can be broadly categorised under three heads, namely the field, the dairy plant and overall management.

It is in the field that the greatest effort should be put in because unless the large number of dairy farmers of the State get involved in the system there is no potential for growth. The endeavour of the Union will therefore be to organise at least 100 more societies and in each of these societies to create the needed facilities particularly the installation of artificial insemination facilities. Some of the societies which are of grade 'C' will be helped to progressively become 'B' & 'A' grades. The societies, which can survive only through active participation of the farmer members, will be helped to have better managerial input and thereby to increase the knowledge of farmers in better animal husbandry management. Since the major programme of the Animal Husbandry Department in relation to cattle development involves cross breeding and since the mortality rate of cross bred cows is on the high side, the basic preventive measure that has to be followed by the farmers like vaccination will be insisted upon through the medium of the societies. Wherever possible training facilities will also be provided to all the members so that they have a complete exposure to modern techniques of cattle management.

While the strength of the Union lies in the basic soundness of the societies the main dairy plants at Jorethang and Gangtok will also have to be improved upon by following a package of practices, the main ingredients of which would be to increase the utilisation capacity, to increase the productivity of the employees and to streamline the administrative system by the introduction of modern management methods like MIS. Apart from liquid milk, the plant will also be geared towards the production of greater value added products like butter and ghee.

As far as the overall management is concerned, the strategy would be to reach a level of operations which would make the Union viable and not dependent upon Government support. For this purpose, there should be a conceptual change both in relation to the commercial operations and the input programme. As far as the farmer is concerned, the activities will mainly be concerned with the sale of milk and milk products at a cost which will be favourable to the union to meet its cost of procurement, processing, marketing and administrative overheads and which will, at the same time, be within the reach of the consumers. A separate marketing cell will accordingly be created for the purpose. As far as the input programme is concerned, they can be further divided into milk co-operatives and animal health and cattle development programmes. All these will have to go hand in hand if any degree of success is to be anticipated.

The operational aspect is based on the presumption that there will be a continuous use of reconstituted milk. The level of output should be atleast 12,000 litres per day. Support to the Union to wipe out its earlier losses will also be required during the Seventh Plan period so that ultimately it can be a

self-reliant unit. Some amount of Government support is also required for adding to the capital structures like cattle feed godowns and so on. Regarding the technical input programme the items that constitute these are artificial insemination, vaccination programme, animal health, animal husbandry, fodder development, cattle feed, extension service, audit cell and MIS.

The Union will be responsible for dairy development in three districts excluding North. The latter could not be included in the programme of the Union because of its distance and the operating difficulties which are aggravated on account of the low levels of collection. This district is however covered by a smaller programme being implemented by the department. Milk collection through centres is being handled by the department and the quantity collected is processed and given to the ICDS under the nutrition programme.

Financial Dimension

An outlay of Rs. 11 crores is proposed for the various schemes in Animal Husbandry and Dairy development.

ANIMAL HUSBANDRY

GN 2
(in lakhs)

Name of the scheme/ Projects	Sixth Five Year Plan (1980-85) Agreed outlay.	1980-83 Actual Exp.	1983-84 Actual Exp.	1984-85		Seventh Plan 1985-90		1985-86	
				Appd. Out- lay	Anti. Expen- diture	Prop. Outlay	of which Capital content	Proposed Outlay	of which Capital content
1	2	3	4	5	6	7	8	9	10
Direction/Administra- tion.	7.00	3.89	2.65	3.50	3.50	9.00	—	2.00	—
Veterinary Education & Research	12.00	5.70	2.53	3.50	3.50	25.00	—	3.50	—
Veterinary Service & Animal Health	90.00	25.28	28.75	31.35	31.35	215.00	75.00	38.00	12.00
Livestock Survey and investigation	8.00	6.52	2.15	4.50	4.50	20.00	—	3.00	—
Cattle Development	80.00	49.03	26.87	26.00	26.00	230.00	30.00	35.00	5.00
Poultry Development	34.00	21.02	10.53	14.00	14.00	150.00	10.00	21.00	3.00
Piggery Development	78.00	15.71	9.24	10.85	10.85	130.00	10.00	17.50	1.00
Sheep and Goat Deve- lopment	22.00	12.40	3.37	7.80	7.80	50.00	15.00	9.00	3.00
Other Livestock Development	27.00	12.50	0.97	1.00	1.00	17.00	7.00	2.00	1.00
Feed and fodder Deve- lopment	19.00	15.20	10.71	13.00	13.00	105.00	17.00	18.00	8.00
I. C. A. R.	15.00	6.55	3.49	3.50	3.50	37.00	—	7.00	—
Slaughter House and assistance to SLDC	20.00	5.00	3.88	5.00	5.00	30.00	25.00	7.00	5.00
Loans and other Development	13.00	9.40	—	—	—	—	—	—	—
Dairy Development	75.00	49.97	8.90	21.00	21.00	75.00	10.00	13.00	2.00
Veterinary Research	—	—	—	—	—	7.00	1.00	1.00	—
	500.00	250.35	114.00	145.00	145.00	1100.00	200.00	177.00	40.00

ANIMAL HUSBANDRY

GN 3
(in lakhs)

Item	Unit	Sixth Five Year Plan	1980-82 Achieve- ment	1983-84 Achieve- ment	1984-85 Tar- get	Antici- pated Achieve- ment	Sevength Plan (1985-90) Target proposed	1985-86 Target proposed
1	2	3	4	5	6	7	8	9
Animal Husbandry								
& Dairy Products :								
i) Milk	'000 tonnes	22.4	19	19.60	20.20	20.20	27.00	21.50
ii) Eggs	millions	4.50	3.50	3.90	4.40	4.30	6.30	4.64
iii) Wool Production	lakh kgs.	0.24	0.24	0.24	0.245	0.245	0.30	0.25
Animal Husbandry Programmes :								
i) Number of frozen Semen (Bull) Stations	Nos.	1	—	—	—	—	1	—
ii) Number of inseminations performed with exotic Bull semen per annum	in lakhs	0.03	0.03	0.05	0.02	0.02	0.30	0.02
iii) Establishment of sheep Breeding farms	nos.	3	3	3	3	3	3	3
iv) Sheep and wool Extention Centres/ Goat farms	nos.	6	4	4	4	4	5	5
v) Intensive Egg and Poultry production cum-marketing Centres	nos.	1	—	—	1	—	1	—
vi) Establishment of fodder seed production farms	nos.	3	1	2	2	2	3	1
vii) Veterinery Hos-pitals	nos.	7	7	7	7	7	3	1
viii) Veterinery Dis-pensaries	nos.	25	25	25	25	25	nil	nil
ix) Stockmen Centres	nos.	40	9	14	22	20	42	7
Dairy programme :								
i) Fluid milk plants in operation	nos.	1	1	1	2	2	nil	nil
ii) Milk Product factories including Creameries in operation	nos.	—	—	—	—	—	1	—
iii) Dairy Cooperative Unions	nos.	1	—	—	—	—	1	—

FISHERIES

Review

Although a hilly State the extensive labyrinth of fresh water streams, rivers and lakes makes Sikkim an ideal place for inland fisheries development. The State has the advantage of very high altitudes and mid altitudes as a result of which the varieties of fish that can be grown and propagated are wide and varying. So far the effort in the State has been mainly to develop trout among the high altitude varieties and carp among the lower altitude varieties. The State did not have a fishery infrastructure till 1976. Thereafter a unit which functioned as an adjunct to the Forest Department started functioning and initially confined itself to two aspects namely the conservation of existing riverine fish and the building up of an infrastructure meant for the purpose of developing the potential for propagation of high value species. As far as the former was concerned the accent was essentially on preventing poaching and in formulating a rigorous system of licensing so that indiscriminate fishing depleting the stocks could be avoided. In this context, the department took special care to conserve a variety of fish known as Mahseer which is popularly known as the King of sporting fishes. The extensive use of explosives particularly in river banks has endangered these species and consequently in conjunction with the Government of West Bengal a plan of action to conserve and propagate Mahseer was drawn up. This also involved captive breeding techniques.

During the Sixth plan considerable emphasis was placed on strengthening the manpower within the fisheries wing of the Forest Department not only for the purpose of injecting technical knowhow but more so for introducing an effective system of patrolling and apprehending unauthorised fisherman indulging in poaching. The rivers of the State being in difficult terrain and scope for poaching being large it became necessary to construct fishery guards' office cum quarters in different localities where the appointed personnel were given powers to apprehend and take to task poachers.

This major work undertaken during the 6th plan was to build rearing units both for trout and mirror carp. The trout farm at Memoitso was the main farm for seed production of brown trout. Similar units were also started at Uttarey and Yoksom. At Yoksom the production of rainbow trout seed was also attempted but the initial experiments were not successful. The reason for failure is being investigated and experiments will be repeated because the propagation of rainbow trout is a matter of considerable importance.

The carp variety was more successful and in places like Soreng, Gyalzing and Gangtok the major varieties of carp have had an encouraging growth. During the Sixth plan, a scheme of providing loans to individual farmers enabling them to construct fish ponds and raise, particularly the carp variety, was also undertaken as a promotional cum-expansion scheme.

Seventh Plan

The main objectives in the Seventh plan will be to consolidate the beginnings made in the previous years both for trout and carp varieties. Besides the development and propagation of these valuable species a major objective will be to pursue and strengthen the conservation policy for which purpose the infrastructure for patrolling and taking punitive action against poachers will be intensified.

As far as trout is concerned, the strategy will be to produce the seed in the mother rearing units and to rear them up to the stage of maturation and then release them into the riverine system including the high altitude lakes. The three units at Memoitso, Yoksom and Uttarey will be accordingly further developed providing the needed infrastructure for making use of even the marshy land surrounding the existing ponds. Rainbow trout being more valuable in terms of species, the needed expertise to develop this variety of fish will be obtained and other places like Dikiling in East district and Sribadam in West district will also be considered for purposes of developing and propagating rainbow trout.

Since the warmer regions of the State are more thickly inhabited, it is comparatively easier to develop the varieties of fish which grow well in these regions. The carp varieties will accordingly be propagated by a more extensive system of making use of marshy areas, where such varieties thrive in abundance. As integrated fish farming system with animal husbandry has got good scope as many people as possible will be given the needed loans and other facilities for growing fish within the farms. This is not only a promotional cum expansion scheme but is also meant for the purpose of providing more nutritious food.

For a larger coverage of the fisheries plans which essentially include conservation and propagation, the organisational infrastructure will be duly strengthened providing the needed equipments, accommodation facilities and manpower. Research, education and training being part of the development of manpower infrastructure, opportunities for sending out people to outside institutions, particularly for studying methods of habitat management and captive breeding will be intensified. Full fledged laboratories and an aquarium will be set up as an adjunct to the Fisheries office in Gangtok where literature on fish suitable for the Sikkim environment will be made available.

Financial Dimension

To sustain the various programmes an amount of Rs. 120 lakhs is provided for fisheries in the 7th plan.

FISHERIES

GN 2

(Rs. in lakhs)

Name of the Scheme/ Projects	Sixth Five year Plan (1980-85) Agreed outlay.	1980-83 Actual expendi- ture.	1983-84 Actual expendi- ture.	1984-85		Seventh Plan (1985-90)		1985-86	
				Appd. Out lay	Anti. Expen- diture.	Proposed Outlay	of which Capital content	proposed Outlay.	of which Capital content.
1	2	3	4	5	6	7	8	9	10
1. Direction & Administration	6.00	1.22	0.89	1.00	1.00	5.00	—	0.30	—
2. Education & Training	2.00	0.86	0.35	0.50	0.50	2.00	—	0.30	—
3. Research and Survey	1.00	0.51	0.03	0.15	0.15	1.00	—	0.20	—
4. Trout Fish Seed production	28.00	10.24	1.79	4.50	4.50	38.00	33.00	3.10	2.00
5. Carp & Cat Fish	35.00	5.43	1.24	4.00	4.00	50.00	42.00	7.50	7.50
6. Conservation of riverine Fisheries	20.00	8.42	2.77	3.00	3.00	12.00	5.00	3.60	2.30
7. Propagation of Mahseers	4.00	—	0.11	4.80	4.80	8.00	7.00	5.00	5.00
8. Office Accommodation	—	11.00	2.00	1.05	1.05	4.00	4.00	—	—
9. Fish culture	4.00	1.65	1.00	1.00	1.00	—	—	—	—
	100.00	39.33	10.21	20.00	20.00	120.00	91.00	20.00	16.80

FISHERIES

GN 3

(Rs. in lakhs)

Item	Unit	Sixth Five Year Plan	1980-82 Achieve- ment	1983-84 Achieve- ment	1984-85 Tar- get	Antici- pated Achieve- ment	Seventh Plan (1985-90) Target proposed	1985-86 Target proposed
1	2	3	4	5	6	7	8	9
i) Fish Production :								
a) Inland	'000 tonnes (cumulative)	70	50	60	70	70	100	90
ii) Mechanised Boats	Nos.	—	—	1	1	1	3	2
iii) Fish Seed Production :								
a) Fry	Million (Nos.)	0.50	100	1.20	1.50	1.50	2.50	1.75
b) Fingerlings	" "	—	—	—	—	0.50	0.10	0.06
c) Fish Seed Farms	Nos.	5	3	4	4	4	9	6
d) Nursery Area	hactare	1.00	0.60	0.80	1.5	1.00	3.00	1.50

Forest

Introduction

The Himalayas have always held a deep fascination for foresters all over the world because of the varied nature of the flora and fauna found there. Sikkim, a State entirely within the Himalayas has very large area under forests ranging from tropical to temperate and alpine zones. The forests of the state are a paradise for botanists not only on account of the varieties of trees but more so because of the flora in the form of orchids and other rare varieties which grow in nature's own beauty.

Conservation of the forest wealth of the country occupies a place of paramount importance in the National Plan because all over the world the deleterious effects of destroying forests have caught the imagination of conservationists. It has been conclusively established that destruction of trees by indiscriminate felling, poaching of wild animals in their natural habitats and destroying the environment have caused a serious imbalance resulting in silting of rivers and destroying nature's balance. The need to preserve forests and to improve upon them is therefore one of the vital ingredients of the current 20 point programme wherein predetermined targets for tree plantation are laid down from year to year.

Apart from the plantation programmes the development of minor forest produce particularly medicinal herbs is also an important adjunct to forestry development because a large number of villagers look to the forests for their economic well being. Under such circumstances the Forest Department has to evolve a pragmatic policy of blending the planting programmes with optimum exploitation of forest wealth for economic upliftment. Many of our people even today depend on timber for their energy requirements but indiscriminate felling could cause serious hazards. A properly constituted working plan is therefore an absolute necessity because if there is no relationship between the plantation targets and that of clear felling, denudation would be the inexorable result.

Review

The Forest Department of the State has always given importance to the conservation aspect and during the Sixth Plan 4024 hectares will have been planted under the various schemes like departmental plantation fuel wood plantation and so on. The survival percentage in the State is fairly satisfactory but can be improved by providing fencing in appropriate places. The need to sustain nurseries for supply of seedlings has also been well established and there is no denying the fact that the involvement of the people is also a contributory factor to the overall maintenance of the forest environment. The period of the Sixth Plan can well be considered a watershed in forestry management. Plantation programmes were carried out vigorously. Schools, Panchayats and other institutional agencies were given specific roles. Observance of special days like World Forestry days, and Wild Life Week in different parts of the State created an awareness among the population about the need to preserve forests. Protests from Panchayats on the dangers of mass felling were an index to the peoples' involvement. Social Forestry and fuel wood plantation schemes particularly caught the eye. Better mechanical equipments like cranes, power saws and winches helped in scientific exploitation. Survey and demarcation of forest areas, undertaken on a systematic basis contributed to the overall improvement in management. Last but not the least was the tremendous boost given to the wild life heritage of the State. The declaration of a vast area in the high altitudes of the State as a National Park and the well organised plan of action to nullify the diabolic intentions of poachers, particularly of musk deer were steps in the arm for ecologists and environmentalists. The progress achieved in the 6th Plan is encouraging enough to venture into wider spheres of activity not to speak of consolidating the base work.

The main objectives of the Seventh Plan would thus be ;

- (a) to expand the plantation programme by afforesting denuded areas both with quick growing and valuable species ;
- (b) to preserve and protect valuable species by improving conservation methods ;
- (c) to exploit forest wealth through the evolution of a scientific system of exploitation wherein the demands of the people would be matched by a system of preservation; and
- (d) to protect, preserve and propagate wild life species particularly in the higher ranges.

Strategy

The conservation strategy can be fulfilled only through a massive production forestry programme wherein the plantation aspect has to be given the highest importance. The identification of proper species, timely distribution and preservation after plantation would be the main parameters of production forestry.

I. PRODUCTION FORESTRY:

(a) Departmental & Degraded Forest Plantation

Plantations are to be raised for industrial purposes and for domestic needs including fuelwood. They are also to be extensively raised to maintain the ecosystem and to have ecological security. Ecological security implies conservation and scientific utilisation of basic national assets such as soil and water, flora and fauna. A well formulated forest ecosystem in which plants, animals and man co-exist in a mutually symbiotic manner, is an essential component of ecological security. In order to meet the increasing demand of households and industrial timber a target of planting 2500 hectares under departmental plantation and 2500 hectares under rehabilitation of degraded forests respectively has been proposed. The rate of plantation at present is about 650 hectares annually which has to be stepped up progressively in order to meet the ever increasing demand from industry and the rural sector. Any new plantation will require fencing, otherwise, the young plants are liable to be damaged by stray cattle as the grazing problem in the State is very acute. Fencing is fairly expensive because areas are remote and the labour and material cost tend to be very high. The fencing programme is inbuilt and is a part of the plantation programme. About 350 Kms of fencing is envisaged during the Seventh Plan.

In order to cater to the massive afforestation programme, it is also necessary to have well equipped nurseries which would be in a position to supply saplings required for covering the area proposed for plantation. As far as possible the nurseries would be located near about the plantation areas so that the transportation cost can be minimised. Creation and maintenance of nurseries being a part of the plantation programme 110 hectares of nurseries are proposed to be developed and maintained by the end of the plan period. Since the entire planting requirement cannot be met from departmental nurseries the possibility of developing nurseries through registered private growers, particularly tribals will be given due consideration. All the young plantations which have been planted year after year needs maintenance and without after care it is not possible to have complete success in the scheme for which it is proposed to maintain all plantations atleast for 3 years.

Departmental efforts will be supplemented through the Taungyadar system as in the past by the payment of family subsidy.

(b) Plantation of quick growing species

An important adjunct to the plantation programme is the plantation of fast growing species under which fuelwood plantation occupies a place of importance in the State. In Sikkim a large segment of the population depends upon fuelwood for their energy requirement since other forms of energy are limited. As a matter of fact the demand for fuelwood is currently estimated at 30 000 piles per annum for which approximately 900 hectares have to be clear felled. Since the Forest Department cannot escape the responsibility of meeting this demand, plantation of quick growing species is proposed to be undertaken along with fencing to cover nearly 1250 hectares and to have 20 hectares of nurseries for the purpose by the end of the plan period.

(c) Pasture development

Development of pastures within forest areas is essential for the purpose of controlling the grazing of cattle. Various varieties of grasses and fodder plants would be planted on a range basis for this purpose, in close co-ordination with the departments of Animal Husbandry and the Directorate of Land Use.

(d) Sericulture

The sericulture programme holds rich promise since many areas in the State have been found to be ideal for the purpose. Unfortunately the plantations have not been followed up by any initiative commercial activities and therefore the sericulture programme as such has not yet been developed as it should have been. During the plan period, it is proposed to maintain the nurseries and demonstration plots and to extend sericulture programme to potential areas in consultation with the Central Silk Board which would not only include the development of nurseries but also extensive plantations and commercial utilisation.

(e) Social Forestry & Farm Forestry

As far as social forestry is concerned great importance is being attached to it at the National level. Considerable area in the State is under what is termed as khas forests and gorucharan forests. The villagers have the traditional rights of getting trees marked for felling for their own consumption from khas forest, a practice which has sometimes resulted in over felling. Though the management of these forests has vested in the Forest Department, regeneration efforts to compensate the felling have not been adequate due to organisational and financial constraints.

The village pasture lands also cover a substantial area and are under the control of Forest Department at present. The number of livestock in the State is very high; in fact it is more than the human population. So far, hardly any activity could be taken up to improve the pasture lands. In the interest of rural economy, animal husbandry development will be of prime importance, No such development can take place without an improvement of grazing conditions and availability of fodder. The nomadic grazers are a feature of the rural setting in the State. For their sake the winter pasture land and grazing conditions have to be improved in lower altitudes alongwith summer pasture in alpine and subalpine zones.

The Forest Department has the primary responsibility of supply of construction timber, fuelwood, fodder, etc. needed in the local and State economy. Farm Forestry and extension forestry works have been

initiated in recent years. Unless the demand of these products is met by social forestry programme the pressure in reserve forests cannot be lessened. Ecologically, the State has already come to a point where a sustained effort has become obligatory to reverse the process of decimation of vegetative cover in the Himalayan slopes. It is not only in the interest of the State to take up ecological transformation, but also for the other States in the plains for whom Sikkim is the catchment of rivers bringing misery and destitution by way of floods.

Under these circumstances efforts in the State have to be intensified by adopting Centrally Sponsored Social Forestry Schemes to the private farms, marginal land, khas forests, groucharan forest and other available areas.

Resources Development & Utilisation :

(a) Timber extraction & utilisation

Forest resources have to be utilised to the optimum level without causing destruction and without converting renewable resources into non-renewable resources. The hostile terrain, inaccessibility of forests and the climatic condition in the State result in expensive logging practices. Further, the non-availability of large continuous tracts and the spatial distribution of species makes the operation more difficult. Almost every year the extraction area has to be changed. The clear felling in hill slopes in the past has amply proved that not only is the task by itself a hazardous one but it also brings about an ecological hazard.

For logging purposes equipments like logging devices, tractors, gravity ropeways etc. have to be provided. Further, a number of jeeps and trucks will also have to be made available for transportation purposes. After exploitation of the forest resources they have to be put to use either through production unit or they have to be sold at remunerative prices to private industries. Owing to the rough forest roads 4 out of 7 trucks presently owned by the Department needs replacement and this will be done during the plan period. Further, the present system of burning of charcoal in the field in pits is costly and wasteful. To avoid this it is proposed to replace the system by cast iron kilns wherever possible. With a view to keeping a fleet of trucks, tractors and jeeps always on the road and for the upkeep of the mechanical devices owned by the Department a mechanical workshop is proposed to be set up.

(b) Wood Working Centre

The Government's departmental undertaking called Wood Working Centre which produces quality furniture is an on-going concern. The Wood Working Centre at Bordang will be further expanded and converted into an integrated Centre. The possibility of diversifying its production base will be given due consideration.

(c) Communication & buildings

The exploitation of forest wealth can be best solved by providing good communication system within the forest area. 20 Km. of logging road and 100 Km. of inspection track including log bridges are proposed to be constructed within the forest area during the plan period. Besides roads, certain buildings also have to be constructed including ministerial staff quarters. Taking note of the need it

has been proposed to construct atleast 6 nos. each of Class I & II quarters, 40 nos. of Class III quarters, 50 nos. of class IV quarters and other office accommodation for forest officials in various districts,

Minor Forest Produce :

(a) The minor forest products (MFP) include grasses, fruits, leaves, barks, eludates, animal products, soil and minerals, in short all animal, vegetal and mineral products. Sikkim is rich in a number of herbs and shrubs of high medicinal value. In the absence of adequate data on actual availability of different kinds of M.F.P. the State has remained at the mercy of the exploiting agencies so far as revenue from these products is concerned. A proper inventory of M.F.P is urgently needed. The working plan Circle in the Department will be expected to undertake the inventory during the Seventh Plan period.

The present system of granting permission to collect/exploit medicinal herbs and junifer leaves and logs by the tribals of Lachen and Lachung at concessional rate and its export outside Sikkim by themselves and the contractors will be discontinued. A policy of involving village tribal co-operatives for collection and its sale outside the State by the Marketing Federation or other agencies will be evolved so that more revenue can be earned.

(b) Cardamom

Chief among the minor forest products in Sikkim is the large cardamom (*Amomum subulatum*). The Department now maintains 1315.7 hectares including the area under lease with the villagers. There is further scope of extension of areas under cardamom cultivation.

During the plan period all the leased areas are proposed to be taken over and maintained by the Department and bringing 300 hectares more under cardamom cultivation is also proposed.

With a view to undertaking all the above activities in an intensive and effective manner a Minor Forest Produce Division under the Utilization Circle is proposed to be created during the plan period.

Inventory Planning & Resource Management :

(a) Survey & Demarcation

Under this sector the main emphasis will be on survey and demarcation and settlement of forest lands. Forest areas consist of reserve forest, khas forest and gorucharan forest land. It is estimated that the boundary of khas and gorucharan extends to approximately 12,800 Kms. Unless a proper demarcation of such land is completed as early as possible, there would be no end to encroachment and consequent destruction of valuable forests. To deal with all such encroachments, a Forest Settlement Officer has been appointed and all the cases of encroachments which have been disposed off by the Forest Settlement Officer have to be demarcated and boundary pillars have to be erected.

Working Plan

For systematic planning and developing forest resources the working plan should be prepared on the basis of accurate forest data. It is proposed to develop an inventory system for this purpose division-wise wherein details of the composition of forests according to species and classes will be tabulated.

In addition, regeneration status of commercially valuable species, volume of such species according to size, class and localities, stocking for unit area, age composition and condition of the crop will also be prepared. Stock mapping of forest areas based on composition, stand density, plantation areas, fire damaged areas and land slide affected areas will also be undertaken. Brief details of the components of what are proposed in the Seventh Plan for purpose of working plan are given below :

During the seventh five year plan it is proposed to take up forest inventory in 1740 sq. Km of R. F. covering East, South & North Forest Divisions for the preparation of Division wise working plans.

For the forest inventory purposes forest areas have been classified into :

(a) Protective Forest Area

From ecological balance and environmental conservation point of view R. F. areas above 8000 ft. in broad leaved forests and above 12,000 ft. in conifer forest should be kept strictly as protection belt and in these areas only very low intensity sampling (1 to 2%) will suffice to give broad idea for forest crop composition. Total of such areas proposed for inventory will be approximately 700 Sq. Km (40% of R. F. area).

b) Production Forest Areas :

R. F. below 8000 ft. in broad leaved forest and below 12,000 ft. in conifer forest has been kept under this type. Forest inventory with systematic sampling of 10% intensity will be carried out. Total forest area for inventory under this class will be approximately 1040 Sq. Km.

Preparation of Logging Plan for Prescribed Workable Area by Management Plan

Based on the management plan inventory results and feasibility of logging operations the prescribed workable areas in each division will be earmarked for logging operation in different years to meet the requirements of urban population. It is proposed that such areas should be handed over to Utilisation Circle only after 100% enumeration and with detailed logging plan prepared by Working Plan. Total area will be 1250 hectares during five years for preparation of such plans.

Preparation of Local Volume Table for Reliable Yield Estimation :

For reliable yield estimation it is proposed that emphasis should be given on preparation of local volume table for different broad-leaved commercial species in the state. This will require felling of large number of trees. Therefore, it is proposed that this study should be linked with annual felling operations at different sites so as to save trees from felling.

Soil - Vegetation Survey :

In 1983-84 with the co-operation of soil-vegetation survey branch of FRI soil profile studies in different R.Fs of South and part of West forest division were carried out. It is proposed that Soil Survey for the entire forest area of the State is carried out and soil-vegetation map on 1,25,000 scale is prepared for knowing the correlation between various soil types and forest crop composition.

Apart from this it is proposed that soil samples of all the forest nurseries should be analysed so that recommendation could be made for application of various types of fertilisers based on nutrient deficiency.

Mapping of the Khas and Goucharan Forest on 1 : 25.000 Scale :

Survey of India has provided recent Forest maps of Sikkim (in 42 sheets with 400 copies of each) clearly depicting the Reserve Forest boundaries after taking a systematic survey. It is proposed that similar survey for Goucharan and Khas forests be taken up by Survey of India for depicting Khas and Goucharan boundaries on the same scale map for the purpose of scientific planning of Goucharan and Khas forests. Total area of Khas and Goucharan forest is 389 Sq. Km.

Sample Survey for Estimating Forest Based Needs of the Community in the State :

Systematic survey for estimation of forest based needs of the population in the State is very essential for preparing basic data for future planning.

Application of modern Remote Sensing Technique for Stock Mapping of Forest Areas :

Aerial photography and landsat imagery interpretation technique play a vital role in preparation of forest cover type maps not only in speeding up survey operations with better accuracy, but also in offering a unique way of studying various land scape features in broad perspective.

It is proposed that for landsat imagery visual interpretation as well as computer analysis (using multi-spectral digital analysis system) should be taken up for preparation of broad forest type maps with technical cooperation of India photo interpretation Institute and N.R.S.A.

For the detailed stock mapping it is proposed to indent for fresh aerial photographs from Survey of India on scale 1:25,000 for entire Sikkim.

The aerial photographs indented can also be used by Land Use & Environment department for preparation of detailed land use maps, by Agriculture department for soil survey and crop pattern study, by mines and geology department for geological survey etc.

Silviculture

One of the more important aspects of resources management is that of silviculture. At present there is only a sub-division under the working plan division. During the plan a full-fledged silviculture division is proposed to be set up. With a view to producing quality seed and to organise seed collection programmes from concentrated patches, production areas or seeds stand will be established in forest areas having vigorously growing middle age to mature crop containing trees of well developed crowns with boles. Inferior trees from such seed stand areas and its neighbourhood will be removed to prevent cross pollination from them. Apart from this, valuable species, which lie scattered, will be marked for the purpose.

Sample plots for important timber species to study the growth at regular intervals in terms of diameter, height and volume will also be established. Silviculture research nurseries for providing planting stock will form another aspect of work in the division along with experimental research plantations for the purpose of carrying out provenance trials particularly for fast growing species.

Strengthening of forestry organisation.

In order to successfully implement the forestry development programme the organisation has to be strengthened by creating special circles and divisions for the more important programme like social forestry silviculture, work plan etc. Of particular importance is the need to strengthen the planning statistics and monitoring cell of the department because adequate feed back of data is required. Suitable provision will accordingly be provided for strengthening the organisation. Organisational improvement will also consist of providing education and inservice training facilities under which forestry personnel will be sent regularly to training institutions outside the State.

Wild Life :

The need to preserve valuable species of wild life some of which are on the brink of extinction needs no special emphasis. Sikkim has several rare varieties of fauna like musk deer, blue sheep, himalayan tahr, snow leopard, red panda, serow among the animals and varieties of pheasants among the birds. The most important scheme taken up during the Sixth Plan was the development of the Kanchendzonga National Park. This area has been provided with facilities like watch towers, bunkers, check posts and bridle paths which have contributed to the decline of poaching. Apart from the Kanchendzonga National Park, the Forest Department is also maintaining a deer park at Gangtok and a small zoo at Baguwa in South Sikkim. Another alpine sanctuary has been established at Kyangnosla at an altitude of 10,000 feet with alpine forest inter laced with rhododendrons and exotic primulas forming an ideal habitat for a variety of high altitude wild animals. Another such sanctuary has also been established in North Sikkim. The Department also carried out the census of wild life which yielded basic statistics. During the Seventh Plan the Kanchendzonga National Park will be further improved by providing additional facilities and by intensifying the programmes of apprehending poachers, trap demolition and habitat management. The latter project will be extended to other areas also primarily with a view to propagating wild life. Special equipments like night binoculars and tranquilizer guns will be procured in order to help the staff of the department to pursue the activities properly. Proposals for study and research work for conservation of rare and endangered species by experimental breeding will also form an important plan activity.

Financial Dimension

In order to meet the multifarious requirements of the forestry sector a total outlay of 12 crores is proposed for the Seventh plan.

FOREST

GN 2

(Rs. in lakhs)

Name of the Scheme/ Projects	Sixth Five year Plan (1980-85) Agreed outlay.	1980-83 Actual expendi- ture.	1983-84 Actual expendi- ture.	1984-85		Seventh Plan (1985-90)		1985-86	
				Appd. Out lay	Anti. Expen- diture.	Proposed Outlay	of which Capital content	proposed Outlay.	of which Capital content.
1	2	3	4	5	6	7	8	9	10
1. Direction & Administration	25	4.41	1.80	3.00	3.00	8.00	—	0.50	—
2. Education and Training	12	6.44	2.50	3.00	3.00	15.00	—	3.00	—
3. Forest Protection	10	7.91	2.48	2.50	2.50	15.00	—	2.50	—
4. Survey of Forest Resources	5	2.19	0.75	1.00	1.00	12.00	—	3.00	—
5. Survey and Demarcation	25.00	12.20	2.71	4.00	4.00	15.00	—	3.00	—
6. Working Plan	15.00	2.68	7.59	7.50	7.50	30.00	—	9.00	—
7. Planning and Statistical Cell	10.00	2.68	1.25	1.50	1.50	8.00	—	1.00	—
8. Silviculture	—	—	—	—	—	15.00	—	2.00	—
9. Plantation	53	1.53	15.66	20.00	20.60	173.00	—	25.00	—
10. Farm Forestry	181	71.20	33.98	38.00	38.00	400.00	—	80.00	—
11. Forest Produce	45	32.96	14.71	16.50	16.50	122.00	—	17.00	—
12. Communication and building	85	46.35	7.52	15.00	15.00	95.00	—	16.00	—
13. Nurseries	35	21.60	10.84	10.30	10.30	70.00	—	11.00	—
14. Extension Forestry	6	5.32	1.50	1.50	1.50	15.00	—	2.00	—
15. Cultural operation	18	11.90	6.00	4.00	4.00	20.00	—	4.00	—
16. Amenities to Taungyadars	5	2.55	1.00	1.00	1.00	6.00	—	1.00	—
17. Public Relation Unit	2	1.25	0.20	0.20	0.20	1.00	—	—	—
18. Wild Life	38.00	35.92	16.19	25.00	25.00	180.00	—	30.00	—
	570.00	299.09	126.68	154.00	154.00	1200.00	—	210.00	—

FOREST

GN 3

(Rs. in lakhs)

Sl. No.	Item	Code No.	Unit	Sixth Five Year Plan (1980-85) Target	1980-83 Achievement	1983-84 Achievement	1984-85 Target	Anti-cipated Ach.	Seventh Plan (1985-90) Target proposed	1985-86 Target proposed
1	2	3	4	5	6	7	8	9	10	11
1.	Departmental Plan- tation			1723	1083	290	350	385	2500	400
2.	Pulpwood Plantation			699	450	149	100	100	1250	150
3.	Rehabilitation of Degraded Forests			844.5	417	227.5	200	200	2500	300
4.	Fuelwood C. S. S.			1177.5	534	243.5	400	400	3500	500
5.	Cultural Operation			3000	—	—	1300	1300	3500	1500

Special Rural Development

Introduction

Alleviation of poverty has been the corner stone of economic planning in the country. The orientation in the 7th plan being jobs, more food and productivity it is obvious that the need to remove abject poverty continues to hold a place of considerable importance in the planning system. Among the various schemes initiated by the Central and State Governments the IRDP or the Integrated Rural Development Programme TRYSEM or Training Rural Youth for Self Employment and NREP or the National Rural Employment Programme are the most popular and important schemes coming within the ambit of special rural development. Out of these, the IRDP perhaps occupies a more important place because the philosophy behind the programme is that through a well organised system of credit mobilisation and extension the families who are today below the poverty line are offered means of economic upliftment on a sustained and durable basis. The schemes cover basically Agriculture, Animal Husbandry and tiny Industries, in all of which, participation of not only the individual but also the financing institution is of crucial importance.

As far as Sikkim is concerned the level of poverty is perhaps not as abysmal as in other parts of the country. Nonetheless the families who are today eking out their livelihood at bare sustenance levels look forward to a better and meaningful life for which the IRDP is the best answer. In Sikkim, mixed farming has come to stay and therefore any programme will have to be formulated in such a way that there is an admixture of various sectoral programmes. Through the auspices of the SRDA a number of schemes have been implemented during the 6th plan. In the Seventh plan the scope will be widened and the number of agencies will be multiplied by decentralisation at the district and lower levels. The NREP, unlike the IRDP has a different scope and is essentially meant for providing seasonal employment opportunities but with the assumption that whatever work is undertaken will result in the creation of durable community assets. The scheme has been very popular because there is wholehearted involvement of the people need based assets are created and the system consists of paying part of the wages in the form of rice which has proved to be a great incentive. The scope of the NREP has been further widened with the addition of a parallel set of schemes called the RLEGP or Rural Land Less Employment Guarantee Programme, introduced for the first time in the year 1983-84. It is expected that the scheme will be continued as a centrally sponsored item in the Seventh Plan..

Details of the schemes in the context of the Seventh Plan follow :

IRDP

The Integrated Rural Development Programme (IRDP) was launched prior to the sixth plan with the objective of removing rural poverty. Families below the poverty line were defined as those having less than 5 acres of land and Rs. 3500/- annual income identified through household surveys of each village. Over 50,000 families comprising 84% of the total population of Sikkim live in rural areas and though poverty is not as acute as in some areas of the plains, it is estimated that about 40% of the rural population i. e. over 20,000 families are below the poverty line with concentration in dry pockets where agricultural production is low.

Under the programme, these families are assisted in taking up viable economic activities with credit needs being met by banks, co-operative societies etc. Subsidies are released on the loans. Assistance is also given for infrastructure creation and to supportive institutions. Under the programme of Training of Rural Youth for Self-employment (TRYSEM), selected youth from target group families are imparted training in skills of economic

value and encouraged to set up self-employment ventures. There is one Rural Development Agency for the whole State and the districts are treated as blocks. There are 4 district offices with one Project Assistant and one Project Supervisor under the DDOs. 20 Rural Development Workers are posted at important places and there is a Project Officer and Assistant Project Officer at Gangtok to oversee the schemes. An A.P.O. and 2 field staff have also been kept for implementing the programme for Development of Women & Children in Rural Areas (DWCRA),

During the 6th plan, achievements are as follows :

Key Indicators	1980-81	1981-82	1982-83	1983-84	1984-85 (Anticipated)	Total
1. Expenditure (Rs. in lakh)	3.05	8.95	27.08	23.79	30.00	92.87
2. Families assisted (No.)	498	262	3158	2656	3000	9574
3. Credit mobilised (Rs. in lakhs)	NA	NA	15.39	36.98	50.00	102.37
4. Persons trained (No.)	NA	56	135	240	400	831

Assistance was also provided to primary co-operative societies and a number of schemes to strengthen infrastructural facilities to the weaker sections were taken up. During the period, 16 branches of nationalised banks have been established in different localities (Central Bank of India, SBI and UCO Bank) to ensure credit coverage of as many villages as possible

During the seventh plan, it is expected that the DRDA will be established in Sikkim. The 4 districts are proposed to be divided into 2 blocks each and a modest sized DRDA will be set up in each district on the national model with the Collector as the Chairman of the Agency. There will be a cell in the Rural Development Department at the State level to co-ordinate their functioning and adopt central guidelines which are suitable to the State. An allocation of Rs. 320 lakhs is expected in order to assist at least 24,000 families below the poverty lines as follows :

Scheme Sector	ANNUAL				7th PLAN			
	District		State		District		State	
	Alloca- tion	No.	Alloca- tion	No.	Alloca- tion	No.	Alloca- tion	No.
IRD Subsidies	8		32		40		160	
TRYSEM	3		12		15		60	
DWCRA	1		4		5		20	
Other Schemes	2		8		10		40	
Establishment	2		8		10		40	
Total	16	1200	64	4800	80	6000	320	24,000

Allocation : Rupees In lakhs.

No. : Number families assisted.

During the period the credit arrangement will be streamlined and it is expected that atleast Rs. 500 lakhs credit will be channelised to the IRDP beneficiaries who will be provided with subsidised loans for obtaining assets and inputs for agriculture, animal husbandry and small business etc. Identification of all the families below poverty line will be completed in the early part of the plan and issue of Vikas Patrikas (Identity cum monitoring cards) will be issued to all identified families. The Vikas Patrika will in fact be the main medium through which the scheme will be monitored.

Training of rural youth is an integral part of the overall strategy to provide meaningful benefits to the families below the poverty line. The philosophy behind training is that basic skills are imparted by selected master craftsmen in various centres through a system under which the trainees, as well as the trainer, is given a subsidy and raw material equipment required for organising the training programme are supplied by the Government. At present, training is being imparted through temporary centres set up with the help of the Directorate of Industries and the SRDA with the involvement of voluntary organisations. To some extent, the training facilities available through ITI and GICI are also made use of.

During the Seventh plan an endeavour would be made to organise a fullfledged rural artisan training centre so that the more popular type of training schemes can be organised in these centres.

One of the problems encountered under TRYSEM is that of marketing. The State, being small and located in a sensitive border area, does not have an established marketing network. The beneficiaries under TRYSEM are accordingly facing a serious problem to market their products as a result of which it is difficult to sustain the enthusiasm and the tempo of training schemes. The scope for marketing products particularly garments, knitted material and so on is considerable particularly if institutional sources of buying are tapped judiciously. Under the circumstances, the approach in the Seventh plan would be to keep a constant liaison with the beneficiaries and after helping them to set up their own production units, marketing aspect will be improved by tying it up with the marketing cooperatives sought to be established through the Industries Department and the Marketing Federation of the State. Supportive services like technical guidance, formulation of self-employment schemes, procurement of the needed machinery and equipments will also be integrated along with the main scheme.

An illustrative list of the type of training schemes under TRYSEM is given below :

- | | |
|----------------------------|-------------------------|
| 1. Handloom Weaving. | 7. Carpentry. |
| 2. Bee Keeping, | 8. Watch repair. |
| 3. Radio repair. | 9. Carpet Weaving. |
| 4. Plumbing. | 10. Wood Work. |
| 5. Knitting and Tailoring. | 11. Lepch Weaving. |
| 6. Cutting and Tailoring. | 12. Traditional Crafts. |

During the Seventh plan the scope of training will be further widened by including electronics, particularly T.V. repair and servicing, electrical gadget repairs, motor car repair etc.

For the National Rural Employment Programme (NREP) and the Rural Landless Employment Guarantee Progra-

Some the basic objectives are :

1. Generation of additional gainful employment for the unemployed and under-employed persons both men & women who are poorest of the poor in the rural areas.
2. Creation of durable productive community assets for strengthening the rural infrastructure which will lead to rapid growth of the rural economy and steady rise in the income levels of the rural poor.
3. Improvement of nutritional status and the living standards of the rural poor.

In the 7th plan, it is proposed to consolidate the existing structures constructed during 81-85'. The village roads constructed will be further improved upon. Wherever feasible, the roads will be broadened to make them jeepable. The building structures will be reinforced whenever necessary. Plantation will be given the highest importance with due stress being laid on fencing and plantation in the catchment areas. With the decentralisation of the planning process, it is hoped that new schemes will be taken up in areas, not covered during the 6th Plan period.

The National Rural Employment Programme was extended to Sikkim in the year 1980-81', i. e. the beginning of the Sixth Plan period. The Programme was started with a handful of schemes like construction of playgrounds, village roads and a few creches. In subsequent years the programme gained momentum and there was diversification. As of now, the State has been taking up a wide range of schemes, viz. social forestry, minor irrigation, school buildings, gobar gas plants, community centres, land development, water supplies and I. C. D. S. sheds, besides the construction of rural link roads which have gone a long way to satisfy the employment and physical needs of the villagers residing in the remote corners of the State

Sikkim being a hilly state, construction of motorable roads has its own constraints. As such, construction of inter-village pedestrian roads is the only viable alternative to cope up with the problem of communication. As a result there is heavy demand for such roads even today.

Of late, stress has been laid on afforestation programmes and other programmes relating to the needs of the SC/ST community in the State. Attention is also being paid to see that the assets being created are made durable. This objective will be kept in mind during the 7th Plan.

4. The following is the table showing yearwise expenditure on various schemes and mandays created during the Sixth Plan period.

Year	1980-81	81-82	82-83	83-84	84-85	Total
Total Expenditure	3.23	9.43	22.18	34.38	40.00	109.22
Total Mandays	0.37	1.22	2.26	2.36	2.50	8.71

5. A summary of schemes taken up during the Sixth Plan is presented in the table given below :

Sl. No.	Types of schemes implemented	Achievement					Total
		80-81	81-82	82-83	83-84	84-85	
1.	Village roads (in Kms.)	16	144.50	129.80	121.30	135	546.60
2.	Playgrounds (No.)	29	28.	6	17	30	110
3.	Social Forestry (Plants)	—	14,000	91,921	61,281	65,000	2,32,602
4.	Irrigation (Hects)	—	8	0.05	126	20	154.05
5.	School buildings (No.)	—	1	—	12	30	43
6.	Gobar Gas Plants (No.)	—	6	13	1	—	20
7.	Community Centres(No.)	1	3	1	1	5	11
8.	Creche (No.)	3	6	—	—	2	11
9.	Land Dev. (Hects)	—	8	—	—	—	8
10.	Drinking Water (No.)	—	—	—	1	5	6
11.	I.C.D.S. Sheds (No.)	—	—	—	3	10	13
12.	Work benefiting SC/ST						
a)	Community Centre (No.)	—	—	—	3	2	5
b)	Link Roads (Km)	—	—	—	42.84	50	92.84
c)	Playgrounds (No.)	—	—	—	2	10	12
d)	Water Supply (No.)	—	—	—	3	2	5

Strategy for 7th Plan :

1. Taking the National objectives of job orientation schemes in view, it is proposed to give priority to labour intensive schemes in the State. The scheme will be prepared Gram Panchayat wise.

Though there is distribution of 1 kg. rice per day per person to the NREP/RLEGP labourers at a subsidised rate, this does not have the desired impact on the nutritional status of the individuals.

2. To attack the nutritional problems of the villagers, it is proposed to create i) Vegetable gardens, ii) Fruit-orchards and iii) Forest nurseries in each gram panchayat. The land will be taken as donation from

the willing members of the panchayat block. This land will be fenced and developed for cultivation purpose with NRFP/RLEGP funds, earmarking areas separately for the three activities.

i) Vegetable Gardens :

After the land is ready for cultivation purposes, the local women's organisation or the village workers will be approached for providing labourers. They will cultivate the land by sowing seasonal vegetables and tending and caring for the plants. The agriculture department will provide the seedlings and technical guidance.

ii) Help of the local students to cultivate the plants will also be solicited. This activity can be taken up by the students under S.U.P.W. which forms a compulsory part of their curriculum.

iii) The products of the garden will be provided free of cost to schools of the gram panchayats as part of the mid-day meal. The surplus products can be sold in the local market or can be taken up by the agriculture department for sale elsewhere in the state if local sale poses problem. The activities other than development and fencing of land and payment of daily wages to the labourers will be handled by the Nutrition department of the State Government.

iv) As a pilot project, it is proposed to start this activity in the three IDP centres of south Sikkim Kitam, Turung, and Rabong, where there are community centres and fenced land constructed with UNICEF aid.

3(i) Fruit Orchards :

This activity will also be taken up in the same manner. Good variety of seedlings will be procured from agriculture department and planted under their technical supervision. Once the plantation is done, the labourers will be reduced and only a minimum strength will tend the plants. Here again the products can go to the school for mid-day meal programme and the surplus can go to the local market and to other outlets.

4(i) Forest Nursery/Vegetable Seedlings Nursery :

Creation of forest nursery has become of great importance to the Rural development department because expenditure of 10% funds on plantation is compulsory. To augment the forest department's efforts, it is felt that the Government may create forest nurseries where the seeds and technical guidance will be provided by Forest department officials. As tending the seeds is a year round job, it will provide employment to the village men and women.

(ii) All villages have a group of youth who are semi educated. Since they have some educational back ground, they feel a little elevated and refuse to till the soil. On the other hand, they do not have sufficient education to qualify them for white collared jobs. It is proposed to handle at least a small percentage of this problematic group by involving them in the NREP schemes as supervisors. They can keep the daily attendance, assist in payment of wages, procure rice for distribution from the godowns and assist the labourers in sale and distribution of their products.

5 (i) Physical Targets :

It is assumed that the cultivators and agriculture labourers constitute the target group for NREP/RLEGP who will derive the benefit of getting employed under the programme. As per IRD statistics there are 16,000 families living below the poverty line.

(ii) During the Sixth Plan period it has been found that only 18% of the target group gained employment opportunities. Of course, in the initial years of the Sixth Plan, the programme had not really been able to take off and the number of activities undertaken was quite meagre.

(iii) During the Seventh Plan the strategy will be to achieve employment, for 50% of the target group which will work out to 40.00 lakhs mandays over the five year duration.

(iv) The yearwise break up for NREP is shown in the table given below :

Year	Outlay (in lakhs)	Mandays (in lakhs)
(1)	(2)	(3)
1985-86	60	4.00
1986-87	70	4.20
1987-88	80	4.60
1988-89	100	5.20
1989-90	80	5.00
1985-89	390	23.00

(v) Under RLEGP the position will be as follows :

YEAR	OUTLAY (In lakhs)	MANDAYS (in lakhs)
85-86	55	3.00
86-87	60	3.30
87-88	75	3.60
88-89	80	4.20
89-90	70	3.90
	340	18.00

The calculation of mandays has been done on the following analysis both for NREP, and RLEGP taking Rs. 1.00 lakh as the allocated amount.

The amount available for wages 60,000/- with 60 : 40 Wage-material ratio.

Apportioning 60,000 to skilled and unskilled labourers in 1:2 ratio.

Funds available for skilled labours 20,000/-

“ “ “ unskilled “ 40,000/-

Mandays for skilled labours @ 16/- is Rs. 1250/-

“ “ unskilled “ @ 9/- is Rs. 4440/-

Total 5690 mandays for Rs. 1,00 lakh.

Say. 6000 mandays.

Financial Dimension

An amount of Rs. 530 lakhs is proposed for special rural development for the seventh plan.

ANNEXURE

Sl. No.	I T E M S	A C H I E V M E N T S				
		80-81	81-82	82-83	83-84	84-85
1.	N.R.E.P					
	Details of Assets Created					
1.	Social forestry.					
	a) Area Covered in (Hects)					
	b. Number of trees planted (Nos)	14,400	148 (Hects)	32.35		
2.	Work directly benefiting SCs/STs (Nos)					
	a) Development of House sites- (Community Centres)	—	—	3 Nos.		
	b) Construction of group houses (Roads)	—	5 (Hects)	42.84 Kms.		
	c) Others work- (Play Grounds)	—	—	2 Nos.		
3.	Construction of Village tanks, water supply schemes, water wells etc.	—	—	1 No		
4.	Minor Irrigation and field channels etc.	9	5 (Hects)	126 (Hects)		
5.	Rural Roads subjects to standard and specification (KMS)	144.50 (Kms)	129.8(Kms)	121.30 (Kms)		
6.	a. Schools Buildings.	50 Nos	24(Nos)	12 (Nos)		
	b. Play Grounds.	28 "	6 "	17 "		
	c. Gobar Gas Plant.	6 "	3 "	1 "		
	d. Community Centres.	3 "	1 "	3 "		
7.	Land Development					
	Afforestation (Conversion) of Forest in cultivated land.	8 (Hects)	—	—		
8.	Construction of creach.	6 (Nos)	—	1 (No)		

SPECIAL RURAL DEVELOPMENT

GN 2

(Rs. in lakhs)

Name of the scheme/ Projects	Sixth Five Year Plan (1980-85) Agreed outlay.	1980-83 Actual Exp.	1983-84 Actual Exp.	1984-85		Prop. Outlay	Seventh Plan 1985-90 of which Capital content	Proposed Outlay	1985-86 of which Capital content
1	2	3	4	Appd. Out- lay	Anti. Expen- diture	7	8	9	10
I. R. D. P	65.00	33.22	16.00	16.00	16.00	160.00	—	32.00	—
N. R. E. P.	90.00	17.85	34.38	36.00	36.00	370.00	—	38.00	—
	155.00	51.07	50.38	52.00	52.00	530.00	—	70.00	—

SPECIAL RURAL DEVELOPMENT

GN 3

(Rs. in lakhs)

Item	Unit	Sixth Five Year Plan	1980-82 Achievement	1983-84 Achievement	1984-85 Target	Anticipated Achievement	Seventh Plan (1985-90) Target proposed	1985-86 Target proposed
1	2	3	4	5	6	7	8	9
1. I.R.D.P.								
i) Beneficiaries identified	Nos. cummulative)	—	2000	10,000	10,000	10,000	20,000	12,000
ii) Beneficiaries assisted	Nos.	12,000	3,918	2,656	2400	3000	24,000	4800
iii) Scheduled Castes/Scheduled Tribe Beneficiaries	Nos.	3,600	—	784	720	900	7200	1440
iv) Youths Trained under TRYSEM	Nos.	1000	191	240	160	400	1600	320
v) Scheme for strengthening of Block Administration:								
a) Nos. of posts sanctioned	Nos.	58	32	13	13	13	20	20
b) Nos. of posts filled	Nos.	43	32	13	2	13	20	20
vi) Development of Women and Children in Rural Areas (DWCRA) :								
Nos. of groups organised/strengthened	Nos.	10	—	4	6	6	20	5
2. N.R.E.P.								
i) Employment generated	lakh (mandays)	6.75	3.40	3.00	3.50	3.50	14.00	2.50
ii) Details of physical assets Created								

(AS PER ANNEXURE)

Panchayats

It was only after the Sikkim Panchayat Act was passed in 1982 that the system of panchayat administration received some amount of impetus. Elections to 151 gram panchayats were held in November 1983 under this Act. Besides 151 gram panchayats, the areas of Lachen and Lachung are also considered as panchayat areas where a traditional system of the people themselves electing a Papon as the headman continues to prevail. Although the panchayat elections have been held, these grass root level bodies have not been given any real authority to plan and implement local development works within their jurisdiction which is primarily on account of the fact that they do not have any resources of their own.

During the 6th plan period 50 panchayat ghars were constructed to enable these institutions to organise their activities in a planned manner with adequate facilities for keeping their records. The remaining 103 panchayats are also proposed to be provided with panchayat ghars in a phased manner. The number of such buildings that will ultimately be constructed will depend upon the quantum of resources allotted for the purpose. Besides the gram panchayats, the panchayat Act also envisages the constitution of zilla panchayats which are apex bodies responsible for supervising and co-ordinating the activities in the gram panchayats. The zilla panchayats have not yet been set up but it is likely that they would become functional during the 7th Plan and for this separate buildings will have to be constructed.

The main aspect of consideration will be to devolve duties and responsibilities on both the zilla and gram panchayats. They will be called upon to reflect the needs of the people and to try and get popular schemes implemented through the authorities and to take upon themselves the execution of developmental works of a minor nature including the maintenance of existing assets. In order to achieve these objectives it is proposed to give each of the 153 gram panchayats an annual grant of Rs. 20,000/-. This will be only partly met from the plan. Since these institutions will also have to have some amount of staff it is hoped that one secretary to each of the panchayats can also be appointed to whom an honorarium will be given. The amount of Rs. 20,000/- proposed to be given to each panchayat will take care of the honorarium also.

Participation of panchayat level bodies in the overall developmental framework is expected to be a major step in the policy of decentralised development administration which is sought to be introduced in the 7th Plan.

Financial Dimension

An outlay of Rs. 150 lakhs is provided for the Seventh Plan to meet this programmes outlined above.

Name of the Scheme/ Projects	Sixth Five year Plan (1980-85) Agreed outlay.	1980-83 Actual expendi- ture.	1983-84 Actual expendi ture.	1984-85		Seventh Plan (1985-90)		GN 2 (Rs. in lakhs) 1985-86	
				Appd. Out lay	Anti. Expen- diture.	Proposed Outlay	of which Capital content	proposed Outlay.	of which Capital content.
1	2	3	4	5	6	7	8	9	10
Community Development	25.00	5.98	2.84	10.00	10.00	150.00	—	25.00	—

Land Reforms

Although a Land Reform Law was passed in the State as early as 1978 with the avowed objective of imposing a ceiling on agricultural land and distributing surplus land to the landless and other weaker sections of the community, the reforms have not been implemented on account of various factors. The detection and compilation of area declared as excess, amounting to roughly 10,000 acres, brought in its wake a number of representations and in consequence of the very nature of these representations the Government felt that any further step towards implementation should be taken only after they are carefully considered and after the survey and settlement work including the preparation of land records is completed.

Meanwhile, as early as 1975 the Sikkim Cultivators Protection (Temporary Provision) Act was passed primarily for the purpose of ensuring that the cultivating tenants, namely the adhiadars and kutiadars, have security of tenure without facing the prospect of eviction on the whims of the landlords. As a result of this protective measure, there have been no instances of eviction causing unrest in the rural areas. The demand for land reforms is not as pressing as in other parts of the country.

The main area of stress under land reforms during the past few years has been in the conduct of survey and settlement. The previous settlement was undertaken as early as 1954 when a revenue settlement was conducted. Due to passage of time the records that were prepared naturally got distorted and therefore in 1976 the Government decided to undertake a comprehensive survey and settlement work to cover the entire State in respect of agricultural land which is estimated to be about 175 lakh hectares.

The survey work was started by recruiting local persons giving rudimentary training and undertaking the work through a system of intensive supervision. The work which was commenced in 1976 was finally completed in November 1983. This has now necessitated the setting up of a separate Directorate of Land Records because all the work that went into the completion of the survey has to be got reflected in land records and unless future changes are recorded properly the effort and work put in settlement will get nullified. The Land Records Directorate was therefore constituted under the Land Revenue Department with the needed supporting staff at the headquarters and the district level.

Sikkim State does not have the patwari system as in other States. It is therefore necessary to introduce a system somewhat similar to the other States in this respect. Accordingly, a decision has already been taken that 40 village level centres will be opened to be distributed among the various districts consisting of an Assistant Director, Revenue Supervisors and Surveyors. The personnel at this level will not only undertake land reform and land revenue work but will also be the Government functionaries for other items like crop estimation and general enquiries. The Revenue Supervisors will submit their documents to the district level where there will be senior level officers to supervise their work.

The Land Records Directorate will be solely responsible for the purpose of updating all land records. It will be its duty to make all changes in transactions both by mutation of records and by making the necessary changes in the maps. It goes without saying that an infrastructure in the form of buildings is required not only in the district level but also at the level of the 40 centres opened for the purpose. A sizeable part of the plan outlay will

therefore be earmarked for office-cum-residential accommodation and for providing other amenities at these levels.

It is expected that during the course of the 7th plan, the system of distributing surplus land to allottees will become functional. After the allotment of land, compensation has to be paid to the land owners and since the allottees are likely to be of the poorer section, some amount of financial assistance is needed to help them to establish themselves in the allotted land. For both these purpose suitable provisions are proposed. The plan also envisages expansion in staff particularly at the level of the Land Records Directorate, which, in its turn might require more equipment and mobility. All these aspects will be taken care of during the Seventh Plan.

Financial Dimension

An outlay of Rs. 120 lakhs is projected for the above purposes in the seventh plan.

LAND REFORMS

GN 2

(Rs. in lakhs)

Name of the scheme/ Projects	Sixth Five Year Plan (1980-85) Agreed outlay.	1980-83	1983-84	1984-85		Seventh Plan		1985-86	
		Actual Exp.	Actual Exp.	Appd. Out- lay	Anti. Expen- diture	Prop. Outlay	1985-90 of which Capital content	Proposed Outlay	of which Capital content
1	2	3	4	5	6	7	8	9	10
1. Survey and Settlement	42	55.12	6.10	—	—	—	—	—	—
2. Administrative set up	45	7.20	6.67	12.50	12.50	72.80	—	14.00	—
3. Office Cons- truction	30	0.93	—	—	—	28.72	—	4.90	—
4. Compensation to Land Owners	—	—	—	—	—	10.00	—	—	—
5. Assistance to Allotees of surplus land	2	—	—	0.50	0.50	2.75	—	0.50	—
6. Equipments	—	—	—	—	—	1.23	—	—	—
7. Minor Works	—	7.85	—	5.00	5.00	4.50	—	0.60	—
	119.00	71.10	12.77	18.00	18.00	120.00	—	20.00	—

Cooperation

Introduction

It has been accepted as State policy that a Cooperative way of economic development particularly for the poorer sections of society, is the most effective method. During the period of the previous five year plans the Cooperative sector in the country has progressed not only in size but has also diversified itself covering almost every sphere of economic life. What is relevant to the whole country is more relevant to Sikkim which is the youngest State of the Union. Some stray efforts in the field of cooperation did exist prior to 1976 but it was only after 1976 that a determined effort for cooperative development has been made in the State.

Cooperative Institutions are expected to cater to the poorest sections of society who do not have the wherewithal to lead lives without having to depend upon institutional support and State patronage. The concept of cooperative movement is to organise such persons by pooling their resources and by obtaining subsidies and grants from the Government to undertake various activities for economic upliftment in rural areas. The very fact the cooperatives have necessarily to be amorphous bodies has resulted in many of them becoming moribund because of bad financial management, lack of managerial input and the diverse problems of supply and demand. Despite these obvious drawbacks the cooperative way of life has come to stay and has to be encouraged in order to provide a better way of life to the poorer masses.

A high level committee headed by the then executive director of the Reserve Bank of India made a special study on the conditions prevalent in the State and submitted a recommendation to reorganise and restructure the cooperative set up of the State keeping in mind essentially the need for providing agricultural credit, making available consumer articles and undertaking marketing.

The administrative machinery had to be toned up to understand the cooperative movement. Specific policies, procedures and systems had to be evolved to organise supervise and manage the various types of cooperatives necessary for giving cooperation a shape of a movement. All these activities had to be taken up in the shortest possible time to catch up with the main stream of cooperative movement. General ignorance, difficult geographical and climatic conditions, scanty and scattered population patterns, absence of exposure to commercial and technical developments taking place elsewhere in the country resulting in the absence of experience, have been the hurdles. Similarly organisational infrastructure and other ground level facilities for economic growth were conspicuous by their absence.

During the last two five year plans the Department was partly equipped to not only appreciate the problems but also find ways and means suitable to the local conditions. New types of cooperatives were organised and efforts were made to train manpower to supervise and run the cooperatives more efficiently. Even without a cooperative banking system, limited efforts were made by the department to provide various types of financial assistance. Similarly cooperative marketing and consumer aspects have been invigorated but the desired results could not be obtained without the necessary state level organisation to coordinate and help the primaries. It was only in 1983 that the State level Cooperative supply and marketing federation started functioning.

While on the one hand it is essential to have suitable manpower and programmes to organise and develop the movement, on the other it is also essential that institutional finance, governmental support by way of funds and an efficient system to make proper use of all the facilities should simultaneously exist.

Review : The major developmental schemes taken up during the 6th plan were :

1. Education, Training, Publicity and Information.
2. Processing Co-operatives.
3. Warehousing & Marketing Co-operatives.
4. Credit Co-operatives.
5. Consumer Co-operatives.
6. Dairy Co-operatives.
7. Other Co-operatives.

Out of the above, almost nothing could be done in respect of schemes on agricultural credit, housing and processing. Items 4 & 5 were the major schemes of the Department under which assistance in the form of share capital, working capital, managerial subsidy, transport subsidy and rental subsidy were provided to enable the cooperatives to undertake marketing and consumer business including distribution of essential commodities. Some assistance for erection of storage capacity was also provided to these cooperatives.

Under item 6, a substantial progress was made by organising 55 primary milk cooperatives which starting from zero business is today distributing 5000 litres of milk daily. The milk co-operatives have two milk processing plants

Under item 6, some effort was made to organise new types of societies like labour contract and construction, transport, ex-servicemen, handloom, handicraft, canteen and industrial cooperatives.

It was envisaged that three State level co-operative organisations/federations will be organised in the state . viz.

- (a) Sikkim State Cooperative Bank.
- (b) Sikkim Cooperative Milk Producers' Union,
- (c) Sikkim State Cooperative Supply and Marketing Federation Ltd.

Of the above, the Department has been able, first to organise the Sikkim cooperative milk producers' union and then the Sikkim state cooperative supply and marketing federation. So far as the state cooperative bank is concerned the matter is still pending. Every effort is being made to make the state cooperative bank operational because such a bank has already been registered by the Department and necessary Act has been passed by the Parliament to convert the State bank of Sikkim into a state cooperative bank. The state co-operative supply and marketing federation Ltd. (SIMFED) started functioning from early 1984.

It is proposed to specifically direct attention during the seventh five year plan to the following tasks on a priority basis :

- (I) A clearly conceived action programme to be drawn up for the strengthening of primary village societies so that they are able to effectively act as multipurpose units catering to diverse needs of their members.

- (II) Re examination of the existing cooperative policies and procedures with a view to ensuring that the efforts of the cooperatives are more systematically directed towards ameliorating the economic condition of the rural poor.
- (III) Reorientation and consolidation of the role of the cooperative and federal organisations so that they are able through their constituent organisations to effectively support a rapidly diversifying and expanding agricultural sector including horticulture, food processing, poultry, dairying, fishery, animal husbandry, sericulture etc. with credit, input supply, marketing and other services.
- (IV) Development of professional manpower and appropriate professional cadres to man managerial positions.

Apex Co-operative Organisation

So far, the State had neither the cooperative credit structure nor the marketing set up. The cultivator was thus suffering on both counts. In the 6th five year plan, provision was made to set up both viz. the State cooperative bank as well as State cooperative marketing federation. Due to certain reasons, it took considerable time to organise the apex institutions. The department did succeed in setting up the state cooperative supply & marketing federation in early 1984, but the state cooperative bank is yet to start functioning. It is, therefore envisaged that the cooperative marketing and consumers federation should be vitalised and made useful to the poor cultivators of the State. A cooperative consumers & marketing system, if it is ready, with flow of adequate credit facilities will rise up to the help of the cultivators and rural population.

1. Organisation and registration of Sikkim State cooperative bank has been completed but for certain reasons, the conversion of the State Bank of Sikkim into State Cooperative Bank has been held up and it is expected that the same may materialise soon.

There are 36 multipurpose cooperative societies (MPCS), in the State which have been organised on the pattern of LAMPS to serve as multi purpose agencies for supply of credit, distribution of consumer articles, distribution of agricultural inputs and arranging marketing of surplus agriculture produce of the growers. In the absence of state cooperative bank and availability of credit facilities from NABARD, it has not been possible to provide credit to the farmers towards their production.

2. Pending formation of cooperative banking structure, the State Bank of Sikkim had provided an adhoc overdraft facility of Rs. 1 lakh to each MPCS for production credit. This facility was neither based on actual needs nor gave any assurance to the societies for long-term scheme. Hence, it could not serve the purpose. The result was that these cooperatives after advancing this amount to the growers either could not recover the loans fully or after recovery did not repay to the State Bank of Sikkim fearing that this meagre credit facility may itself not be renewed.

3. In addition to the amount of Rs. 1 lakh for each MPCS, the State Bank of Sikkim also advanced Rs. 50,000/- to each of the MPCS for undertaking consumer business. This assistance was also adhoc in nature and had no realistic approach.

4. The department had been trying to maintain and keep the MPCS functioning in the hope that very soon these will be utilised as cooperative credit, consumers and marketing agencies at the ground level. In order to

develop a proper cooperative credit system, apart from the existence of a State cooperative bank, it is essential to have a structural and financial linkage between the apex Institutions and its constituents. Managerial efficiency and competence to handle the work continues to be important and will have to be strengthened. Government subsidies in the form of managerial, rental assistances etc. and other assistance including assistance to strengthen the share capital base of cooperatives will have to be provided for, in the credit plan.

5. In pursuance of general guidelines the approach of 'one point service' to the farmers is proposed to be adopted. The credit needs of various types as well as requirements for consumer articles and arranging for marketing of surplus produce is proposed to be handled at one point in an integrated manner. All types of credit needs including production, consumerism and marketing are proposed to be provided from a single source. Looking to the size and geographical condition of the State and the nature of population which is scattered and scanty, only two tier structure of Cooperatives is envisaged. The State Cooperative Bank will be affiliated by all the MPCs and other primaries and will directly deal with the primaries through its branch offices opened at appropriate places. These MPCs being multi purpose cooperatives will also be affiliated to the Sikkim State cooperative supply and marketing federation for their consumer and marketing needs.

Following schemes are proposed to be included in the Seventh Five Year Plan for promotion & development of Co-operatives.

Sikkim State Cooperative Bank :

Considering that the short-term production credit needs per MPCs in the initial years to be about Rs. 5 lakhs and the marketing credit needs as Rs. 2 lakhs and also for consumer business of the 36 MPCs and the Consumer Cooperatives totalling to 70 to be Rs 1 lakhs each, the credit requirements in the first two years, would be of the order of Rs. 3 crores per annum. The State Cooperative Bank may have to be provided with share capital by the State Government and assistance may also have to be given to the Cooperative societies for investing in the shares of the State Cooperative bank. In the event of the State Bank of Sikkim being converted into a State Cooperative Bank, while there may not be any expenditure on account of pre-establishment costs the re-organisation of the bank and preparing it to undertake the functions of the State cooperative bank will require some expenditure by way of manpower training and for opening of new branches.

Cooperative Supply & Marketing Federation :

The back bone of Cooperative movement is marketing. Agricultural credit given for increase in production by itself does not help a cultivator to improve his economic condition. His agricultural produce must be sold at remunerative prices. Hence, the need for an efficient and effective marketing system.

The second State level apex organisation namely Sikkim State Cooperative Supply and Marketing federation Ltd., (SIMFED), has come into being from early '84. The long outstanding requirement of the Cooperative sector for procurement and distribution of consumer articles as well as marketing of agricultural surpluses through Cooperatives has thus been fulfilled. Absence of the apex federation and proper infrastructural tie-up within the Cooperative consumer and marketing sector had not allowed it to grow. Absence of adequate business with the primaries is one of the important reasons for their non-viability. Competition with the well-entrenched private trade which has strong link-ups both in the field and other levels is a very difficult task. Yet, in the interest of common good of the poorer

sections of the society promotion and development of Cooperative consumer and marketing activity is essential. It is one of the declared objectives of national policy to promote cooperative activity which aims at self-help and equitable distribution of resources.

A brief idea of the existing activities of the Federation would be available from the following :

- (i) The Federation has a target of marketing of Cardamom worth 25% of total production viz. 1000 MT. By the first year of 7th Plan the working capital needs for this quantity would be about Rs. 3 crores. By the end of 7th Plan, it is proposed to handle 50% production of cardamom in Cooperative sector.
- (ii) A Government decision has already been taken for the Federation to handle distribution of rapeseed oil in the State. The monthly quota for Sikkim is 300 MT. During 7th Plan other essential items like sugar, rice, k. oil. etc. may also be taken in the Cooperative sector requiring huge working capital.
- (iii) Preparation and distribution of exercise books made from controlled paper is also to be handled by the Federation During 7th Plan manufacture and distribution of text books for students may also come to the Cooperative sector.
- (iv) Possibility of taking over fertiliser distribution, other essential consumer articles and marketing of ginger, orange and medicinal herbs by Cooperatives will require substantial working capital which cannot be assessed at this stage.
- (v) Similarly, it is proposed to set up cardamom curing centres, ginger dehydration plant, processing unit for medicinal herbs and orange and some other units related to the treatment of large cardamom and its products.

It is, therefore, essential that during the seventh five year plan, considerable initial help and assistance to the newly organised State federation is provided by the State Government. Simultaneously, help and assistance will also have to be provided to the multi purpose cooperative societies (MPCS), and Consumer societies, to be able to maintain a reasonable economic relationship with their Federation.

Following schemes for assistance to the Sikkim State Cooperative Supply and Marketing Federation (SIMFED), are proposed to be included in the Seventh Five Year Plan :

- (i) Managerial plan for meeting the expenses on administration and running of the Federation.
- (ii) 100% interest subsidy in the initial three years and 50% in the remaining two years of the plan on bank borrowings.
- (iii) 100% transport subsidy for the initial two years, 75% in the third year, and 50% of the last two years of the plan.
- (iv) Creation of a revolving fund for Cooperative marketing development in the apex Federation is most essential to enable it to meet the vagaries of trade, when the element of subsidy is reduced/or eliminated over a period of time.

Sikkim Milk Producers' Union :

The first apex cooperative organised in the State was the Sikkim Milk Producers' Cooperative Union, which started functioning from April, 1980. During this period 55 primary milk producers' cooperative societies have been organised and affiliated to this Union, from a zero level of milk handling in 1981 it has already attained a 5,000 litres of milk collection, processing and distribution per day. The Union has 2 (two) dairy plants and polythene packing unit, with a fleet of transport for distribution of milk. The union has taken up programmes under animal husbandry such as artificial insemination, supply of cattle feed, fodder development and allied extension work which is proposed to be continued during the 7th Five Year Plan. Initial assistance by the NDDB has helped in enabling this union to establish necessary infrastructure for development

During the 7th Plan period it is proposed to continue to assist the union on a tapering basis on managerial grants and transport subsidy so that it is possible to give better price to the milk producers and supply the milk to the consumers at reasonable rates. New milk producer cooperatives would be organised in areas so far not covered and the Animal Husbandry programmes for livestock development will be improved. It is also proposed to improve the capacity utilisation of both the dairy plants. To enable this union to expand its activities it is proposed to contribute a sum of Rs. 15.00 lakhs in its share capital and also draw assistance under the recently brought out NCDC schemes for integrated dairy development.

Primary Cooperatives :

Keeping in view the geographical and other related special conditions of Sikkim, only multipurpose cooperative societies at the ground level were considered appropriate to take all the three functions namely, Credit, Marketing and Consumers. However, for specific areas it is also felt proper to organise Consumer Cooperatives only for distribution of consumer articles to supplement the functions of the multipurpose cooperative societies .

By the end of the 6th Five Year Plan it is anticipated that following levels of targets will be achieved.

1. No. of members	—	21,000	
2. Consumer business	—	Rs 200 lakhs.	
3. Marketing business	—	Rs. 100 lakhs.	
4. Dairy	—	Rs. 54 lakhs.	
5. No. of Societies :			
(a) Multipurpose Cooperative Societies	—	35 Nos.	} = 151
(b) Consumers	—	40 Nos.	
(c) Dairy	—	60 Nos.	
(d) Others	—	15 Nos.	
(e) Branches/rental outlets	—	13 Nos.	
6. Credit :			
Short term	—	35.00 lakhs	
Medium term	—	15 00 lakhs	
Long term	—	10.00 lakhs	

The above level of achievement was attained in the absence of both the Apex Cooperative Bank and the Apex Marketing and Consumer Federation.

During the first 2 years of the plan, it is proposed to multiply the major activities and thereafter to maintain a growth rate. Based on this estimate, the level of credit, marketing and consumer business would be as follows :

No. of Members	—	30,000 Nos.
Consumer business	—	Rs. 800 lakhs
Marketing business	—	Rs. 400 lakhs
Dairy	—	Rs. 200 lakhs
Credit	—	Rs. 250 lakhs
No. of Societies	—	255 Nos.
Branches	—	30 Nos.

Share Capital :

So far no State share capital investment has been made in the Consumer Cooperatives. Since it is proposed to bring up these Cooperatives the discipline of equity-debt ratio is proposed to be brought about. As such, instead of working capital grants, government assistance is proposed to be given by way of share capital and purpose based assistance.

It is proposed that during the 7th Plan, additional share participation at the rate of Rs. 25,000/ for the MPCS and Rs. 10,000/ for each consumer society may be made.

Assistance for contribution in the share of Apex Cooperative :

Now since proper structure is being brought about in the Cooperative sector by having apex cooperative organisations for Credit, Consumer, Marketing and Dairy, it is essential to develop capital linkage between the primaries and their apex. Only through such a linkage the primaries will be able to participate in the policy formulation and working of the Federations.

So far, the MPCS have invested some amount in the Share capital of the SIMFED and the proposed State Cooperative Bank. Government assistance will have to be provided to all the others viz. consumers cooperatives and dairy cooperatives specifically for investment in the shares of their respective apex federations. Some assistance, may also have to be provided to the M. P. C. S. for additional investment in the shares of State cooperative supply and marketing federation ltd. (SIMFED).

Miscellaneous grants to primaries :

With very low level of business in the primaries, various types of grants and subsidies had to be provided to them. During the 7th Five Year Plan, through a concerted effort it is proposed to increase the level of business of every cooperative society but the benefits thereof may start to be visible only at the far end of the 7th Plan period. Therefore, it is considered essential that continued government assistance is provided to the societies in the form of pre-operative costs, rental, managerial, transport etc. and interest on working capital raised from banks.

Cooperative Storage

The multipurpose cooperative societies combine the functions of credit, consumers and marketing. For any business, storage facility is a must. Rented storage adds to cost and the objective of Cooperatives "to provide

cheaper and/or quality goods to consumers and secure better returns for the surplus agricultural produce of grower members" cannot be served if costs are not reduced. A godown is a must for every primary cooperative. It is also felt that in the hilly conditions of Sikkim unless residence is provided to the secretary of the society, the type of service these cooperatives are expected to render to the rural poor, would not be possible. During 7th plan, therefore, it is proposed to provide a suitable storage capacity to every MPCS and consumers society in the state.

The main impetus to the consumers and cooperative marketing activities will be provided by the state cooperative supply and marketing federation (SIMFED). This federation will also need a few distribution and procurement centres within the State and bigger capacity godowns with provision for store-keeper's residence which is essential to create proper Infrastructure.

Of the 36 MPCS, 22 have already been provided with godowns which have an office and a shop for consumer articles. None of the 34 consumer societies could be assisted so far both because these were new societies having very little business and budgetary constraints. So far, the state govt has been providing 100% grant for constructing such building complexes to the MPCS. It may be difficult to discontinue this pattern for reasons of propriety and continued non-viability of these cooperatives. Only with increased business and diversification with proper facilities like trained secretaries and office cum-godown complexes will the societies be able to sustain liabilities like loans. It is hoped that with continued assistance from state government and increased diversified business by the end of 7th plan, these would be viable units.

Every MPCS will have at least a complex with storage capacity of 100 MT and every consumer cooperative with 50 MT capacity. MPCS which has a storage capacity but found insufficient, will also be provided additional capacity on selective basis. The federation will require godowns/warehouses of 500 MT capacity of 2 points and 1000 MT capacity atleast at 3 points.

A storage capacity in each of the 4 districts of the state and one bigger godown at Siliguri which is the only transshipment point for incoming and out-going from Sikkim is proposed for the federation during 7th Plan period.

14 godowns of 100 MT, capacity 34 of 50 MT, 2 of 500 MT and 3 of 1000 MT capacity are proposed to be constructed during 7th Five Year Plan. For cost estimate the structural civil designs prepared by National Co-operative Development Corporation for World Bank Project No. III which were based on the costs estimated on 1983 prices for hilly areas have been taken.

It is proposed to avail of maximum assistance for this programme under National Cooperative Development Corporation scheme. The actual budgetary allocation required will be upto 5 per cent of the cost, as 95 percent amount will be available from NCDC outside the State Plan in the form of loan and subsidy at rate the of 70 & 25 percent respectively.

Processing Cooperatives

During the 7th Five Year Plan it is proposed to set up a complex of a Cardamom decortication unit, extraction of cardamom essence/flavour out of the cardamom shell and very small grains which do not have proper markets and a hard/cardboard unit using the by-products of the cardamom shells mixed with paddy husks, bamboo pulp etc.

In addition, for cardamom it is proposed to set up a chain of cardamom drying units as per the advice of the Cardamom Board with a view to retain the quality and colour of cardamom.

Ginger production in the State has been lately picking up fast. During peak seasons and good harvest, there is glut in the market which leads to sudden fall in the prices putting the growers in serious losses. During 7th plan, it is proposed to set a ginger dehydration plant along with a grinding and packing unit. This will eliminate distress sales besides ensuring remunerative prices to the cultivators and creating additional employment.

Soyabean cultivation in the lower regions of the State has also picked up and it has been found that an intermixed cultivation of soyabean with maize is mutually beneficial to both the crops. It is proposed to set up atleast four small soyabean based oil mills and a cattlefeed manufacturing unit centrally located to utilise the by-products of the soyabean which will promote Animal Husbandry programmes as well as poultry programmes in the State. In this connection it may be mentioned that the Sikkim Milk Producers' Union is already purchasing from outside the State about 50 tons of cattlefeed per month for distribution through 55 primary Milk Cooperative in the State. Other ingredients of cattlefeed like maize and rice bran are also available in the State.

A policy decision has already been taken to collect and market the medicinal herbs available in the State through cooperatives only. The programme consists in initially helping the cooperatives to secure better prices for this minor forest produce (MFP) wherever good market exists, and to promote systematic cultivation of such herbs and later set up a processing unit to manufacture ayurvedic drugs in the cooperatives sector. Setting up of the cooperative drug factory would be considered in the 3rd & 4th year of the 7th Five Year Plan.

Based on locally available raw materials like orange, small units such as juice extraction units, pickles units etc. are proposed to be set up as cottage industries in the Cooperative sector.

Education, Training And Publicity :

With the growth of the cooperative movement and the need of providing cooperative education at the level of the non-officials and officials of the societies as well as to have continuing programmes of mass education and publicity on the need, benefits and mutual responsibilities of the members, a time has come for a State level cooperative education and training programme of be seriously launched during 7th Five Year Plan. This programme would include ;

1. Specific training for Secretaries of Cooperative Societies.
2. Initial training for specific subjects like cooperative credit marketing, consumers and dairy etc.
3. Cooperative education programme for the non-officials and members of cooperative societies.
4. Holding of meetings, conferences and seminars.
5. Undertaking publicity of the achievements of the Cooperative sector.
6. Sending officers of the Department and societies for higher specialised training outside the State.
7. Arranging tours of selected non-officials of the society to other parts of the country where Cooperative movement has flourished.

For the above programme following schemes are proposed during the 7th Five Year Plan.

1. Setting up of a Primary Cooperative Training Centre.
2. Creating a cadre of Cooperative Education Instructors.
3. A Cooperative Press for bringing out Cooperative development and publicity materials (it will be a small press).

Consumption Loans :

The programme of credit is related to the needs of various economic activities. There is another component of financial requirements, particularly for the small and marginally poor farmers which also ought to be provided for mainly consumption needs. Between the periods of sowing, harvesting and sales, these poor farmers do not have savings to meet their consumption requirements which force them to take loans from money lenders and traders at exorbitant interest or pledging sale of their produce at throw away prices. In both cases they are exploited. It is, therefore, necessary that the consumer needs of such small and marginal farmers are also taken care of. Otherwise all efforts for their economic upliftment are likely to be siphoned out by the money lender and traders.

It is proposed that an outright grant @ Rs. 10,000/- to 15,000/- is provided to each consumer society and multipurpose cooperative society respectively. These societies will advance loans in cash or kind to such members who have land holdings upto 2 acres on nominal rate of interest, subject to a maximum of Rs. 500/- per member provided he is not a defaulter to the society.

Other Cooperatives :

In the process of diversification of the Cooperative movement mainly based on locally available skills and raw materials different types of Cooperatives are proposed to be organised during the 7th Five Year Plan. These Cooperatives will serve as sources of full employment as well as additional employment for the under employed. Labour Cooperatives, Handloom societies, Cooperative canteens, Student cooperatives, Cooperatives based on Cottage Industries like Carpet Weaving mainly to utilise the skills generated through various types of training being imparted where no follow up efforts are presently made, Women's Cooperatives etc. shall be organised.

At present there are 13 Societies of different types existing in the State including 3 (three) labour Cooperatives.

During 7th Five Year Plan, based on feasibility response and viability, it is proposed to organise at least 20 such societies.

It will be necessary in the organisation of such societies to have some preliminary survey and also tie up the production with marketing of the finished products. Such societies will have to be assisted like other cooperatives for pre-establishment cost, managerial, rental and other grants, State share capital participation and also some initial grants for machines and equipments.

Financial Dimension :

In order to meet the requirement of proposals detailed above an outlay of Rs. 400 lakhs has been proposed.

COOPERATION

GN 2

(Rs. in lakhs)

Name of the scheme/ Projects	Sixth Five Year Plan (1980-85) Agreed outlay.	1980-83 Actual Exp.	1983-84 Actual Exp.	1984-85		Seventh Plan 1985-90		1985-86	
				Appd. Out- lay	Anti. Expen- diture	Prop. Outlay	of which Capital content	Proposed Outlay	of which Capital content
1	2	3	4	5	6	7	8	9	10
Direction & Adminis- tration	30.00	15.02	8.50	10.00	10.00	75.00	—	8.00	—
Education, Training & Publicity	4.50	0.56	0.63	0.95	0.95	25.00	—	1.00	—
Credit Cooperatives	15.50	5.63	9.52	4.00	4.00	35.00	10.00	10.00	6.00
Processing Coopera- tives	4.00	—	—	0.05	0.05	30.00	15.00	1.00	—
Warehousing & Storage	45.00	9.51	5.87	9.00	9.00	35.00	20.00	5.00	3.00
Marketing						80.00	45.00	15.00	9.00
Consumer Coopera- tives	25.00	11.12	5.89	5.00	5.00	70.00	5.00	9.00	3.00
Other Cooperatives	4.00	3.05	0.74	9.00	9.00	20.00	10.00	3.00	1.00
Dairy Cooperatives	32.00	8.46	3.12	4.00	4.00	30.00	15.00	8.00	2.00
	160.00	53.35	34.27	42.00	42.00	400.00	120.00	60.00	24.00

COOPERATION

GN 3

(Rs. in lakhs)

Item	Unit	Sixth Five Year Plan (1980-85) Target	1980-82 Achieve- ment	1983-84 Achieve- ment	1984-85 Tar- get	Antici- pated Achieve- ment	Seventh Plan (1 85-90) Target proposed	1985-86 Target proposed	
1	2	3	4	5	6	7	8	9	10
1. Short Term loan	-	lakh	25.00	25.02	8.00	15.00	3.00	415.00	35.00
2. Medium Term loan	-	lakh	20.00	9.00	4.00	8.00	2.00	160.00	15.00
3. Long Term loan	-	lakh	10.00	-	-	5.00	Nil	150.00	10.00
4. Retail sale of fertiliser	-	lakh	5.00	-	-	-	-	10.00	Nil
5. Agriculture produce marketed	-	lakh	-	11.50	8.00	10.00	96.00	1687.00	170.00
6. Retail sale of Consumer goods by									
a) Urban Cooperatives	-	lakhs	30.00	54.00	22.00	25.00	25.00	300.00	50.00
b) Rural Cooperatives	-	lakhs	100.00	240.00	93.00	125.00	175.00	2,700.00	350.00
7. Processing Units		lakhs Tonnes	-	-	-	-	-	-	-
(i) Organised	-	No cumu- lative)	-	-	-	-	-	18	3
(ii) Installed		"	-	-	-	-	-	-	-
8. Cooperative storage	-	M. T.	-	200	100	100	100	7,100	950

Irrigation

A. MINOR IRRIGATION

Introduction :

Water is perhaps the most important agricultural input. Although the state of Sikkim has abundant rain fall, the position regarding water as an input vis-a-vis agricultural development remains unaltered. Adequate water is necessary not only to stabilise crops during the khariff season but more so for intense land use when winter crops have to be taken.

Review :

The people of the State have over the years developed their own irrigation systems by drawing water from perennial sources through 'kacha' channels under the gravity system. These channels however have had to face the onslaughts of monsoons, constant land slides and general negligence in maintenance as a result of which most of them were in a state of disuse. In order to capitalise on the traditional system, the Government through the Rural Development department undertook the construction of irrigation channels on the same basis but with more durable structures in the form of cemented channels using wherever needed polythene pipes so that in vulnerable areas the need for constructing cemented channels could be avoided.

The State has a cultivable area of approximately 1,09,000 hectares. Prior to 1975, approximately 4,000 hectares of agricultural land was irrigated but the fields were mainly dependent on seasonal streams. During the period 1975-1980 the first major effort for constructing irrigation schemes on a more durable basis was taken up. Since most of the schemes covered only a limited command area, none of which exceeds 2,000 hectares in area, all the schemes taken up have been categorised under minor irrigation. In the five year period up to 1980, 3,845 hectares were brought under irrigation.

The schemes which were initiated in the pre sixth plan period were continued during the 6th plan but with the difference that the sources were investigated thoroughly before taking up the construction along the hill sides. In addition, proper liaison was developed with the Agriculture and Land Use departments primarily for the purpose of ensuring that the water made available would be optimally utilised by the construction of field channels in appropriate places. The impact of irrigation as a result was felt more strikingly and during the 6th plan as much as 6071 hectares is expected to be brought additionally under irrigation.

Objectives :

The main objectives in the 7th plan would be :

- (a) to accelerate the construction of new irrigation schemes so as to bring approximately another 9500 hectares under assured irrigation :
- (b) to take effective steps for consolidation and better utilisation of irrigation potential already created, and
- (c) to plan and collect data for future schemes.

Strategy :**New Schemes :**

To achieve the objectives enumerated, the main strategy would be to build up a shelf of schemes duly investigated and ready for implementation. These schemes will be vetted by the Agriculture and Land Use departments in a more effective manner wherein concrete suggestions for water management would be given by the departments concerned. It will be the duty of the Agriculture department to prepare model cultivation practices within the command area so that the additional input of water would make the land more productive. In this context the Agriculture department will also undertake intensive demonstrations within the command area so that there will be a visual impact driving home the efficacy of irrigated cultivation, particularly of additional crops including vegetables. Approximately 6500 hectares are targeted to be brought under stream irrigation or surface irrigation during the 7th plan. In view of the importance to maintain the ecology the alignment of the channels would be undertaken in such a manner that the seepage of water will not cause any major ecological disturbance. Most of the irrigation schemes will be concentrated in altitudes which are below 5,000 ft

Besides surface irrigation through hill channels, approximately 3,000 hectares are targeted to be irrigated through storage schemes. Three such schemes have already been identified and surveyed. It will be for the first time that storage irrigation will be attempted in the state. These schemes will provide for storage of rain water and surplus available in the streams during rainy season. In the lean season when there is a demand the water will be released.

Another source of irrigation is that of ground water. Certain experiments have already been undertaken but there has not been any systematic collection of data and hence in the 7th plan the ground water potential will be tapped after making sure that there are perennial sources under the ground.

Consolidation :

One of the most important aspects of irrigation, pertains to the maintenance of channels. This is all the more valid in a mountainous state where the channels are susceptible to damages even at the slightest of geological disturbances. The maintenance work very often amounts to repair and restoration which require more than the normal amount of maintenance money. In such cases the lack of resources has stood in the way of quick restoration. In order to avoid decay of existing assets the approach in the 7th Plan will be to earmark a percentage of the capital outlay provided for constructing channels exclusively for repair and restoration. At the same time existing channels will be improved by providing cemented channels and distribution channels to cover the needs of blocks of land approximately 5 hectares each. This will help in water management which is crucial to the optimum utilisation of water. There is great anxiety that the lag between the potential created and the utilisation thereof is reduced. For this purpose, an efficient distribution system right up to the farmers field is absolutely essential. Hence construction of field channels up to blocks of 5 to 8 hectares will be a part of the irrigation schemes. This will be not only for ongoing and new projects, but also for completed projects. For the last mentioned the provision of field channels as a part of the project will be taken as a part of modernisation programme.

Data :

A systematic hydrological survey for all surface water sources in the state will also be undertaken so that the future schemes can be well planned.

Lift Irrigation :

Last but not the least is the potential for other forms of irrigation of which lift irrigation is the most important. Unlike other states, lift irrigation has not been attempted except for an isolated experiment here and there in Government farms. A major scheme of pumping water from the Rangit river in stages up to Namchi, which was originally conceived of as a drinking water scheme, will convert a vast tract of the south district which is arid and dry into a potential area for growing field crops including vegetables. Preliminary measures to undertake the feasibility of this scheme which involves multistage pumping is under consideration. Sprinkler irrigation will be integrated along with lift irrigation.

It needs no mention that for undertaking a larger number of schemes and maintaining them, the organisational set up of the irrigation department will have to be strengthened. **This will be done in stages** depending upon the availability of manpower and actual needs.

B. MEDIUM IRRIGATION

The State has a cultivable area of approximately 1,09,000 hectares and ultimate irrigation potential has been assessed at 50,000 hectares based on preliminary studies.

So far, only minor irrigation schemes with conventional contour channels/pipes have been taken up. A few storage schemes have been proposed for the VII Plan which also fall in the category of minor schemes. Some parts of South and East Sikkim are very dry with very good prospects of developing irrigated dry crops and vegetables on large scale. One such area in Namchi-Nayabazar area in Rangit valley has been identified having a command area of 2100 hect. Although this area has tremendous scope for such type of cropping peace meal small schemes are not feasible. A combined scheme consisting of lifting water from Rangit river, collection from some local streams which have limited discharge during lean period, collection and storage of rain water and storage of pumped and other available water during non peak demand period has been found feasible and is proposed to be taken up under medium irrigation sector during the VII Plan period.

The anticipated irrigation potential by the end of VI Plan period will be 14000 hectares. Thus there will be a balance of 36.000 hectares yet to be brought under irrigation which is more than the area brought under irrigation by the end of VI Plan period.

The type of scheme proposed for Namchi-Naya bazar may help in achieving the ultimate irrigation potential early and may also help in identifying more schemes so that the ultimate irrigation potential is increased substantially.

The scheme is in the investigation stage and the project is expected to be prepared by September October, 1985.

Financial Dimension :

A total outlay of Rs. 19 crores has been proposed for irrigation out of which Rs. 7 crores is for medium irrigation.

MINOR IRRIGATION

GN 2

(Rs. in lakhs)

Name of the Scheme/ Projects	Sixth Five year Plan (1980-85) Agreed outlay.	1980-83 Actual expendi- ture.	1983-84 Actual expendi- ture.	1984-85		Seventh Plan (1985-90)		1985-86	
				Appd. Out lay	Anti. Expen- diture.	Proposed Outlay	of which Capital content	proposed Outlay.	of which Capital content.
1	2	3	4	5	6	7	8	9	10
Direction and Administration	49.00	21.82	1.66	14.00	14.00	110.00	—	20.00	—
Survey & investi- gation	11.00	8.28	1.62	3.00	3.00	25.00	—	5.00	—
Minor irrigation works	340.00	208.45	69.16	108.00	108.00	980.00	—	178.00	—
Modernisation	—	—	—	—	—	75.00	—	15.00	—
Ground Water	—	—	—	—	—	5.00	—	1.00	—
Machinery and Equipments	—	—	—	—	—	5.00	—	1.00	—
Medium irrigation works	—	—	—	—	—	700.00	700.00	50.00	50.00
	400.00	238.55	72.44	125.00	125.00	1900.00	700.00	178.00	50.00

IRRIGATION

GN 3

(Rs. in lakhs)

Sl. No.	Item	Code No.	Unit	Sixth Five Year Plan (1980-85) Target	1980-83 Achievement	1983-84 Achievement	1984-85 Target	1984-85 Anti-cipated Ach.	Seventh Plan (1985-90) Target proposed	1985-86 Target proposed
1	2	3	4	5	6	7	8	9	10	11
Minor Irrigation										
	(i) Ground Water :									
	Potential		'000 hac.	—	—	—	—	—	.01	.01
	(ii) Surface Water									
	a) Potential		'000 hac.	13.80	11.90	12.90	14.07	14.07	89.00	19.07
			(Cumulative)							
	b) Utilization		„	6.00	4.10	5.10	6.25	6.25	75.00	7.50
	(iii) Modernisation and renovations									
			Kms.	—	—	—	—	—	75	15
	Medium Irrigation :									
	a) Potential		'000 hac.	—	—	—	—	—	2.00	—

Flood Control

Sikkim State is not exposed to the hazards of floods like some other states in the country. Nevertheless, many of the towns and villages are located on the banks of turbulent rivers and streams as a result of which the erosion on the banks is a serious problem encountered from time to time particularly during the height of the monsoons. The erosion of banks endangers landed property and there have been instances of having had to evacuate families since houses and shops are invariably located precariously close to the rivers.

The flood control work needed in the State is consequently mainly that of bank protection schemes. From time to time the length of rivers have been protected particularly in the more vulnerable areas. The protection work consists of building protective walls and spurs mainly for the purpose of minimising the impact caused due to the turbulence of the swirling waters. The per kilometer cost is high because of the massive packing required and the durable fountain needed on account of turbulence. By the end of the 6th Plan a total of 4.62 kms of river banks will have been protected out of which 2.89 kms is the length tackled during the 6th Plan.

These schemes will have to be continued with the same tempo in the 7th plan. While a part of the river protection schemes in the bazars of Jorethang and Singtam will spill over, a further 3 kms of protection work is envisaged in the bazars of Legship, Rangpo, Dikchu, Rongli, Rorathang, Middle Camp and Dentam.

A percentage of the plan outlay is also proposed to be earmarked exclusively for durable maintenance of the schemes already completed.

Financial Dimension

An outlay of Rs. 140 lakhs is proposed for the schemes outlined above.

FLOOD CONTROL

GN 2

(Rs. in lakhs)

Name of the scheme/ Projects	Sixth Five Year Plan (1980-85) Agreed outlay.	1980-83 Actual Exp.	1983-84 Actual Exp.	1984-85 Appd. Anti. Out- Expen- lay diture		Seventh Plan 1985-90 Prop. of which Outlay Capital content		1985-86 Proposed Outlay	of which Capital content
1	2	3	4	5	6	7	8	9	10
Flood Control Projects	50.00	31.70	10.16	15.00	15.00	140.00	—	26.00	—
	50.00	31.70	10.16	15.00	15.00	140.00	—	26.00	—

FLOOD CONTROL

GN 3

(Rs. in lakhs)

Item	Unit	Sixth Five Year Plan (1980-85) Target	1980-82 Achieve- ment	1983-84 Achieve- ment	1984-85 Tar- Antici- get pated Achieve- ment		Seventh Plan (1 85-90) Target proposed	1985-86 Target proposed
1	2	3	4	5	6	7	8	9
Flood Control Projects :								
2) Towns Projected	Nos. (Cum.)	6	3	5	6	6	12	7
3) Length of Banks	Kms. (Cum.)	5	2	4	5	5	10.16	6

Power

Introduction

Unlike other States the generation, transmission and distribution of power is managed by the State Power Department since there is no Electricity Board. The system has been working well because the totality of work handled is within manageable limits. As early as 1929 the use of electricity was introduced in the State when a 50 Kw hydel unit was installed. Thereafter there was not much progress until the Jali Power House was commissioned near about Singtam to a capacity of roughly 2 MW. During 1970s the question of using the tremendous hydel potential of the State was considered in depth and with the help of the Government of India a major project called the Lagyap Hydel project was investigated. Soon after the merger there was a rapid growth of all developmental activities as a result of which the state became critically deficit in power. For a few years, the available power was distributed at low voltage particularly in Gangtok town and there was some amount of load shedding also.

The Lower Lagyap Project which was in the meanwhile being implemented was to be the harbinger of better times and one unit of 6 MW was commissioned in September 1979. The project no doubt encountered teething problems and although this unit had a generation capacity of 6 MW it fell to as low as a couple of megawatts during the winter months when the level of water in the river came down. In order to augment the availability of power, the Government also installed a standby diesel power house with a capacity of 1.6 MW. The second unit of Lagyap was commissioned in April 1984 adding a further 6 MW which considerably improved the power availability within the State, leading to a surplus situation.

The Lagyap Project which was constructed by the Central Government was gifted to the State but unfortunately the location of the project being in an area of wide-spread land slides has resulted in frequent outages and constant repair work. The reliability of generation during the monsoons has therefore been affected and during the winter months the water being at a low level the generation gets reduced. Stabilisation of the civil structures in the project has been taken up but it is a time consuming process involving considerable expenditure which cannot be met from the normal operation and maintenance provisions. It might be necessary to improve and remodel some of the structures of Lagyap Project in order to make it fully reliable.

In 1975-76 the State had only about 1,800 consumers of which 95% were domestic. The consumer pattern during the 6th plan is given below :

Type of Connection	No of Consumers as on						Total
	31.3.80	80-81	81-82	82-83	83-84	84-85 (Target)	
1. Domestic	4500	660	850	950	980	1100	9040
2. Commercial	1870	190	120	350	410	500	3440
3. Industrial	115	10	8	15	18	20	186
Total	6485	860	978	1315	1408	1620	12666

The growth in commercial and industrial consumers has been reasonably steady during the last years. Most of the rural electrification schemes started during 1980-81 are nearing completion which would provide a big boost to the number of domestic consumers including some small scale industries in the rural areas during the 7th five year plan. A matching generation programme incorporated with suitable transmission network would form the primary objective of the 7th plan.

The installed capacity available in the state and the demand computed during the 6th Five Year Plan are as under :

Particulars/year	80-81	81-82	82-83	83-84	84-85
Maximum Demand MW.	6.20	7.50	9.30	12.50	14.00
Cumulative Installed Capacity					
Hydro					
(a) Firm	4.5	4.7	5.3	9.3	9.3
(b) Seasonal	8.5	8.7	9.3	15.3	15.3
Diesel...	0.3	0.3	1.7	1.7	1.7
Maximum installed capacity.	8.8	9.00	11.00	17.00	17.00

The above installed capacity includes about 1.7 MW diesel generation which is only a stand-by arrangement available in Gangtok. As such the effective capacity available for general supply of power during 1984-85 will be only about 9.3 MW. Taking actual generation at an average 90% station efficiency, the state has today only about 8.3 MW power available during the winter months when the maximum demand occurs. Broadly the activities of the Power Department can be categorised as under,

1. Establishment (Direction and Administration)
2. Generation Programmes.
3. Transmission and Distribution Works.
4. Construction of residential and non-residential buildings for the Department.
5. Rural Electrification Programmes.

The basic approach during the 7th Five Year Plan will be :

- (i) to suitably strengthen the organisation in the department for administrative, accounts, and field work commensurate with the plan programmes,
- (ii) to augment the generation by implementation of small hydel schemes in a phased manner so as to commission the units proportionately (if not more) with the yearly rise in demand,
- (iii) to provide a matching transmission and distribution network by drawing new lines, strengthening the weaker systems and augmenting sub station capacities, as required,

- (iv) to provide residential accommodation to the class III and class IV categories of employees of the department, and
- (v) to electrify all the villages of the state by the middle of the 7th Plan and provide such relief to the weaker sections as they may require for obtaining electricity connections to their huts which will also form a part of the load development programme in the state.

Direction & Administration :

The State Power Department, which came into being towards 1975, has got two circles headed by a Superintending Engineer each and has seven Electrical and two Civil Divisions each headed by an Executive Engineer. With the proposed implementation of a good number of small hydel schemes during the Seventh Plan, it becomes necessary to strengthen the field organisation suitably. The civil wing of the department will require one separate circle headed by a Superintending Engineer with addition of one more division and three sub-divisions. Likewise, an additional Circle in Electrical wing will be required exclusively for the implementation of Rural Electrification programmes. Two more electrical divisions and four sub-divisions will have to be added. A geologist will have to be appointed for routine geological studies and advice prior to implementation of hydel schemes. As it is not possible to obtain the services of the G. S. I, as and when their services are required. Other categories of field supervisory and ministerial staff have to be added to streamline the overall working of the organisation.

Generation :

The state is endowed with abundant hydro-electric power potential with two major rivers Teesta and Rangeet, flowing across the state connecting a large number of streams. A tentative survey conducted by Central and State agencies reveal that the state contains a hydel potential of above 8000 MW during the monsoon months and about 3000 MW during the lean season. No major effort has so far been made for exploitation of this vast resource primarily because of hostile geo-physical conditions, poor communication system and, of course, the financial constraints. However, investigations on the Teesta and Rangeet valleys were taken up by the Central Water and Power Commission (CW & PC) towards the middle of the 5th Five Year Plan. A number of schemes have been identified in stages along the two river basins and detailed investigation on two schemes i.e. Rangeet stage III and Teesta stage III have been completed by the C. W. C. Of this the C. E. A. has accorded techno-economic clearance for the Rangeet stage III.- 60 MW project which is likely to be implemented during the 7th Five Year Plan under the Central sector. The Teesta Hydro-electric project stage III, having an estimated installed capacity of 1000 MW will be the biggest single project in the Teesta basin for which the D. P. R. is under preparation in the Central sector. The third major scheme for which investigations have started during 1984-85 is the stage V scheme on the Teesta Valley near Khamdong with an estimated installed capacity of 330 MW.

Implementation of major hydro-electric projects in a state like Sikkim having unpredictable geo-physical conditions, difficult terrain, frequent landslides and inherent communication constraints involve large capital expenditure and much longer commissioning period. The extent of landslides the state faced during the past 5 years in areas known to be fairly stable, has given rise to the apprehension that these young mountains may require further in-depth geological research before any major investment on the river valley projects is committed. In the meantime the pace of the state's overall development

cannot be overlooked or staggered on account of such parameters requiring long term analysis. Alternative solutions have to be brought about so that the developmental activities of no sector suffers on account of the power sector which provides the basic input to all of them.

The development of small/micro hydels in the country which has now been included in the 20 Point Programme, will go a long way to overcome this difficulty. In a small state like Sikkim where the deficit and yearly growth in demand would be limited to few Megawatts, it will not be difficult to meet such gaps and additional demands by systematic and phased implementation of small hydel schemes so that about 3 to 4 MW generation is added to the total installed capacity every year. It becomes, therefore, the primary objective of this sector to implement small hydel schemes in a planned manner so that the internal requirement of the state could be met from such schemes. The share of power likely to be available from bigger projects, which would obviously be implemented under the Central sector, should be evacuated to other states for improvement of the state's revenue.

The Lower Lagyap Hydel scheme is the only major hydel station commissioned during the 6th Five Year Plan period. Its first 6 MW unit was commissioned towards the end of 1979 and the second 6 MW unit was commissioned in 1983. The project was taken over by the state government in April, 1984. The project suffered considerable damage during 1984 monsoon due to heavy landslides in its 12 Km. long water conductor system. The diversion weirs of the three streams feeding the system were completely damaged requiring reconstruction of new weirs. It has been noticed that during April to August, 1984, the break-downs in the project due to heavy downpour, landslides, etc. have been more than frequent making the power situation critical during this period.

Stabilisation of the 12 Km. long water conductor system and strengthening the diversion weirs of this project will take some years and will involve considerable expenditure outside the scope of normal yearly maintenance works. The repairs, renovation and reconstruction work involved in the damages that occurred during the 1984 monsoons alone would account for more than Rs. 80.00 lakhs expenditure. It is, therefore, necessary that stabilisation work of the Lower Lagyap Project is given top priority during the 7th plan.

The various power stations in operation during the 6th Five year Plan period are as under. The total installed capacity yearwise is also indicated.

	1980-81	1981-82	1982-83	1983-84	1984-85
1. Lower Lagyap Hydel Project	6.0 MW	6.0 MW	6.0 MW	12.0 MW	12.0 MW
2. Rongnichu H.E. scheme	2.1 MW	2.1 MW	2.5 MW	2.5 MW	2.5 MW
3. Rimbi Hydel scheme	0.2 MW	0.4 MW	0.6 MW	0.6 MW	0.6 MW
4. Rothak Hydel scheme	0.2 MW	0.2 MW	0.2 MW	0.2 MW	0.2 MW
5. Diesel Power House, Gangtok	0.3 MW	0.3 MW	1.7 MW	1.7 MW	1.7 MW
Total :	8.8 MW	9.00 MW	11.00 MW	17.00 MW	17.00 MW

It is pertinent to mention here that the installed capacities of the hydel power stations are valid only for the rainy seasons. The generation during the lean months i. e. between October to April falls by as much as 50%. In the same period the demand increases by about 35% during the winter months due to heating load. As such the state has been facing deficit in supply during the winter. Arrangements have been made to evacuate the surplus power available during monsoons to the West Bengal system. Because of slow pace of industrialisation in the State, the bulk of power consumption is on account of domestic services. However, the industrial sector is steadily picking up and the seventh five year plan programme includes a sizeable number of industries which will boost the industrial power demand considerably and also improve the load factor. A conservative demand computed from the programme set out in the industrial sector shows that they will require about 6 MW additional power during the 7th five year plan period.

A sectorwise survey of additional power requirement has been conducted for obtaining a realistic approach for the Seventh Plan. Based on the sectorwise plan programmes the additional power requirement is given below :

Sectors year	(Demand MW)					total 85-90 MW
	85-86	86-87	87-88	88-89	89-90	
Industries	1.0	1.0	1.5	1.5	1.0	6
Govt. Bldgs.	0.5	0.5	0.4	0.5	0.6	2.50
Agriculture & ICAR	0.1	0.1	0.1	0.1	0.1	0.50
Animal Husbandry	0.1	0.1	0.1	0.1	0.1	0.50
Medical & Public Health	0.1	0.2	0.3	0.3	0.3	1.20
Forest	0.2	0.2	0.3	0.3	0.2	1.20
Defence.	0.2	0.5	0.5	1.0	1.0	3.20
Constructional Power to NHPC	0.5	0.5	0.2	0.3	—	1.50
Public utility	0.5	0.8	0.8	0.8	0.8	3.70
Misc. new sectors	0.2	0.3	0.3	0.3	0.3	1.40
Total						21.7 Say 22 MW.

With the above forecast it becomes necessary that immediate steps are taken to implement small hydel schemes to provide at least 4 MW additional installed capacity every year during the 7th Five Year Plan period. The state power department, being fully aware of the situation, has been adequately geared to take up such schemes in a phased manner so that the various agencies committed to developmental tasks do not suffer because of non-availability of power.

It is proposed to implement the following small hydel schemes during the Seventh Five Year Plan.

A. Spill over schemes.

Sl. No.	Name of Scheme	Installed Capacity MW	Remarks
1.	Rongnichu Hydel Scheme stage-II	2.50	Sanctioned in 1984-85
2.	Rimbi Hydel scheme stage-II	1.00	—do—

B. New Schemes.

Sl. No.	Name of scheme.	Installed capacity	Status of investigation.	Remarks if any
1.	Upper Rengnichu Hydel scheme.	6 MW	Investigations completed	D.P.R. under preparation
2.	Mayong Hydel scheme.	4 MW	do	D.P.R. under scrutiny with CWC & CEA
3.	Hee Hydel scheme.	1 MW	75% investigation completed	D.P.R. will be completed by mid 85-86
4.	Run Chu Hydel scheme.	6 MW	80% investigation completed	D.P.R. under preparation
5.	Rabong Hydel scheme.	4 MW	Investigation under progress	—
6.	Lower Lagyap augmentation (seasonal),	6 MW	Investigation completed	D.P.R. under preparation
7.	Rangpo Khola Hydel scheme.	1 MW	Investigation under progress	—

Implementation of each of the above schemes would take two-three years providing adequate funds, are allocated. The average estimated expenditure on the small hydel schemes in the state will be Rs 1.50 crores per MW.

C. Transmission and Distribution :

Evacuation of power to different load centres and systematic development of transmission network, form an integral part of power development programme. So far most of the transmission networks are in 11 KV voltage grade. There is only one 66 KV line between Phodong-Gangtok-Lower Lagyap and Melli which evacuates the generation from Lower Lagyap bulk of which is consumed at Gangtok itself. Long distance 11 K V transmission lines were drawn prior to 5th Five Year Plan. Primarily because of low demand in the network higher transmission voltages would have proved uneconomical during that period. With steady growth in demand in all the four districts of the state, it has become necessary to augment the transmission network by extending 66 KV lines in some cases and by strengthening the existing 11 KV lines by way of replacing conductors. In the meantime augmentation and remodeling of distribution sub-station and L. T. lines has been a major activity during the Sixth Plan.

The position of transmission and distribution network as also the distribution sub-stations during the 6th Plan period are as under :

Sl. No.	System/Unit	Cumulative achievement				
		80-81	81-82	82-83	83-84	84-85
1.	66 KV line & (CKT-KM)	68	68	73	73	73
2.	11 KV line (CKT-KM)	444	504	578	757	948
3.	403 V line (CKT-KM)	422	507	614	831	1150
4.	66/11 KV S/S (MVA)	29	29	29	32	32
5.	11/0. 43 KV S/S (MVA)	11	12	14	17	19

With the stipulated strategy for development of small hydel schemes for meeting the state's growing power demand an equally well planned transmission network connecting all such hydel stations at a desirable voltage grade is a must. Efforts will have to be made to synchronise all these power stations through a common grid which will facilitate proper supply to all the districts of the state and in the meantime provide a combined outlet for any surplus power to be evacuated to the neighbouring state of West Bengal through the inter-state line. The surplus seasonal power available during the monsoons will find an easy outlet to the various tea gardens in West Bengal across the boundary which require maximum power in the monsoons. With the above considerations and keeping in view the state's own needs during the 7th Plan period, the following transmission and distribution schemes will be considered for implementation in a phased manner depending upon priority.

1. 66 KV LINES

(i) Lower Lagyap (Tadung) to Rongli	45 KM
(ii) Melli to Gayzing	50 KM
(iii) Namchi to Jorethang industrial centre	10 KM
(iv) Link line between LLHP and Rongnichu Stage-II	15 KM

2. 66/11 KV Sub-Station

- (i) 2 x 2.5 MVA sub-station at Rongli
- (ii) 2 x 2.5 MVA sub-station at Geyzing
- (iii) 2 x 4 MVA sub-station at Jorethang

3. 11 KV New Lines.

(i) Singtam — Dikchu	20 KM
(ii) Rakdong — Pangthang	15 KM
(iii) Sakyong Nagathang to lower Khamdong	20 KM
(iv) Temi to Damthang	20 KM
(v) Rongli to Kupup (Nathula)	35 KM
(vi) Kyongkosla to Kupup (Nathula)	25 KM
(vii) Damthang to Jorethang	30 KM
(viii) Namthang - Namchi via Maniram Bhanjang	25 KM
(ix) Legshep to Tashiding	20 KM
(x) Jorethang to Sombari	30 KM

4. Strengthening 11 KV Lines.

(i) Geyzing to Legshep via Dentam-Kaluk-Rinchenpong	60 KM
(ii) Soreng to Rothak	25 KM
(iii) Jali power House to Ranipul	12 KM
(iv) Ranipul to Rongli	50 KM
(v) Singtam to Rabongla	25 KM
(vi) Gangtok town & adjoining areas	20 KM

5. 11/0.43 KV sub-stations & L. T. Lines.

(i) Singtam	300 KVA
(ii) Army Cantts. in G. N. Road.	500 KVA
(iii) Army Cantts. in Rongli Kupup sector	600 KVA
(iv) Jorethang	1500 KVA
(v) Namchi	250 KVA
(vi) Gangtok	2500 KVA
(vii) Geyzing & adjoining areas	500 KVA
(viii) L. T. Lines	200 KM.

The above transmission & distribution schemes have to be phased out suitably during the Seventh Plan. A tentative break-up is given under.

Sl. No.	Item of work/year	85-86	86-87	87-88	88-89	89-90
1.	66 KV Lines (KM)	50	45	25	10	—
2.	66/11 KV S/S (MVA)	5	10	5	4	4
3.	11 KV Lines (KM)	90	100	100	80	92
4.	11/0 43 KV S/Station (KVA)	1200	1400	1400	1200	1000
5.	L. T. Lines (KM)	30	40	50	40	40

The above statement does not include the spill over work from the 6th Five Year plan. The 11/0.43 KV distribution sub-stations for REC, Industrial and Defence sectors are not included.

Transmission and distribution losses in the power supply system is one of the major problems which has confronted the planners at the national level and the CEA has been issuing necessary guidelines for reduction of such losses. The present level of losses in the state is about 20% which is mainly attributed to weak distribution network in the localities which are still continuing with pre-1975 system. Remodelling and strengthening of such network will improve the system losses. The other factor is the pilferage in the system. This problem requires more careful and fool-proof techniques and management improvement. The Power department has already introduced and enforced several administrative measures for minimising the pilferage by consumers and positive results have been forthcoming. Reduction of losses is one of the major programmes the Department will campaign for vigorously during the 7th Plan. The weaker T & D networks will be strengthened and strict measures will be initiated to detect the unauthorised consumption of energy.

D. Construction of Buildings :

The activities of the power sector prior to 1975 was only limited to supply of power to the urban localities in and around Gangtok, few towns like Singtam and Rangpo and the district headquarters of South, West and North. The field organisation in Divisional and Sub Divisional levels were, therefore, located in

and around Gangtok only which continued till the end of 5th Five Year plan. With increased activities and stress on rural development programmes in the Sixth Five Year plan, two field Divisions have been established outside Gangtok, one each at Singtam and Jorethang (West). Now that the generation, transmission and distribution works and Rural Electrification programmes have been spread all over the state in more or less equal proportion and the activities in the 7th Plan are more rural based, it becomes necessary to establish at least two divisions and four sub-divisions in new localities to provide effective field supervision and also minimise public inconvenience for obtaining the services of the organisation. The proposal involves creation of basic infrastructure for establishment of new offices like acquisition of land, construction of residential and non-residential buildings, approach roads, etc. The 7th Plan proposals cover this important aspect adequately. Besides this, the 1500 and odd Class III and IV categories of employees now on the roll of the Power department have not been provided with any residential accommodation. These employees are spread all over the state and have been agitating for Government accommodation. Rental accommodations are exorbitantly costly in every part of Sikkim and the HRA allowed to these categories of employees is very nominal. It has become necessary that government quarters are constructed to provide this basic amenity to low paid employees which will improve the functioning of the organisation at large.

E. Rural Electrification :

The Rural Electrification programme started in the state as late as 1976 Till the end of the 5th Five Year plan, only 45 Panchayat Blocks were provided with electricity in the rural areas. Since these programmes were implemented within the limited state plan allocations, only few localities having the maximum density of households were electrified which did not cover more than 10-15% of the total households in the Panchayat Blocks. As such, these 45 villages which have been declared as electrified require major extension work for meaningful coverage of the rural population.

A realistic approach to this most important rural programme was made only in 1980-81 when schemes prepared according to the guidelines provided and financed by the Rural Electrification Corporation were introduced in the State.

According to 1981 census a Revenue Block has been identified as the unit of a village and there are 405 Revenue Blocks in the state. It may be mentioned here that the state has 314 Panchayat Blocks according to 1971 census which were taken as the total number of villages till 1981.

Unlike villages in the plains, which are clustered in pockets, the configuration here is very scattered. Though the North District covers more than half of the state's area it has only 45 Revenue Blocks accounting for about 9% of the state's total population of 3.16 lakhs. This district is predominantly inhabited by the tribals and has been identified as a Tribal district for all developmental purpose. Because of highly scattered households in each of the revenue blocks, the expenditure in providing the transmission and distribution infrastructure for supply of power to these villages is exorbitantly high. The average estimate for electrification of villages in North district is about Rs. 12.00 lakhs while in other three districts is about Rs. 7.5 lakhs which is much higher in comparison to the villages in the plains. The hostile terrain, uneven altitude variations and communication constraints render the Rural Electrification programmes more problematic and costly.

The level of village electrification in the four districts till the end of 6th Plan is presented below :

District	Total Revenue Blocks	Revenue Blocks electrified as on 31.3.80	Actuals				Total Electrified as on	
			80-81	81-82	82-83	83-84	84-85	31.3.85
East	114	18	13	8	15	4	15	73
West	111	17	3	2	2	13	11	48
North	45	3	3	8	6	—	6	26
South	135	7	3	3	1	25	20	59
TOTAL :	405	45	22	21	24	42	52	206

It would be seen from the above table that a total of 199 revenue blocks are required to be electrified during the seventh Five Year plan for 100% village electrification in the state. According to a programme jointly worked out by the state Power department and the Rural Electrification Corporation, 100% electrification will be achieved in 1990 only. The year-wise village electrification targets proposed are as under :

Actual as on 31.3.80	Actuals Target		Proposed				
	80-84	84-85	85-86	86-87	87-88	88-89	89-90
45	109	52	51	52	45	34	17

Despite the priority accorded to village electrification under the 20 Point Programme of the country, the targets proposed for 7th Five Year plan are rather conservative.

Financial Component

For meeting the requirement of the projects detailed above an outlay of Rs. 4200 lakhs has been proposed for the Seventh Plan.

POWER

GN 2

(Rs. in lakhs)

Name of the Scheme/ Projects	Sixth Five year Plan (1980-85) Agreed outlay.	1980-83 Actual expendi- ture.	1983-84 Actual expendi- ture.	1984-85		Seventh Plan (1985-90)		1985-86	
				Appd. Out lay	Anti. Expen- diture.	Proposed Outlay	of which Capital content	proposed Outlay.	of which Capital content.
1	2	3	4	5	6	7	8	9	10
Power									
Development	29.00	18.30	7.09	8.00	8.00	25.00	—	5.00	—
Power Projects	241.00	234.31	31.06	56.00	56.00	2607.00	2607.00	3.70	370.00
Transmission and Distribution	655.00	297.73	75.67	120.00	120.00	1000.00	1000.00	175.00	175.00
Direction and Administration	95.00	47.74	35.89	34.00	34.00	250.00	—	45.00	—
Buildings	—	37.86	27.34	30.00	30.00	180.00	180.00	35.00	35.00
Rural Electrification	180.00	168.50	62.26	50.00	50.00	138.00	—	50.00	—
	1200.00	804.44	239.31	298.00	298.00	4200.00	3787.00	680.00	580.00

POWER

GN 3

(Rs. in lakhs)

Sl. No.	Item	Code No.	Unit	Sixth Five Year Plan (1980-85) Target	1980-83 Achievement	1983-84 Achievement	1984-85 Target	Anti-cipated Ach.	Seventh Plan (1985-90) Target proposed	1985-86 Target proposed
1	2	3	4	5	6	7	8	9	10	11
	1. INSTALLED CAPACITY		MW (Cumulative)	17.00	17.00	17.00	17.00	18.00	36.50	18.00
	2. Electricity Generated									
	a) Rongnichu.		MKwh.	8.90	12.84	3.94	15.00	5.00	28.00	5.40
	b) Rimbi.		"	2.20	3.57	0.85	1.80	1.00	6.70	1.30
	c) Rothak.		"	0.20	1.46	0.11	0.60	0.20	2.10	0.40
	d) Lower Lagyap		"	33.80	45.51	22.76	50.00	20.00	130.85	25.20
	e) Diesel.		"	-	1.445	0.11	-	0.20	1.00	0.20
	f) Rongnichu Stage-II		-	-	-	-	-	-	16.70	-
	g) Rimbi Stage-II.		-	-	-	-	-	-	6.55	-
	h) Myongchu.		-	-	-	-	-	-	8.60	-
	i) LL HP (Augmentation)		-	-	-	-	-	-	-	-
	j) Upper Rongnichu.		-	-	-	-	-	-	-	-
	k) Hee Hydel Scheme.		-	-	-	-	-	-	-	-
	Total :			45.10	64.825	27.77	66.40	26.40	200.50	32.50
	3. Electricity sold		Mkwh,							
	A) Within the State			37.62	42.78	15.70	27.30	18.00	130.75	22.95
	B) Outside the State			6.00	2.38	2.22	22.30	2.30	21.70	3.50
	Total :			43.62	45.16	17.92	49.60	20.30	152.45	26.45
	4. Transmission Line (200 KV and above)		Km.	-	-	-	-	-	-	-
	5. Rural Electrification									
	a) Villages covered		No.	144	67	42	52	52	199	51

Industries

A. VILLAGE AND SMALL

Introduction

The scope of industrial development particularly in the small scale sector is fairly considerable in the state. Despite the inherent problems of transportation, difficult communication, lack of raw material and general shortage of entrepreneurial talent there has been progress in the sphere of small scale development during the past few years. Unlike in other states the scope however is somewhat limited because of the difficulty in locating markets in the vicinity and also the infrastructural difficulties like inaccessibility, power shortage and water problems. Industrial development in the state therefore has to take into account the need to provide various incentives.

Directorate of Industries :

A Directorate of Industries was established in 1976 to look after all aspects related to the industrialisation of the state more particularly in the small scale sector. During the 6th Plan period the Small Industries Services Institute of the Government of India was also established. As a result of the establishment of the Directorate of Industries so far registration has been offered to 360 units of which 250 in the Cottage and Small Scale sector have already been established creating employment opportunities for about 4500 persons. The trend in the growth of small scale and cottage industries can be gauged from the following table which shows a steady pattern of growth from the base year 1980-81.

Item	1980-81	1981-82	1982-83	1983-84	1984-85 (target)
No. of Units					
(a) Registered	58	105	156	220	260
(b) Unregistered	125	180	240	300	350
Employment	1500	2000	3000	4000	—

Growth of industrial units in the Seventh Plan assumes great importance because more and more people are likely to come out of schools and colleges after attaining basic level of education after which there is a certain amount of reluctance in going back to their homesteads to take to farming activities. The answer to such unemployment is rapid industrial development particularly in the small scale sector where high technological skills are not called for.

Review :

Apart from providing all the facilities to potential entrepreneurs for setting up industrial units in the form of granting licences, providing for the procurement of raw material and helping in the marketing, the department has also been following a promotional role. Out of these, the move to enthuse more entrepreneurs to go in for actual production assumes a place of importance. The department conducted 3 entrepreneurship development programmes with the help of outside institutes like the Small Industries Extension Training Institute of Hyderabad and the SISI of Government of India. Various incentives available for backward areas

like capital subsidy, transport subsidy, subsidy on interest, concessional rates in power, sales and income tax, hire purchase facilities and preoperative expenses were extended to industrial units and wide publicity given to such units. On date 70 such industrial units have availed themselves of the subsidies.

The Industries Directorate has also extended loans up to Rs. 10,000/- to small entrepreneurs with low interest rates. 560 such cases were disposed of for small loans for purposes like carpet weaving, cane, and bamboo works, cutting, knitting, and handloom etc. Loans beyond Rs. 10,000/- are granted by the Sikkim Industrial Development and Investment Corporation. During the plan period the SIDICO has granted loans amounting to Rs. 4.02 crores in favour of 220 industrial units which include certain hotels.

District Industries Centres :

It was during the Sixth Plan that the District Industries Centres, which was set up in Jorethang in 1978, really became functional. The DIC has been engaged in the promotion and development of industries in the district besides helping the entrepreneurs in procurement of raw material for their units. It has also been instrumental in conducting training programmes for rural youth in crafts like carpet weaving, thanka painting, cane and bamboo work etc. The DIC has helped some of these entrepreneurs in securing loans for starting their own production units.

One mini Industrial estate at Jorethang with 12 sheds has also been completed and at present the premises are being improved by the construction of internal roads, water supply and electrification. Meanwhile, an industrial area nearby Rothak was also developed but in view of the fact that it is little out of the way without proper facilities not many industrialists have gone to that Centre.

Government Institute of Cottage Industries :

A word or two may be mentioned about the Government Institute of Cottage Industries which is a training-cum-production centre primarily for preservation of ancient and traditional crafts of the state. It was established in 1957 with just 25 trainees. Today the strength of the trainees has gone to about 400 and training is imparted in various fields like carpet weaving, thanka painting, wood carving, blanket weaving, cane weaving, Lepcha weaving and multi crafts which include tailoring, leather working, doll making etc. The object of the training is not only to preserve the age old well known crafts and arts of Sikkim but also to provide job opportunities to the trainees after the successful completion of their training.

During the last four years of the Sixth Five Year Plan, 216 young boys and girls have successfully completed their training. Out of these passed out trainees, 192 of them are engaged as paid workers in the Institute on piece rate basis. During the period under review these paid workers have produced items worth Rs. 27.92 lakhs. Between June 1980 and May, 1982 ten of the senior paid workers have been appointed in regular posts of teachers. Few of them have opened their own units with the help of the Directorate of Industries. In addition to this, 305 weavers have been helped by the Field Level Organisation of the Institute with raw materials and accessories. These weavers have produced carpets, blankets and tsuktook worth Rs. 11.98 lakhs during the period under review. Although initially they worked on 50-50 basis yet at the moment all of them prefer to work on piece rate basis.

The Sales Emporium located within the premises of the Institute has sold goods like handicrafts etc. worth Rs. 26.85 lakhs during 1980-81 to 1983-84. On public demand three Curio Counters have been

opened at Pemayangtse Tourist Lodge ; Tourist Information Office, Siliguri and Sikkim Centre, Bombay where GICI's products are displayed and are being sold by the Tourism Department, Government of Sikkim.

In order to meet the persistent demand of the public of Lachen and Gyalshing, two branch Centres of GICI were opened in these areas (one at Lachen and another at Pelling) during the Sixth Plan. 72 young boys and girls are undergoing training in these two Centres in various trades. Field Level Organisation of the Institute has opened a Carpet Weaving Unit at Martam where 10 former trainees of GICI are working under one roof under the FLO scheme.

During the period under review the Institute has created the infrastructure for rapid progress and has made additions and extension to the existing buildings in order to accommodate the increasing number of trainees and paid workers and provide residential facilities to teachers posted outside Gangtok. Three officers of this Institute also underwent training in advance courses in various parts of India.

GICI has also successfully participated in a number of state level, National and International Trade Fairs both within and outside Sikkim during the last four years.

Sikkim Khadi & Village Industries Board :

The Sikkim Khadi and Village Industries Board was set up in 1974 to look after various activities falling under the purview of Khadi and Village Industries. Since then, the Board has been expanding its activities all over the state by way of organizing training programmes in Khadi weaving, hand made paper, apiary, leather industries, fibre making, carpentry, blacksmithy, etc. A number of training-cum-production centres have also been established by the Board which include schemes involving use of locally available raw materials. During the Sixth Five Year Plan period, the Board conducted a number of training programmes and about 1000 persons have been trained. During the training period, the trainees are paid a monthly stipend of Rs. 100/- per trainee. As a result of these training programmes, about 650 persons have come forward to set up their self employment ventures. The most important feature of the Sixth plan is that a hand made paper unit has already been established with a capacity of 6 tonnes per month employing 30 persons. Besides, the Gobar Gas Scheme also took roots.

The Sikkim Khadi and Village Industries Board has been able to provide employment to about 1500 persons during the Sixth Plan period (Khadi-517 persons and Village Industries - 997 persons). The Board is managing 11 training-cum-production centres covering all the four districts of the state and the production is increasing constantly. During the first four years of the Sixth Plan period, the Board advanced loans to 219 persons for engaging in production of cane and bamboo works, blacksmithy, carpentry and leather products besides beaten rice, aluminium utensils, water guarat, etc.

The main objectives of industrial development in the small scale sector will be :

- (i) to upgrade technology and simultaneously modernise the existing industries for better utilisation of assets;
- (ii) to develop local entrepreneurship by organising promotional programmes and exposing entrepreneurs to new techniques and ideas;

(iii) to create the infrastructural facilities by developing land and constructing industrial estates in suitable locations;

iv) to look out and plan for type of industries that can be sustained by interacting with sister departments and analysing their needs and requirements, and

(v) to encourage new units to go in for high value low volume products including the setting up of power intensive units with captive hydro electric power generation systems.

To some extent the schemes of the 7th plan will be only continuations of those under implementation during the 6th plan. In addition, incentives to new industries including modernisation, entrepreneurship development, training to rural artisans and a wider information and publicity set up will be organised with the objective of creating a better industrial climate. The natural difficulties of industrial development in a hill state will be sought to be overcome by providing meaningful incentives on a more liberal scale and by extending such incentives to all categories of industries who invest up to a limit of Rs. 25 lakhs in plant and machinery. As far as modernisation is concerned there is urgent need to improve the productivity of several families engaged in various traditional crafts but who use obsolete and out-dated tools and equipments. The units requiring modernisation will be helped out in areas like management, lay out of the unit, and marketing. The question of enthrusting more people to take to industries is of vital importance. Confidence needed for the purpose has to be engendered. Apart from organising entrepreneurship development programmes in conjunction with All India Institutes, suitable candidates are proposed to be sent to outside Industries so as to familiarize themselves with the actual methods of small scale entrepreneurs. The saying that 'seeing is believing' is very much applicable to entrepreneurial development and so this will be given high priority. The training of rural artisans at the village level in household enterprises like cutting and tailoring, carpet weaving and carpentry etc. is an on going programme which will be carried forth with the help of the S.R.D.A (TRYSEM) with the target of covering more and more poorer families and equipping them with the basic skills. Mere training is of no use and hence the accent in the 7th Plan will be to provide self employment opportunities to all such candidates by providing institutional loans and enabling them to purchase the needed raw material and equipment to start new units.

The Industries department is also responsible for providing loans to small units up to Rs. 10,000/- each and although the amount when one considers the cost of material in the present day is not much it is a popular scheme particularly among the poorer sections. The district industries centre at Jorethang, which was set up in 1978, has already succeeded in providing the small entrepreneurs of that area with needed facilities. During the plan this centre will also be strengthened. There are no two opinions that the development of industries will depend to a great extent on setting up of industrial estates with suitable sheds, where all needed facilities are provided to entrepreneurs. The industrial estate at Jorethang will be made complete in all respects and during the plan a few other areas strategically located between Rangpo and Gangtok will also be taken up for the purpose of making industrial sheds.

Handloom and Handicrafts :

The state is very rich in traditional handicrafts and handloom the more significant among them being thanka painting, cane and bamboo craft, metal craft, lukuni weaving etc. The Government Institute of

Cottage Industries, with its main centre in Gangtok and branches in various places including certain remote areas of north Sikkim will be the premier institution for imparting training in crafts. During the 7th Plan the number of trainees will be increased and the possibility of adding a few more traditional crafts in the sphere of training will be explored. All possible efforts will be made to absorb maximum number of passed out trainees either as paid workers in the Institute or as beneficiaries under the FLO scheme. Field Level Organisation will open more units like the one at Martam which is running very successfully. During the next five years FLO proposes to open 15 such units. The plan will not only facilitate ex-trainees of a particular region to work under one roof but will also help the department to inspect and supervise their weaving, which is done for the Institute. These weavers who work on wages for GICI thus get the facilities of continuing the trades they learnt in the institute at their own doorstep.

GICI has been able to procure the money changer's licence from the Reserve Bank of India and is now trying for an export licence from the Government of India and rebate in bulk sale from the Government of Sikkim. After obtaining the licence and approval for rebate, the department will explore the possibilities of opening its door to foreign customers and businessmen interested in making bulk purchases subject to production being commensurate with that of demand. GICI also has a Handmade Paper Unit within its premises which produces file covers and boards, note sheets, envelopes for sister departments and also makes greeting cards gift wrapping paper, photo albums and autographs, writing pads and host of other products. Handmade paper is in big demand both within and outside India and with the help of government it is hoped to capture bigger markets during the Seventh Plan.

Continued efforts will be made to fulfil the primary aim of the Institute i.e. preservation of traditional arts and crafts of Sikkim. In order to achieve this objective more young boys and girls will be trained in these trades and made self-sufficient after the completion of their training. The Institute will spare no efforts to help its ex-trainees to stand on their own feet through its various wings like production and FLO during the next Five Year Plan as it has been doing all along. Already the GICI has trained up more than 900 boys and girls and employed (permanent as well as paid workers) over 500 and plan to double this figure during the next five years.

Cottage Industries Development Corporation :

Due to certain inherent factors which offer limited scope for the promotion and development of small and medium industries in the state and also to handle the growing unemployment problem and provide supplementary income to the rural masses, the promotion and development of cottage industries in the rural areas is a long felt need. Further to this, the rural folk of the state have got specific talent for making cottage industry products like hand knitted woollen carpets, cane and bamboo products, engraved wooden articles, etc. The skill is already available with the rural artisans who are scattered all over the state and is traditional as well as specific for the state. It is proposed to set up a Cottage Industries Development Corporation during the Seventh Plan with the sole objective of providing the required raw materials on a sustained basis, financial assistance, marketing support and also to modernise the existing skills, etc.

The Sikkim Khadi & Village Industries Board will streamline the existing training-cum-production centres by endeavouring to have all allied production activities under one roof. This will ensure that those participating in the training will not have to go from place to place and in addition the quality of the supervisory input can also be improved. Thus, the accent in the Seventh Plan will be to consolidate the centres by making them fully viable instead of opening more and more centres and spreading available resources thinly. However,

expansion cannot be completely ignored and consequently just one additional centre at Singtam is proposed to be set up during the plan.

The training aspect will continue to be given all importance. Unfortunately, most of the trained workers have not been able to continue the pursuit of the Khadi profession primarily on account of low wages. This constraint will be gradually overcome by providing post training facilities in the form of guidance so that with the help of institutional agencies and the Government, trained workers would be able to start their own professional activities.

The Khadi training-cum production centre at Deorali, which is one of the oldest institutions is currently running in a dilapidated wooden structure. Plans have already been drawn up to construct another modern building which will be a major centre for the training-cum-production in the plan. A similar building is also proposed to be constructed at Namchi in south Sikkim, for which purpose, a suitable site has already been allotted to the Khadi Board. The plan for the next 5 years also takes into account the residential requirements of the staff of the Board who are not all Government employees. These will be constructed not only in Gangtok but also in outlying areas.

While Khadi is a National programme, it is in the field of village industries where attention needs to be focused. Whether these are small home units or departmental units there is considerable potential to be explored using locally available raw material consistent with local market demands. The departmental units which have been geared up in the past 2 to 3 years require certain amount of strength particularly on the managerial side since the ultimate viability of these depend upon a sustained market-cum-production drive.

Among the units contemplated are carpentry, black smithy, honey making, gohar gas, production of medicines from local herbs, paddy processing units and fibre units. In all these units the strategy will be to provide better and more productive machinery, imaginative managerial personnel and a marketing system. Among the units already in existence mention has to be made of the hand made paper unit which has already gone into production but which requires further machinery like driers, required for speedier processing within the plant.

Sericulture is another area where the state has got tremendous potential, but because of the lack of direction, the industry has not taken roots. Every attempt will be made to integrate sericulture development with the Forest department which is responsible for propagating mulberry bushes.

It goes without saying that with a wider ambit of developmental activities contemplated by the Industries Department, there is a need to strengthen the Directorate by inducting technically qualified personnel in different disciplines like electronics so that each sphere of activity gets the needed fillip. Since the days of technology are fast changing, there is also need to have a cell in the department in charge of appropriate technology which would study the question of eliminating the element of drudgery that is omnipresent in most of the industrial activities of the state. The cell will maintain liaison with the regional laboratories of the country, equip itself with a technical laboratory and take measures to establish a general mechanical and electronic workshop so that it continuously looks into all aspects of technology development.

B. LARGE AND MEDIUM

There is not much scope for setting up large industrial units in the state because of the terrain which is entirely mountainous and the distance from the railhead to the factories. In addition, the availability of flat land to house large industrial units is next to nothing. The result is that at the most only medium industries can survive in the state. In the case of medium units also the scope is somewhat limited in view of the inherent problems. Despite these drawbacks, as a result of conscious attempts made by the Government during the past few years, a few units mainly in the public and joint sectors have come up which need to be strengthened. The oldest units in Sikkim are the Sikkim Distilleries at Rangpo, the Mining Corporation and the Fruit Preservation Factory. These units except the Mining Corporation are doing well but they require to be further strengthened by diversification and by modernisation

Among the units that have come up more recently are the Sikkim Time Corporation, Sikkim Jewels, Roller Flour Mill and the Tea Garden. All these units are faring satisfactorily, making good profits and looking forward to a more dynamic future. The Sikkim Industrial Development Corporation which was set up only just before the Sixth Plan has played a useful role not only in promotional activities but also in providing the needed finances through the IDBI to various industrial units in the state. These units are mostly in the small scale sector, SIDICO has also participated either by taking shares or by providing loans in some of the public sector and joint sector undertakings.

The strategy in the Seventh plan will be to improve upon the production processes by consolidation of existing units and going in for new units only where all factors are congenial for production. These include the raw material availability, easy marketing and generation of both skilled and unskilled employment. A unit of the West Bengal Consultancy Organisation (WEBCON) has already been set-up in Gangtok which is expressly charged with the responsibility of conducting industrial potential surveys. So far as existing units are concerned, as already mentioned, the accent will be on consolidation with expansion taking place only after optimum utilisation of existing capacities.

The Roller Flour Mill which went into commercial production from June 1980 is today operating with the capacity of producing 30 tonnes per day. There is an unfulfilled demand from the armed forces as well as the civilian population and accordingly a proposal to increase the capacity from 30 to 50 metric tonnes is already on the anvil. This will be taken up as a priority item because it takes into account the full utilisation of existing capacity. It will also provide more employment opportunities and could increase the number of employees from 150 to somewhere around 200 when it is fully functional. The Roller Flour Mill runs on a system of concurrent maintenance. This implies that the machinery, particularly the rollers will have to be kept in good working condition and consequently every few years some of the old ones will have to be replaced or serviced properly so that there is optimality in production. Old roller bodies are proposed to be replaced with imported ones. During the Seventh plan a part of the resources will be earmarked for this purpose. The financial assistance from Government will be kept at a minimal level and the undertaking encouraged to use its own internal resources and institutional sources of money.

In view of the good progress achieved by the Flour Mill, the Government entrusted it with the responsibility of producing extrusion food for the nutrition programme by utilising an extrusion cooker

provided as a gift by the UNICEF. This plant has been commissioned. During the Seventh Plan and the management will not only undertake production but will also cater to the distribution system so as to ensure that the food reaches the beneficiaries in time. A modern packaging section and a well equipped laboratory will also be added to the factory.

There is need to construct more quarters for the employees of the mill and also to provide facilities like recreation club, dispensary and so on.

The management of the Flour Mill has also been entrusted with the task of putting up a cold storage unit of approximately 2,000 metric tonne capacity at Majitar. The project has barely got off the ground and hence a major portion of the work will be undertaken during the first part of the Seventh plan. A soyabean processing plant for production of soya grits is a part of the diversification programme.

Another important and up and coming unit in the State is the Sikkim Time Corporation which was set up before the Sixth Plan commenced. This unit, which started as an ancillary of the HMT, has put in a unique performance in the sense that it has every year exceeded the targets of watch assembly set by the mother unit. Consequently, the HMT has declared this as the best ancillary unit out of the eleven units in the country. The production figures in the past few years is given below.

Year.	No. of watches assembled.
1979—80	2,10,185
1980—81	2,64,925
1981—82	3,33,263
1982—83	3,76,508
1983—84	3,57,814

In view of the impressive performance of the unit, the HMT has given its authority to diversify into the field of producing watch crowns. The infrastructure required for this purpose was met almost wholly from the internal resources of the company and today it is in a position to manufacture up to 2 million crowns per annum. The unit has also diversified into production of quartz clocks which is an item of considerable demand in the domestic market today. Thus from a mere ancillary of the HMT, the Sikkim Time Corporation today is one of the premier units of the State, able to stand on its own legs and able to look forward with confidence to the future.

During the Seventh Plan, the Time Corporation will consolidate its earlier efforts but will add to some of the mechanical facilities needed more particularly in setting up of tool room facility. The need for tool making jobs which requires precision has been felt very widely. Lack of a tool room necessitated sending of various parts of machinery for repair outside the State. As in the case of other units, the Time Corporation also requires a little more infrastructure facilities in the form of residential accommodation to house some of its employees. This aspect will also be given due consideration.

Another well established unit in the state is the Fruit Preservation Factory at Singtam which is one of the oldest units the state. The factory has increased its output with the installation of a polycitrus machine and today it is geared to receiving more input which, as a result of the horticultural development programme, is on the increase. The Fruit Preservation Factory has been encountering certain marketing

problems because of the lack of liquidity and the tie up with institutional purchases. The National Productivity Council made a study of the unit and gave a report as to how it should go about the task of improving its production. This aspect will be given serious consideration during the Seventh Plan. The factory is running as a departmental unit which means it is an adjunct of the Government. The possibility of converting it into an autonomous corporation will also be given due consideration. Among the areas of diversification, pectin manufacturing holds out the maximum promise and to that extent a technical feasibility report will be got prepared. Stress will be given to improve the capacity utilisation of the existing plant by processing fruits like plums and guava which have hitherto not been processed in the same way as pineapples and oranges. In order to avoid liquidity problems, the strategy in the Seventh plan will be reshaped to capture the retail market in as many places as possible because it is only through such outlets that one can avoid the blocking of finance.

In general, for improving agro based industry, small entrepreneurs will also be encouraged to go in for semi-processing of fruits at focal points and to supply such material to the fruit factory for making value added products.

The programmes envisaged in the Seventh plan are :

- (i) to adopt aseptic packaging systems in order to reduce the cost of tins,
- (ii) to instal a separate pasteuriser and clarifier for pineapple and mango juice, and
- (iii) to fit in an automatic bottle filling unit. The factory will also be helped to increase its mobility by providing more trucks.

The Singtam factory essentially caters to the orange growers and other fruit growers in and around Singtam. There are however a number of orchardists in the South and West districts in the hinterland of Jorethang and a proposal to set up a fruit factory and vegetable canning unit at Rothak is already under the consideration of the government which would supplement the efforts of the fruit factory. The juice produced from this concern is expected to be packed in tetrapacks. This unit is also expected to go into the production of items like jams, jellies, dehydrated vegetables and pickles.

Located in the famous geographical zone of the Darjeeling tea garden, the prospect of growing tea in Sikkim has always been considered to be very bright. So far, tea cultivation in the state has been rather sluggish because it is only the government that is running a tea garden. This situation is likely to continue for some more time because of certain constraints like attracting the larger tea houses, obtaining land and in formulating competitive ventures.

The Government owned tea garden at Temi has, however, already established a name for itself in the tea market as a result of assiduous efforts undertaken in clearing and cultivating nearly 500 acres of land and in planting some of the best known clonal varieties of Darjeeling tea in this area. During the Sixth plan period the tea cultivation in this area was undertaken in three stages. The first stage was land development where steep slopes were conditioned and made plantable. The second stage was the planting of young seedlings which included manuring, tending and weeding. The third stage consisted of plucking followed by processing of tea in the modern tea factory at Temi. During the Sixth Plan 1,68,126 kgs of tea was produced and there was a sales realisation of Rs, 47.97 lakhs. The garden provides good employment opportunity bringing in additional revenue to the state at the same time.

In the Seventh plan the main area of focus will be to acquire more lands adjoining the Temi Tea Estate so as to make the plantation economically viable. Additions will be made to the machinery and equipment in the factory premises and the marketing aspects will be somewhat diversified by selling more of packet tea both within and outside the state. Facilities for labour accommodation will be given the needed stress.

Sikkim Industrial Development and Investment Corporation :

The Sikkim Industrial Development and Investment Corporation was established in 1977 with the dual objective of functioning as the state's financial corporation and also to promote the industrialisation of the state making it the authority for procuring raw materials, for providing financial assistance in preparing projects and in marketing. The authorised share capital of the SIDICO is Rs. 200 lakhs out of which Rs. 91.30 lakhs have already been paid up by the state government and Rs. 38 lakhs by the IDBI.

Since its inception SIDICO has played a leading role in promotion and development of Industries, particularly in the small and medium sector by providing loans on a timely basis through the refinance window of the IDBI. During the last four years it has financed term loans amounting to Rs. 201.95 lakhs to 128 units details of which are given below :

Year	Amount	No. of units
1980-81	Rs. 32.34 lakhs	23
1981-82	Rs. 39.69 lakhs	29
1982-83	Rs. 42.17 lakhs	19
1983-84	Rs. 87.75 lakhs	57

The SIDICO has also participated in the share capital of some of the joint venture units and therefore it has also taken a leading role in providing a managerial input to up coming and industrial units of the state.

During the Seventh plan period the corporation has a target to grant assistance by way of loans to the extent of Rs. 16 crores and to take equity share capital to the extent of Rs. 5 crores in various units. Besides sanctioning assistance to industrial units and hotel projects some of the specific projects that are proposed to be financed during the Seventh plan are :

- (i) Two solvent extraction plants based on cardamom and ginger ;
- (ii) T. V. assembly unit ;
- (iii) Colour picture tube unit ;
- (iv) A mini cement unit ;
- (v) A hard gelatine capsule unit.
- (vi) A Vanaspati unit.

These proposals will be financed by the SIDICO through loan and equity by tapping the resources of IDBI and using its own internal resources. This will necessitate a higher ratio of the state's equity for which suitable provision will be made in the plan.

Phytochemical Corporation :

The state has different climatic zones and the present land use pattern is primarily based on agricultural activities, namely growing of vegetables and cultivation of maize, paddy, etc. In order to increase the yield from such agricultural land, it is proposed that besides the traditional agricultural activities, the cultivation of medicinal plants and herbs in a selective manner will be taken up. In addition to production of such plants and herbs in the agricultural lands through prospective farmers, the naturally grown items like dioscorea, digitalis, jatamasi, chirata, beladona, etc. which are found wild in the forest areas can also be collected and processed in a processing centre. During the current financial year, the department has already invited scientists from the Regional Research Laboratory, Jammu to locate suitable areas in the state where such activities could be undertaken and prepare a feasibility report thereon.

In order to plan and implement the various activities like collection of medicinal plants and herbs from the forest areas, cultivation of such plants and herbs in agricultural land and the processing of such plants and herbs within the state and ultimately marketing the semifinished/finished products within the country and abroad, a Phytochemical unit will be formed. The corporation, after its formation, shall also seek financial assistance from the Industrial Development Bank of India for its processing plant and through NABARD for the agricultural activities which include cultivation and production of medicinal plants and herbs.

In order, therefore, to implement the new scheme for the exploitation of the medicinal and aromatic plants and herbs which are available in the forest areas, cultivation of such plants and herbs, processing of the raw material for getting semifinished/finished products and to market the products, the corporation is to be provided with suitable seed money assistance.

Electronic Development Corporation :

Keeping in view the priority accorded by the government of India to electronic industries, it may be appropriate to plan for the development of electronic industries in the state of Sikkim. In order to plan and establish electronic industries in the state, an Electronic Development Corporation is proposed to be established in the Seventh Five Year Plan. In case of an independent Corporation not being viable, a subsidiary of the Sikkim Industrial Development & Investment Corporation Limited may also serve the purpose.

Financial Dimension :

A total of Rs. 10.50 crores is proposed for the 7th plan including amounts for village and small scale industries, medium industries and the tea garden.

INDUSTRIES

GN 2

(Rs. in lakhs)

Name of the Scheme/ Projects	Sixth Five year Plan (1980-85) Agreed outlay.	1980-83 Actual expendi- ture.	1983-84 Actual expendi- ture.	1984-85		Seventh Plan (1985-90)		1985-86	
				Appd. Out lay	Anti. Expen- diture.	Proposed Outlay	of which Capital content	proposed Outlay.	of which Capital content.
1	2	3	4	5	6	7	8	9	10
Small Scale Industries	66.00	28.23	14.45	14.00	14.00	80.00	—	13.50	—
Industrial Estate	80.00	9.52	5.00	7.00	7.00	100.00	90.00	40.00	38.00
Handloom, Handicrafts & Sericulture	13.00	3.06	0.75	1.00	1.00	—	—	—	—
Khadi & Village Industries	75.00	37.55	17.25	18.00	18.00	140.00	40.00	23.00	10.00
Cottage Industries Development Corporation	—	—	—	—	—	50.00	50.00	1.00	—
Manpower & Techno- logy Development	—	—	—	—	—	10.00	—	1.50	—
SIDICO	50.00	38.00	22.00	20.00	20.00	120.00	120.00	25.00	25.00
Roller Flour Mills	18.00	26.00	8.00	10.00	10.00	40.00	28.00	10.00	7.00
SITCO	42.00	10.00	4.00	1.00	1.00	40.00	—	5.00	—
Govt Fruit preservation Factory	59.00	35.50	4.00	3.00	3.00	80.00	70.00	11.00	9.00
Tea Garden	150.00	88.85	33.00	33.00	33.00	200.00	150.00	35.00	25.00
Industrial Survey & Reports	5.00	0.89	1.00	1.00	1.00	5.00	—	1.00	—
Fruit Processing & Vegetable Canning	—	—	—	—	—	20.00	—	2.00	—
Phyto Chemical Indus- tries Corporation	—	—	—	—	—	15.00	—	2.00	—
GICI	126.00	21.12	28.50	30.00	30.00	150.00	—	28.00	—
TOTAL	684.00	298.72	137.95	138.00	138.00	1050.00	548.00	198.00	114.00

INDUSTRIES

GN 3

Item	Unit	Sixth Five Year Plan (1980-85) Target	1980-83 Achieve- ment	1983-84 Achieve- ment	1984-85 Target	Anti- cipated Ach.	Seventh Plan (1985-90) Target proposed	1985-86 Target proposed
1	2	3	4	5	6	7	8	9
Small Scale Industries								
a) Units functioning	Nos.	180	156	190	215	230	300	60
b) Production	Rs. in lacs	983.40	720.00	525.00	650	650	1000	200
c) Persons employed	Nos.	1300	800	1100	1300	1550	3000	800
Industrial Estate/Area								
a) Estates/Areas functioning	Nos.	4	3	3	4	3	6	4
b) No. of units	Nos.	60	4	6	15	19	50	10
c) Production	Rs. in lacs	500.00	270.00	380.00	510.00	510.00	700.00	120.00
d) Employment	Nos.	300	210	240	300	300	200	50
Handloom Industries								
a) Production	Mtrs.	15,000	—	—	—	—	—	—
b) Employment	Nos.	16	—	—	—	—	—	—
Handicrafts								
a) Production	Rs. in lacs	4.20	3.50	4.30	6.00	6.00	20.00	4.00
b) Employment	Nos.	210	85	120	165	165	400	80
District Industries Centre								
a) No. of units assisted	Nos.	28	18	24	34	34	100	20
b) No. of artisans assisted	Nos.	110	60	85	120	120	250	50
c) Financial assistance rendered	Rs. in lacs	10.00	1.10	1.50	2.00	2.00	5.00	1.00

INDUSTRIES

GN 3

Item	Unit	Sixth Five Year Plan (1980-85) Target	1980-83 Achieve- ment	1983-84 Achieve- ment	1984-85 Tar- get	Antici- pated Achieve- ment	Seventh Plan (1985-90) Target proposed	1985-86 Target proposed
1	2	3	4	5	6	7	8	9
Khadi & Village Industries Board :								
A. Khadi : Cotton :	Production	30.00	6.36	2.84	3.50	3.50	25.00	4.00
	Employment	Nos. ('000) 1000.00	2.63	300	400	400	650	450
Woollen :	Production	20.00	1.97	1.39	3.00	3.00	25.00	4.00
	Employment	Nos. ('000) 250	100	105	117	117	245	300
B. Village Industries :								
Hand Made Paper :	Production	15.00	0.10	1.00	3.00	3.00	25.00	4.00
	Employment	Nos. ('000) 150	13	25	25	25	100	35
Fibre :	Production	10.00	0.06	0.06	0.10	0.10	1.00	0.15
	Employment	Nos. ('000) 100	3	3	3	8	8	4
Cane & Bamboo :	Production	10.00	5.60	4.00	7.00	7.00	60.00	10.00
	Employment	Nos. ('000) 100	345	400	500	500	800	550
Beekeeping :	Production	15.00	4.20	1.50	1.70	1.70	10.00	2.00
	Employment	Nos. ('000) 1500	210	260	325	325	800	400
Leather :	Production	10.00	1.60	1.00	2.00	2.00	10.00	3.00
	Employment	Nos. ('000) 100	30	30	50	30	55	35
Processing of Cereals & Pulses :	Production	5.00	2.00	1.60	4.00	4.00	30.00	5.00
	Employment	Nos. ('000) 30	30	83	150	150	500	200
Fruit & Vegetable Processing :	Production	10.00	.20	.30	.50	.50	3.00	.50
	Employment	Nos. ('000) 100	5	10	10	10	15	10
Village Oil :	Production	2.00	—	—	.30	.30	5.00	0.50
	Employment	Nos. ('000) 20	—	—	2	2	5	2
Aluminium :	Production	—	—	1.20	1.50	1.50	9.00	2.00
	Employment	Nos. ('000) —	—	7	10	10	10	10
Gobar Gas :		—	20	20	20	20	200	30
Carpentry & Blacksmithy :	Production	5.00	3.36	3.10	5.00	5.00	40.00	10.00
	Employment	Nos. ('000) 50.00	106	156	200	200	500	250

Mining and Geology

Mining is an important economic activity in the Himalayan ranges, which abound in various mineral resources. In the state of Sikkim, exploratory work to establish resources of various minerals has been going on for sometime but not much progress has been achieved because of constraints in possessing adequate numbers of technically trained men, lack of local entrepreneurs and the need to preserve the environment against depredation caused by man made geological activities. Despite these drawbacks, the exploratory work has been carried out from year to year through the department of Mines and Geology which was set up only a few years ago. So far, mineral investigation schemes were framed on year to year basis. The schemes used to be discussed in the State Programming Board which has representation from Central organisations like the Geological Survey of India, the M.E.C. etc. Approved schemes which were taken up for implementation can be grouped under two categories namely ;

1. Better known mineral occurrences on which sufficient basic data exist ;
2. Lesser known occurrences but having potential for growth.

In the former category mineral water, thermal springs, dolomite and coal were investigated. Under the second category crystalline lime stone, marble, silica, rock phosphate, aluminous sediment, magnesia rich rock and building materials were investigated. The lack of man power and the attendant difficulty in sifting data resulted in a slow rate of output.

One of the more well established activity of the department has been in the area of dolomite which resulted in establishing fairly extensive deposits in the Rangit valley, where detailed mapping and sampling was carried out. As a result, several million tonnes of high grade dolomite of the following grade was identified :

Mgo	—	19-21%
Cao	—	28-30%
Sio ₂	—	1- 3%

Total insolubles : Not exceeding 5%

The material is of Steel Melting Shop Grade.

The resource however, faces the problem of utilisation because of locational disadvantages and being of low value, high volume commodity which can not bear the cost of long distance transportation. The solution therefore lies in the manufacture of intermediates or finished products not too far away from the source. Apart from dolomite, occurrences of mineral water and coal have been investigated but the work in utilising these resources for commercial purposes is still continuing.

A number of other potential mineral occurrences also came to light during the course of investigation.

Seventh Plan Objectives :

In the background of the work already done the accent in the Seventh plan will be :

1. To develop the higher value mineral resources which confer higher returns;

2. To identify mineral resources having direct local applicability potential;
3. To develop the fuel minerals like coal for manufacture of briquettes;
4. To develop the already assessed and proven low value resources like dolomite and high grade silica rocks for production of intermediate or finished products near sources obviating the long distance transportation problems.

Dolomite :

Sufficient reserves both high (refractory and S.M.S.) grade and lesser pure grade dolomite have been established in the Rangit Valley area in South and West Sikkim.

The activity envisaged is optimum utilisation of this important resource. The avenues of utilisation for various grades available are

1. Manufacture of intermediates to finished products, near the source from high grade ore, in collaboration with one of the refractory manufacturing firms viz. M/s ORIND, Rourkela, Belpahar etc.
2. Calcareous dolomite to be used for manufacture of puzzolana cement.
3. Impure material to be crushed and powdered for supply to Agriculture Department for use as soil conditioner.

Side by side with the utilisation aspects, exploration, mapping, sampling and assessment of additional reserves will continue.

Coal :

After assessing the feasibility of mining coal, efforts will be made to set up a medium sized briquette manufacturing unit in technical consultancy with C.M.P.D.I. Efforts will also be made to use other raw materials (rice husk, forest or agricultural waste, effluents of gobar gas plant) mixed in various proportions with coal for manufacture of briquettes. Side by side, reserves of mineable coal will be assessed to feed the briquette manufacturing plant. For this, extensive sub-surface and near-surface investigations may be necessary.

Marble :

It is proposed to explore the possibility of setting up a rock cutting and slab making-cum-polishing facility at site. The cut and polished marble slabs fetch a good price in the market. Presently the major Eastern India markets receive their supplies of marble slabs from distant Makrana, in Rajasthan. If we succeed in setting up the facility, marketing may not be a problem. Another avenue for utilisation is manufacture of chemicals, etc. The area being remote, an important factor for utilisation of this resource should be largely dependent on locally available raw material. In case there is need for large scale import of raw material, the entire economics of the project may get offset. In view of this, after ascertaining the total reserve and grade the project has to be carefully selected. Slab making project is expected to have an edge over others on account of its minimum requirement from outside and making a finished product at site.

High Grade Quartzite :

With the identification of fairly extensive reserves of high grade quartzite in parts of South and West Sikkim, the next step involved is to assess the actual tenor and reserve. The work completed hitherto has pro-

vided good indications of fairly large reserves. This is to be followed up with systematic mapping and sampling of selected zones of very high grade (98% and above SiO_2) material. Efforts to explore the utilisation possibilities of the raw material near sources have been initiated and it is expected that the deposit may come under commercial exploitation either by some private agency or a suitable joint sector enterprise which may also provide suitable employment avenues to trained mining engineers.

Aluminous Rocks :

Lensoidal bodies of sillimanite have been identified in the upper reaches of the Roathak Khola in West Sikkim. Some bands have shown a good grade (above 58% Al_2O_3) while a few others have shown siliceous impurity. The commodity being of higher value used for making refractories, it may be possible to start production on a small scale, with selective mining for better grade material. Side by side with finding the possibilities for development, emphasis on geological exploration will be placed to have a sizeable reserve of the material which can sustain the project for some length of time.

Magnesia And Other Rocks :

Some indications of magnesite and talc have been found in the upper reaches of the Roathak Khola Valley, West Sikkim. These minerals have good commercial value. Magnesite is an excellent raw material for refractory purposes, while talc finds extensive use for manufacture of insecticides, fungicides and cosmetics. Programme envisages location of sizeable reserves of these minerals by putting in necessary geological exploratory effort.

Mineral Water/Thermal Springs:

The efforts so far have not brought to light any potential source of cold or thermal water which could be developed as potable mineral water. The effort to systematically collect and analyse natural water of the state is proposed to be continued in an effort to identify suitable source, for which the possibilities do exist as in other Himalayan states, mainly Himachal Pradesh.

Other Minerals :

In addition to the above mentioned promising rock and mineral resources, there are a large number of lesser known occurrences having a potentiality for growth. Depending upon the availability of men and material resources such efforts will be pursued. The areas include :

1. Tungsten ; Known in the skarn zone of West Sikkim, and Munsong, near Kalimpong, West Bengal.
2. Rock Phosphate ; Quartz veins, basic sells and the meta-sedimentaries of South Sikkim (Namchi-Bhazang-Damthang-Tarku) are known to contain some times high percentage of apatite (phosphate mineral).
3. Building/Dimension Stones : A large variety is available.
4. Graphite ; Much work including drilling has been carried out by the G. S. I. and has provided a rather dismal picture of the potentiality of graphite. Departmental effort is envisaged only in virgin areas considered favourable.

Namchi Water Resource Investigation :

In view of the chronic water scarcity experienced in the Namchi area, it is proposed to apply radio-tracer technique for determining the ground water movements and localisation in the region. This work is expected to be taken up in collaboration with the Department of Atomic Energy, Government of India.

Conservation of Soil :

Conservation of soil/regolith in a mountainous terrain of the state is a very vital area demanding a scientific approach and concerted effort. Apart from planting soil binding species of plants and other preventive measures currently being employed, a systematic geological study to identify the areas which are prone to mass wasting is called for. Once the process of slump has set in, it is difficult to stall it. It can only be delayed. It is, therefore, urgent to identify and tackle such areas which are geologically unstable made up of soft rocks, easily susceptible to water and solution action and take corrective measures, before it is too late.

Infrastructure :

It goes without saying that for a more ambitious canvas of activities envisaged under Mining and Geology the infrastructure within the department with regard to both human and physical resources requires strengthening. In order to develop the former, students will be specially selected for geology courses and inservice candidates sent for special training programmes. Regarding the latter the existing laboratory will be made fully functional so that besides Chemistry and Petrology, Photogeological work will be undertaken. The laboratory building will be expanded and its environment improved.

Sikkim Mining Corporation :

Besides the department of Mining and Geology the main mining activity in the state is undertaken by a Corporation called the Sikkim Mining Corporation.

This was established as a joint venture of the Government of Sikkim and Government of India in early 1960 and trial production started in 1967. The Corporation is in the flank of National Highway-31A near the confluence of Tista river and its tributary Rangpo chu. This is nearly 75 k. m. from New jalpaiguri in West Bengal. The State Capital, Gangtok, is about 40 k. m. further from the corporation.

This corporation produces low grade poly-metallic complex ore from the mine in the Himalayan area containing copper, zinc and lead. The ore is treated in its own concentrator for production of copper, zinc and lead concentrates. Copper concentrates are sold to Hindustan Copper Ltd. at their Ghatsila smelter and the zinc concentrates are sold to Hindustan Zinc Ltd. at their Vizag smelter. The lead concentrates which contain high quantity of silver still remain unsold. due to contamination of undesirable bismuth.

Natural calamities like land slide, torrential rains and complete isolation due to road blockage together with total power failure for days together are common features. The concentrator got flooded and submerged due to land slide in 1968. The Corporation had no electric power for about one year during 1978-79.

Review :

The deposit was investigated initially by the Geological Survey of India and detailed exploration was done by the Indian Bureau of Mines and the ore reserve of 6.6 lakhs tonnes was estimated (proved and probable) over a strike length of 100m. and for a depth of 220 m. from the surface. Production upto 1983-84 is as below :

Copper Concentrates	—	6811 Tonnes
Zinc Concentrates	—	3790 Tonnes
Lead Concentrates	—	2210 Tonnes

The monetary value of these (excluding the lead concentrates) is about Rs. 200 lakhs and the ore reserve depletion is approximately 2.4 lakhs tonnes. It may be seen that these deposits have about 4 lakhs tonnes ores still left. Even though some pillar losses are unavoidable, additional recovery worth Rs. 300 lakhs or more may be expected. Present knowledge allows work on this project for 7 years more. It is worth proving that ore exists for 5 more years work. This is expected to exist, as it is found that the width of the ore body for copper bearing lode is not diminishing with depth on the southern side. On the southern side the ore body reaches towards river Tista and unavoidably certain pillars for safety have to be left thereby reducing the working strike length of the property. Behaviour of the ore body at depth particularly at below river Tista will have a marked bearing on the future of this corporation. It is worth noting that India still imports copper, lead and zinc. The country will remain dependent on import for another decade or so. Thus, production though small, will save foreign exchange to a certain extent and hence further investment may be worth considering.

Objectives :

The main objective during the 7th Five Year plan is to invest, for prolonging the life of the corporation with optimum production and make it a profitable venture, as enumerated below :

- a) In the earlier years, the corporation worked ore reserve mainly above the valley level. Hence, it is necessary to work to depth.
- b) For prolonging the life, some exploration with diamond drill etc., from underground will have to be undertaken, to confirm ore continuity.
- c) For better recovery, particularly of zinc concentrate, certain modifications will have to be made, and replacement of some machinery will be unavoidable.
- d) In order to cut short repairs and transport cost, unavoidably incurred when undertaken outside the project, certain equipment in the engineering side have to be provided.

Mine And Exploration :

As most portion of the ore above the valley base has been worked, working at depth has been started. A winder has been purchased and preparations are in progress for installation to hoist ore and waste. The purchase of winder, and part of the accessories will be over during the 6th Five Year plan but total completion and the operation of the winder is expected to start during early 7th Five Year plan only. It is worth noting that this is unavoidable for continuance of the mine and without this, hoisting from depth will not be possible. All the preliminary work have been more or less completed for this arrangement.

Present estimation indicates that the corporation can last 7 years more, with the ore reserves known. However, on the southern side i.e. towards river Tista, the lode persists in depth and there are no signs of the reduction either in width or value and hence exploration below the last bore hole is warranted. Accordingly, some diamond drilling to be undertaken by an expert agency on contract basis. If this becomes viable, the life of the mine may be increased by a further period of 5 years or more.

Concentrator and Beneficiation Plant :

This plant of the corporation was designed for the ore analysing 1.19% Copper, 1.2% Lead and 2.52% Zinc but it is found that the feed at present has changed considerably due to wide varying nature of the load and thus, the concentrator needs certain changes. In order to have better recovery particularly zinc, additional cells were installed towards the end of 6th Five Year plan. It is proposed to improve it further. Hence, a few more cells with necessary accessories and replacement of old machinery is suggested. It is also proposed to have weightometer for quantitative information which allows with other basic parameters in grade control. At present, the feed to the ball mill is not determinable and in order to have a uniform rate of feed, it is proposed to have disc feeder.

Engineering :

After the installation of the winder and steady power, increased production is envisaged. Thereafter, work-load in the engineering section will be increased. Today, one is forced to go to the outside agencies even for small work and due to the geographical situation, transportation cost together with the outside agency charges become prohibitive. Accordingly, it is proposed to strengthen the workshop and other electrical/mechanical section to overcome this situation. A good communication and lighting system and replacement of timber poles for overhead lines after years of service, have become unavoidable.

In the lean months, the present natural water source spring becomes scarce and so attempts to pump out water from river Tista have been tried. This arrangement has been found to be unsatisfactory, due to clogging and corrosion, thereby forcing the management to keep the concentrator stopped. To avoid this difficulty, arrangements for tapping additional source with pump and pipe lines have been incorporated.

Alternate Power Source :

Presently the Corporation gets power from the Jali Power House, a hydel station of the State Power authorities. There is a power station called Lagyap which also may supply power in times of need. However, Lagyap is still having teething trouble and due to transmission over difficult terrain, heavy monsoon, etc., the Corporation suffers quite often due to total stoppage of power or low voltage thereby affecting work. Apart from the poor quality of the ore, shortage of power had been another big constraint in making the project self-sufficient. Even though the high cost of investment with a stand-by diesel generation set may not appear attractive, it is worth considering once the existence of ore below is known i.e. after about 3 years. Accordingly, provision has been made to have uninterrupted power supply to the Corporation taking for granted that the power authority will be in a position to supply 12 hours per day, and Corporation power supply will be for another 12 hours per day with a captive diesel operated power station.

Dikchu Project :

A base metal deposit at Dikchu in North Sikkim mainly of copper has been explored in detail by Mineral

Exploration Corporation Ltd, a Government of India enterprise on the advice of the Government of India. A detailed project report is under preparation by the Indian Bureau of Mines. On receipt of such a report, a decision has to be arrived at as to whether this project is to be taken up for production or not. The decision may have to be based not only on economical viability but also on the fact that India will continue to import copper for more than a decade and Dikchu thereby will reduce the import to a small extent, and help develop an under developed area, and also provide employment. Regarding the question of the producing agency, the Proclamation dated 27th February 1960 forming the Sikkim Mining Corporation, has made it clear that this Corporation can deal with any deposit within the State of Sikkim. In case it is decided that this project is to be taken up, this may become another unit of Sikkim Mining Corporation. The total investment will have to be given by the owner and funds have to be provided accordingly in the 7th Five Year Plan. Pending the receipt of the detailed project report, it is not possible to guess the fund requirements. However, Rs. 7 to 10 crores may have to be spent if this project is brought into a producing stage considering the difficult logistics. However, it is to be kept in view that the quality of copper in Dikchu is superior compared to Rangpo and in the long run this might prove to be a boon.

Financial Dimension :

An amount of Rs. 180 lakhs has been proposed for Mining & Geology during the 7th plan.

MINING AND GEOLOGY

GN 2

(Rs. in lakhs)

Name of the scheme/ Projects	Sixth Five Year Plan (1980-85) Agreed outlay.	1980-83	1983-84	1984-85		Seventh Plan 1985-90		1985-86		
		Actual Exp.	Actual Exp.	Appd. Out- lay	Anti. Expen- diture	Proposed Outlay	of which Capital content	Proposed Outlay	of which Capital content	
10	1	2	3	4	5	6	7	8	9	10
Direction & Admini- stration	37	17.49	8.53	10.50	10.50	37.20	—	5.80	—	
Mineral Exploration	27	6.78	8.75	2.70	2.70	18.00	—	3.00	—	
Laboratory Building	6	4.50	1.45	0.80	0.80	4.00	4.00	1.00	1.00	
Micro Biological unit	—	—	—	—	—	5.30	—	1.00	—	
Lime & Other unit	—	—	—	—	—	5.50	—	1.20	—	
Sikkim Mining Corpo- ration	50	23.35	15.25	19.00	19.00	80.00	80.00	20.00	20.00	
Dikchu Mines	—	—	—	8.00	8.00	30.00	30.00	18.00	18.00	
Total	120.00	52.12	33.98	41.00	41.00	180.00	114.00	50.00	39.00	

Transport

Introduction :

The State of Sikkim is located entirely in the Himalayan region and is therefore dependent on road communication as the only means of transport. There are no rail and air services. The requirement to maintain an efficient transportation system thus needs no emphasis. Over the past years there has, therefore, been a conscious attempt to improve the road and transport infrastructure which go hand in hand.

Review :

The Sikkim Nationalised Transport known in short as S.N.T. functions as a departmental undertaking. It started off as a department in charge of freight transport as early as 1944 with just 10 trucks. From that date it has grown in strength and today it caters not only to freight but also to the passenger requirement of the state. Since, however, the volume of both freight and passenger movement has increased virtually in geometric progression, the S. N. T., though holding a monopoly right, has had to enter into reciprocal arrangements with the neighbouring state of West Bengal under which that Government has agreed to make available certain number of trucks through a periodical system of review through which the fleet of the S. N. T. is supplemented. This system has worked well and in the absence of a better alternative it would be continued in the future as well.

If a SWOT analysis on the work of the S.N.T is conducted the point that comes to focus on its weakness is what one can call the operational efficiency. In view of the fact that the organisation has to cater to various social factors in a democratic set up, it can not ignore the demand of introducing new passenger services in several uneconomic routes as a result of which there is not only improper utilisation of the existing fleet strength but also the wear and tear of the vehicles increase because of the road conditions. The turnover time is also large because of the distance factor, as a result of which the operational efficiency is impaired. Despite these social obligations the S.N.T., however, has a target of improving operational efficiency to at-least 65% by the end of the Seventh plan.

The situation regarding freight transport, which is more lucrative than passenger traffic, is also one which requires improvement. The turn over time is large because of the inherent problems in reaching interior areas. the time required for loading and unloading and the distance factor. The question of improving loading techniques by providing parking facilities in the main godowns and in introducing a certain amount of mechanization in loading operations will be given a serious thought during the plan. The provision of a weigh bridge in some of the more strategic places like Rangpo, Jorethang and Gangtok will also be given the importance it deserves.

Provision of passenger amenities, improving workshop facility and enlarging the management are other areas of thrust in the plan.

The main variables involved in estimating the growth of the S.N.T. in the plan will no doubt depend upon the availability of new and better road length, industrial and agricultural growth in identified growth centres, urbanisation and development of tourism and so on. The main variables involved are

inter-disciplinary but will have to be taken into account for estimating the growth factor. The following table gives an idea of the total growth in bus kilometers, passengers and goods, in the Five Year plan period from 1980-81 to 1984-85 :

Particulars :	1980-81	1981-82	1982-83	1983-84	1984-85
(i) Bus Kms (Lakhs)	15.05	16.63	18.92	20.69	24.00
(ii) Percentage increase	—	10	14	11	15
(iii) No. of passengers transported (Lakhs)	3.97	4.25	4.29	5.36	7.00
(iv) Percentage increase	—	7	1	25	30
(v) Goods Kms. (Lakhs)	27.86	34.80	34.24	38.44	45.00
(vi) Percentage increase	—	26	(—)1	23	27

The average growth rate for passenger operation is about 15% and goods operation is around 18%. Taking into consideration the need to improve operational efficiency and to ensure maximum return the main objectives of the Seventh plan will be as follows :

Objectives :

1. to augment the fleet strength and correspondingly reduce operational costs by consolidating the existing system,
2. to open new roads taking into consideration the socioeconomic parameters,
3. to improve the workshop infrastructure. and
4. to provide better passenger amenities.

Strategy for Augmentation :

There are no two opinions that the S.N.T. being solely responsible for the transportation of goods and passengers should have a well equipped fleet strength. As on 31.3.85 it will have a fleet of 162 trucks including tankers, and 96 buses. The existing schedule of operation on the various routes and the number of buses used therein is given in a table in Annexure I. The required number of buses for operating these routes is also given in the same table. It is obvious that to give complete satisfaction in the existing routes, it is necessary to increase the number of buses.

The plan of augmentation should first of all take into consideration the need to replace all old vehicles which have ceased to be economical in operation. For the purpose of scrapping a vehicle a major criterion that will be followed is to ensure that the vehicle has completed a minimum 7 years of life on the road. In the first year of the Seventh plan, 32 trucks including tankers and 16 buses making a total of 48 would have completed seven years of service. The following table gives a picture of the number of trucks and buses that will be due for replacement during the Seventh plan :

	Trucks	Buses	Total
1st year	— 32	16	48
2nd year	— 10	11	21
3rd year	— 18	11	28
4th year	— 19	8	27
5th year	— 20	13	33
Total -	98	59	157

It may be seen that 157 vehicles which include 98 trucks and 59 buses will have to be replaced during the Seventh Five Year plan period.

As far as additionality is concerned the increase in the number of buses is proposed to be calculated on the basis that the average growth rate in bus kms. would be 15% and that from the existing 77 schedule of services the additional services proposed in existing routes and on new routes would be 94 thereby making a total schedule of 171 services by the end of the plan period. On the basis of 65% operational efficiency with 25% being kept off road and 10% as stand-by the total buses required by the end of the plan period will be 165 which will mean that 69 numbers of new buses are required, since by the end of the 6th Plan the S. N. T. will have 96 buses in hand

As far as trucks and tankers are concerned the average growth rate is estimated at only 10% although the existing figure indicates a growth rate of 18%. A lower figure is taken for the purpose of calculating the extra number of trucks on the presumption that by increasing efficiency, the growth rate can be pegged down to 10% for increase in trucks. On a similar calculation as in the case of buses the number of trucks including tankers required at the end of the plan would be 261 which would mean an addition of 99 trucks, since as on 31/3/85 the S.N.T. will have 162 trucks in hand. Thus the total number of extra vehicles required to meet replacement and augmentation is 325 which will work out to more than Rs. 7 crores.

The acquisition of adequate number of vehicles is undoubtedly the most important of the plan schemes of the department and will therefore be given top priority. At the same time every effort will be made to reduce the wear and tear. By providing the drivers and other staff connected with the maintenance of the fleet with proper incentives, the utilisation would be maximised by identifying the factors contributing towards a lower efficiency

Revenue Generation :

1. The main sources of revenue for S.N.T. are the freight charges and passenger fares. The current year's average revenue on account of these sources comes to Rs. 230 lakhs and Rs. 60 lakhs respectively per annum. Besides, there are revenue items like workshop receipts, sale of POL and other miscellaneous items due to disposal of old vehicles, scraps etc.

2. The estimated growth rate during the plan period 1985-90 is taken as 15% in the case of passenger transport and 10% in case of goods transport and that on workshop receipt, sale of POL and miscellaneous items as 10% and 5% respectively. The revenue generation during the 7th plan period would be :

Period.	Freight.	Fare.	W/shop receipt.	Sale of P.O.L.	Other Misc.	Total.
1985-86	25300	6900	110	7875	1050	42235
1986-87	27830	7935	121	8268	1102	45255
1987-88	30613	91	133	8682	1157	49710
1988-89	33674	10493	146	9116	1215	54644
1989-90	37041	12067	161	9572	1275	60116
(All figures are in thousands of Rupees).						250960

Workshop & Operational Facilities ;

It needs no special mention that maintenance of the fleet depends to a large extent on the provision of proper well equipped workshop facilities. This is needed not only to service, repair vehicles but also for the purpose of providing the S.N.T. with a system of controlling the expenditure on maintenance. While the S.N.T. proposes to equip for itself a full-fledged central workshop, it also has to meet the repair requirements of other vehicles mainly jeeps which are attached to several departments of the Government.

At present the central workshop of S.N.T. is in the heart of Gangtok town and has limitations of space. Consequently, a decision has been taken to shift the central workshop to a complex at Ranipool - 12 Kms away from Gangtok that was hitherto occupied by the Lower Lagyap Power Project under the Central Water Commission. The plan consists of not only constructing a central workshop but to have facilities of a central store, scrap yard, Staff quarters and the workshop building. At the same time the existing workshop in Gangtok town will be improved, as a service station undertaking minor repairs.

The S. N. T. has already opened another workshop at Chandmari, essentially for the purpose of repairing vehicles attached to Government departments. This workshop has not had proper facilities and therefore it will be provided with more tools and equipments, man-power and additional space. An endeavour will also be made to centralise the purchase of spare parts which are normally required for repair work. At present, most of the vehicles are repaired at private garages since the S. N. T. has neither the time nor the staff for the purpose. There is, consequently, no check on the parts being used as a result of which the use of spurious parts has become a standing grouse. This will be minimised by the S. N. T. indenting for the purpose and keeping adequate stores and utilising them for repair work.

Other workshops at Jorethang, Rhenock and Rangpo will also be improved upon particularly in the form of providing the needed machinery and tools. Annexure II gives a complete list of items which the S. N. T. proposes to acquire for their workshops. With better control on servicing and repair, the large fleet of vehicles would be put to optimum use with minimum complaints.

In the process of repair and maintenance of vehicles unfortunate occasions for undertaking such repairs would arise when the vehicles meet with accidents which occur during the process of operation. The vehicle, therefore, needs its recovery and towing upto the workshop for repair with the help of a recovery van. Therefore, the full fledged workshop needs possession of a few recovery vans.

Apart from improving workshop facilities operational facilities have also to be given due importance. In order to improve upon such facilities, the S. N. T. envisages the construction of sub-offices at important centres and in improving the facilities in existing centres not only from the operational point of view but also from the point of view of providing passenger amenities. Once the central workshop is shifted from Gangtok to Ranipool the main bus station will be in the premises of the existing workshop where better facilities would be provided for incoming and out-going passengers. At present the main office of the S. N. T. is also functioning within the premises of the central workshop in a place with a very old structure devoid of proper facilities. The construction of an administrative block to meet the requirement of a modern office which would include facilities for electronic data processing is conceived of as a major input in the Seventh Plan. Outside Gangtok, one of the main originating centres

of both passenger and freight traffic is Siliguri where it is absolutely necessary to provide better passenger facilities. The present premises of the S. N. T. office and the Rest House at Siliguri will be converted into a modern bus terminal with the additional facility of providing transit accommodation to passengers who go from Siliguri to other places by rail and air. The stations will be provided with other information requirements pertaining to Sikkim. Booking office with basic passenger facilities will be extended to cover important areas like Rongli, Pakyong, Dikchu, Soreng, Ravangla, Chungthang, Dentam, Rinchenpong, Yoksum and Sang.

It is also proposed to provide a modern godown at Gangtok essentially for goods and commodities for the purpose of early release of trucks.

Management Direction & Administration :

It needs no special mention that any improvement in operation requires a toning up of management. The S. N. T. management will continue to be at the departmental level but the training input will be widened by offering more opportunities to various levels of personnel to undergo specialist training. The Accounts branch will also be streamlined and wherever practicable modern methods like computers will be used for inventory control for stores management, pay roll and so on. As far as operation is concerned, the recruitment of drivers will be organised in such a way that those participating in the operation will be given an exposure on committing the organisation to improve efficiency levels. Intermediate levels of checking and guidance will be insisted upon so that there would be no slips on the part of operations. All vehicles on the road will be compulsorily insured against accidents and every effort will be made to observe punctuality in operation.

In the process of toning up the management, the process of re-organisation in the management and in operation becomes essential. Similarly, modern tools and equipment will be installed in the workshop to facilitate speedy repair of works keeping in view the economy it would achieve in the process of repair and putting maximum number of vehicles on road thereby increasing operational efficiency.

The S. N. T., apart from providing social service is also a revenue earner for the state government and therefore, it is imperative that its entire operation is geared towards efficiency.

Helicopter Service :

Other than road transport, it has already been mentioned that, the state does not have the facility of either rail or air services. The question of connecting Sikkim by air has been under the consideration of the government for quite some time now. The lack of proper flat surface area to provide landing and take off facilities for STOL Aircraft has indefinitely deferred the proposal of putting Sikkim in the Air map of India. Whether ultimately the Civil Aviation Department would be able to include Sikkim in the Air map of India or not the frequent land-slides blocking important road communications and urgent need to reach far flung areas of the state has necessitated the government to seriously consider the other best alternative of owning its own helicopter. This is, therefore projected as a new scheme in the Seventh plan, the details of which are yet to be worked out.

Financial Dimension :

An amount Rs. 950 lakhs has been proposed for Road Transport during the Seventh Plan.

ANNEXURE-I

SCHEDULED SERVICES OF SIKKIM NATIONALISED TRANSPORT

Sl. No.	Route	No. of Existing.	Buses Required.	No. of Extg.	scheduled trips required.	Route Km.	Total Km.
1	2	3	4	5	6	7	8
1-13	Gtk. - Sgu.	12	4	13	8	114	1482
14-15	" - Drj.	2	2	2	2	118	236
16-19	" - Kpg.	2	1	4	2	85	380
20-21	" - Chungthang	2		2		98	196
23-24	" - Mangan	1	1	2	2	68	136
24	" - Lachung	1		1		120	120
25-26	" - Rhenock	1	1	2	2	57	114
27-28	" - Rongli	1	1	2	2	73	146
29-30	" - Pakyong	1	1	2	2	30	60
31-32	" - Namok	1		2		45	90
33-34	" - Tumin	1		2		45	90
35-36	" - Rumtek	1	1	2	2	26	52
37-38	" - Song	1	1	2	2	36	72
39-40	" - Gyalshing	2	1	2	2	107	214
41-42	" - Namchi	1	1	2	2	76	152
43-44	" - Jrg.	1	1	2	2	96	192
45-46	" - Machung	1		1		46	92
47	" - Gnathang	1		1		70	70
48-49	" - C/Pandam	1	1	2	2	55	110
50-51	" - Lingzay	1		2		45	90
52-53	" - Penlong	1	1	2	2	8	16
54-55	Rongli - Kpg.	1	1	2	2	61	122
56-57	Newmal - Dzuluk	2		2		160	320
58-59	Jrg. - Sgu.	1	2	2	4	85	170
60-61	" - Sombarey	1	2	2	4	28	56
62-63	" - Gyalshing	2	1	4	2	41	164
64-65	" - Melii	1	1	2	2	27	54
66-67	" - Namchi	1	1	2	2	19	38
68-69	" - Uttarey	2		2		82	164
70-71	" - Rabangla	1	1	2	2	70	140
72-73	Gyalg. - Pelling	1		2		8	16
74	Gtk. - Lachen	1		1		128	128
		50	27	74	52	2117	5482
	Other Staff & Student service	+3					
		53					

ANNEXURE II

REQUIREMENT OF THE WORKSHOP

1. Lathe	...	2 Nos.
2. Crank Shaft Grinder	...	2 "
3. Twin head connecting boaring M/C (Motor Type)	...	
4. Line boaring machine	...	2 "
5. Boaring machine	...	2 "
6. Honning machine (Moter Type)	...	1 No.
7. Valve refacer	...	4 Nos.
8. Hydraulic press (107)	...	2 "
9. Jib Crane (1 ton)	...	5 "
10. Air compressor heavy duty	...	3 "
11. Car Washer	...	3 "
12. Pneumatic grease gun	...	4 "
13. Tyre inflator gauge (wall type)	...	
14. Electric Welding set	...	2 "
15. Tyre retreading plant	...	1 No.
16. Battery Chargers	...	5 Nos.
17. Distillation Plant (heavy duty)	...	
18. Grinding machine " "	...	5 "
19. Overhead Crane	...	6 "
20. Degressing Plate	...	1 No.
21. F. I. P. test bench	...	1 "
22. Hydraulic press for channel	...	1 "
23. Spray welding set	...	1 "
24. Tube valcanizing machine	...	6 Nos.
25. Generator set	...	1 No.
26. Surface Grinder	...	1 "
27. Sawing machine for timber	...	1 "
28. Sewing machine (Industrial type)	...	5 Nos.
29. Nozzle tester	...	4 "
30. Radial Drill machine (h/duty)	...	2 "
31. Recovery Van		
32. Tyre Rethreading Equipment		

ANNEXTURE III

OPERATION

1. Augmentation of fleet on the new routes :

Routes :	No. of scheduled buses
1. Jorethang — Sumbuk	2
2. Melli — Turuk	2
3. Jorethang — Soreong Via Malabasey	2
4. Sombaria — Soreong Via Burikhop	4
5. Jrg. — Gyalshing Via Kaluk — Dentam —	4
6. Yuksom — Tashiding	5
7. Gangtok — Dickchu via Makha	2
8. Gangtok — Pakyong via Bhusuk	2
9. Gtk. — Rumtek — Rangka — Luing — Gtok.	2
10. Jrg. — Kalimpong — Rhenock	4
11. Rongli — Siliguri via Pedong	4
12. Rangpo — Rhenock via Rorathang	2
13. Rangpo — Pakyong via Duga & Pendam —	4
14. Mamring — Namchi via Namthang	4
15. Singtam — Makha — Dickchu	2
Total - 42 Nos.	

TRANSPORT

GN 2

(Rs. in lakhs)

Name of the Scheme/ Projects	Sixth Five year Plan (1980-85) Agreed outlay.	1980-83 Actual expendi- ture.	1983-84 Actual expendi- ture.	1984-85		Seventh Plan (1985-90)		1985-86	
				Appd. Out lay	Anti. Expen- diture.	Proposed Outlay	of which Capital content	proposed Outlay.	of which Capital content.
1	2	3	4	5	6	7	8	9	10
Direction and Aministration	60.52	24.52	17.72	18.00	18.00	50.00	—	7.00	—
Plant & Machinery	13.62	3.62	3.12	5.00	5.00	30.00	30.00	5.00	5.00
Workshop Facilities	96.85	37.74	66.95	20.00	15.00	330.00	330.00	30.00	30.00
Acquisition and repla- cement of fleet	309.01	171.01	7.49	40.00	45.00	390.00	390.00	68.00	68.00
Air Transport	—	—	—	—	—	150.00	150.00	90.00	90.00
Total	480.00	236.89	95.28	83.00	83.00	950.00	900.00	200.00	193.00

Roads & Bridges

Introduction :

A well organised communication network is an essential pre-requisite for rapid economic growth in the hill state of Sikkim. Unless the remote areas of the state are made easily accessible, the prospect of opening out the rural hinterland which has adequate potential for growth will remain only a dream. It is because of the need and the aspirations of the people in the rural areas to interact with the market forces that, time and again, there has been great demand for the construction of roads. A glance at the outlays provided for road development in the successive plans in the state will indicate that priority has been given to this aspect of development from the very beginning. Even today, the need for road development is very much there although compared to other hill states, perhaps the state is better served by a communication network.

By the end of the Sixth plan, the developmental parameters indicate that, there would be 24 Kms. of road per 100 sq. Km. area and 4.5 Kms. of road per thousand population which compares favourably with other similar areas. The construction of roads has, however, brought in its wake several incidental problems, as a result of which, the emphasis in the Seventh plan will be mainly on consolidating the existing network. Most of the roads are still in an unfinished stage in the sense that they are without proper surfacing and lacking in width and protection. As a result they get washed away through landslides, toe erosion and run-off of the top surface. The construction of roads has had to some extent an adverse effect on the ecological balance also and consequently the strategy in the 7th plan will be to consolidate and strengthen the existing network of roads and to construct new roads only when the ecological aspect is completely taken care of. Many of the roads are still not yet trafficable because invariably the road length connecting two different places passes through streams and rivulets over which bridges have to be constructed.

The endeavour in the plan would, therefore be to try and complete construction of the needed number of bridges so that the investment in the construction of the roads is made full use of. Thus, in a nutshell the work in the Seventh plan will consist of taking up in phases existing road lengths and making them fully stable, more durable and trafficable in the complete sense of the term. As a second phase, the width of the roads will be increased so that jeepable roads become truckable in course of time.

While the layout of roads for purposes of traffic has necessarily got to engage the attention of the government, the fact remains that in Sikkim the villages consist of houses which are scattered here and there at different heights as a result of which it is next to impossible to construct motorable roads reaching the households. Thus from time immemorial, footpaths to enable the people to walk down to central points have been constructed in almost all the villages. Many of these foot-tracks constructed by the local people have neither proper alignment nor structural safety as a result of which they become slippery and unworthy of use particularly during the rainy seasons. Recognising the importance of providing the villagers with a pedestrian communication network, the Rural Development department has been undertaking the task of constructing four feet wide foot-tracks with well laid out concrete steps both under the road sector as well as under the NREP. The foot-tracks have also to

encounter streams and rivulets and so it is necessary to provide small pedestrian bridges across such streams so that the villagers can go about freely for their normal purposes as well as for carrying their produce to the market. The construction of bridges for such purposes has been one of the more popular programmes in the past few years and today most of these bridges are either RCC or steel structures, which in the long run are more economical. The construction of such bridges will occupy a place of importance at the district level and will form one of the items of decentralised planning.

Review :

At the beginning of the 6th Plan the total length of roads of various categories under the control of the state government amounted to 892 Kms. 423 Kms. of border and strategic roads and 40 Kms. of the national highway are under the control of the Border Roads Organisation. In terms of villages the road network connected 158 number of villages. At the commencement of the 6th Five Year plan the spillover length to be constructed of roads already sanctioned for implementation, accounted for 217 Kms. Besides these sanction for constructing a further 271 Kms. was accorded by the government and thus the total additional length of roads to be constructed during the Five Year period 1980 - 85 amounted to 488 Kms. It is expected that a total length of 349 Kms out of the above 488 Kms. will have been completed by the end of the Sixth Plan. This being the case, the 7th Plan will start with a back - log of 139 Kms. of road length as a legacy of the schemes already sanctioned. It is expected that these 139 Kms. will be completed within the first two years of the 7th Plan after which 225 number of villages will be connected with motorable roads which in terms of percentage works out to 56%. Besides expansion of the road network. 82 Kms. of narrow roads were improved and 34 Kms. of unsurfaced roads were surfaced during the 6th Plan still leaving 490 Kms. of non - standard roads and 641 Kms. of unsurfaced roads. Also construction of a number of major and minor bridges on roads already constructed were completed and the roads opened to traffic. Replacement of one weak major bridge by prestressed concrete bridge and works on two major bridges were also commenced and is in progress.

Seventh Plan :

The main objectives of the Seventh Plan, as already mentioned above, will be to complete most of the spill over schemes of the Sixth Plan to make them safe and fit for movement of heavy vehicles and to provide surfacing to unsurfaced roads. This will include the construction of new bridges, replacing existing bridges with stronger structures and improving the existing bridges wherever needed. The total fund required, proposed outlay and physical targets for the Seventh Plan are broadly detailed below.

Construction of 139 Kms. of roads have been spilled over to 7th Plan at various stages of construction along with construction of seven major and 29 minor bridges, improvement of 189 Kms. of narrow road and surface strengthening of 68 Kms. of roads. This will require a total provision of Rs. 2736 lakhs for completion and a provision of Rs. 2017 lakhs only has been made during the Seventh Plan for completion of most of these spill over schemes.

The new programmes proposed in the Seventh Plan are to construct major and minor bridges in the roads completed and likely to be completed and to take up improvement and surfacing works on 333 Kms. of roads of narrow and unsurfaced roads, provide slope treatment and protection works to disturbed slopes, strengthening of the existing weak bridges and pavements and to commence construction of

300 Kms of new roads. An outlay of Rs. 1,953 lakhs has been proposed for these works as against the total requirement of Rs. 6,748 lakhs for new works in the Seventh Plan.

The National target was to connect 50% of the total villages within the population range of 1,000 to 1,500. As far as this target is concerned it can be said that the state has already attained it. However, the roads which have already been constructed cannot be considered to have been completed in the true sense of the term. They are mostly in earthen form requiring protection work, drainage, metalling and black topping. The roads though below standard are being used by heavy vehicles at great risk and therefore it is necessary to improve the non standard roads so that the movement of vehicles becomes safe and smooth. Improvement of the road surface will directly contribute to saving travel time, consumption of fuel and wear and tear of the vehicles and therefore proper surfacing of unsurfaced roads and construction of bridges of standard dimensions will be an item of priority in the plan.

While consolidation of the existing road network will be given due prominence, one cannot totally ignore the compulsion of expansion particularly in a hill state where the demand factor persists. The government are however anxious to guard against haphazard expansion, since such growth will have a deleterious effect on the ecological balance of the state. Keeping these factors in mind a master plan for road development covering the period up to 2000 A.D has been prepared, for covering 100% villages with population of 200 and above and 50% villages with population below 200. Therefore whatever new construction is taken up will be only within the master plan and phased out in such a manner that the resources available from year to year are kept in mind before undertaking individual construction works. In all such items of new roads, the construction of bridges will also be integrated along with the main proposal so that there is a logical continuity in the programme of construction up to the end.

It goes without saying that for maintenance, consolidation and construction of roads, the mechanical and stores aspect should be given due importance. The department has already got a number of machineries like bulldozers, road rollers, air compressors, stone crushers and so on but some of them have to be replaced because they have reached a stage of uneconomic repair. There is also a need to increase the stock of machineries. Of late, labour shortage has been felt in the state and as a result, a large number of labourers have to be brought from outside the state which not only causes a social imbalance but also contributes to delay in implementation of work. Labour saving devices have therefore to be increasingly used in road construction work which will also go towards raising the standard of quality. Thus, apart from replacement of old and obsolete machinery and addition of equipment an important consideration in the Seventh Plan will be to diversify the scope of mechanisation by the introduction of new labour saving devices like mounted cranes, load dumper trucks etc.

The purchase of more equipment and machinery will also require additional space for storing them. The state does not have a proper stockyard for stocking materials particularly magazines for the stocking of explosives. Stockyards are therefore proposed to be built as adjuncts to the existing stores at Gangtok, Jorethang and Singtam. An additional store is also proposed at Geyzing to cater to the requirements of the West district.

The need to construct foot bridges for pedestrian traffic, needs no special emphasis since this is the most popular means of communication for the villagers. By the end of the Sixth Five Year plan a

total of 637 bridges will have been constructed, of which the break up is broadly as follows :

Suspension foot bridges	—	150
R.C.C. bridges	—	287
Steel bridges	—	79
Log bridges	—	121.

There is a tremendous demand for more and more bridges and therefore the authority to choose from among the demands is proposed to be vested with the district administration in the decentralised system of planning. A total of 400 more different types of foot bridges is targetted for construction during the Seventh Five Year plan of which more importance will be given to steel and RCC bridges because they are in the long run more durable. The average span of steel and RCC bridges will be only 12 metres. Bridges of spans of about 50 metres will invariably be suspension bridges.

It goes without saying that the expansion in activities in the construction of roads bridges and overall maintenance including consolidation requires strengthening of the organisational structure. This is particularly relevant in the context of decentralisation. More divisions and circles are contemplated so that the work would be handled at decentralised levels with adequate financial and administrative delegations. There is need not only for strengthening the manpower infrastructure but also that which is needed for buildings and offices. Suitable provision will be earmarked in the plan for these purposes.

Finally, the question of maintenance has assumed considerable importance because a lot of money has been invested for construction of roads without providing for maintenance. Available resources in the non-plan sector are sufficient only for ordinary maintenance but do not take care of special repairs which are of equal importance particularly in a hill state. Thus, atleast 10 percent of the total plan outlay is proposed to be earmarked for such purposes for keeping the roads in a good state of repair. Allied to this is the need to provide a lumpsum of money for slope treatment and protective works along the road sides but for which many of the roads in the state are in danger of being washed away during the monsoon

Financial Dimension :

In order to meet the requirements of the programme outlined above a provision of Rs. 4900 lakhs has been proposed in the Seventh Plan.

ROADS AND BRIDGES

GN 2

(Rs. in lakhs)

Name of the scheme/ Projects	Sixth Five Year Plan (1980-85) Agreed outlay.	1980-83 Actual Exp.	1983-84 Actual Exp.	1984-85 Appd. Anti. Out- Expen- lay diture		Seventh Plan 1985-90 Proposed Outlay of which Capital content		1985-86 Proposed Outlay	of which Capital content
1	2	3	4	5	6	7	8	9	10
Removal of defi- ciencies in existing net work	1055.00	726.81	260.00	285.00	285.00	2330.00	2330.00	380.00	380.00
Replacement	340.00	164.84	96.00	90.00	90.00	600.00	600.00	140.00	140.00
Expansion	276.32	111.00	160.00	160.00	970.00	970.00	970.00	80.00	80.00
Link Roads	10.00	5.88	5.00	10.00	10.00	100.00	100.00	20.00	20.00
Additional facilities	50.00	—	0.10	1.00	1.00	100.00	100.00	13.00	13.00
Rural Roads	350.00	153.00	68.00	70.00	70.00	400.00	400.00	77.00	77.00
Machinery and Equipments	125.00	37.50	29.47	35.00	35.00	150.00	150.00	50.00	50.00
Centrally Spon- sored Schemes	10.00	56.88	3.00	20.00	20.00	50.00	50.00	10.00	10.00
Direction and Administration	70.00	42.00	25.00	25.00	25.00	200.00	—	30.00	—
Dist. & other roads	—	—	—	15.00	15.00	—	—	—	—
TOTAL	2420.00	1463.00	597.75	711.00	711.00	4900.00	4700.00	800.00	770.00

LIST OF PROJECTS PROPOSED IN THE SEVENTH PLAN

Sl. No.	Name of the Scheme	Class	Sl. No.	Name of the Scheme	Class
(0)	(1)	(2)	(0)	(1)	(2)
REMOVAL OF DEFICIENCIES					
MISSING ROAD LINKS					
(a) Spill over Schemes			(b) New Schemes		
1.	Simchuthang—Yangang	(14) ODR	28.	Ralong—Phamtham	ODR
2.	Phong—Bermoik	(24) ODR	29.	Pakyong—Mamring	ODR
3.	Melli—Chidam—Bhanjyang	(21) ODR	(b) New Schemes		
4.	Duga—Pacheykhani	(15) MDR	30.	Rayong-Tinkitam	ODR
5.	Pangthang—Lingdok	(10) ODR	31.	Dikchu-Rangrang	SH
6.	Tharpu—Malabassey	(10) ODR	32.	Ranka-Gangtok	MDR
7.	Raley—Samdong	(10) ODR	33.	On new Roads to be completed during the 7th plan	
8.	Chuwater—Pendam	(16) ODR	IMPROVEMENT OF LOW GRADE SECTIONS		
9.	Soreng—Sombaria	(16) ODR	(a) Spill over schemes		
10.	Legship—Tashiding	(12) ODR	34.	Dikchu—Sanklang—Mangan	(27) MDR
(b) New Schemes			35.	Pelling—Rimbi	(15) ODR
11.	Tinkitam—Kewzing	(20) ODR	36.	Nayabazar—Legship	(26) SH
12.	Mamring—Chuchachen	(20) ODR	37.	Soreng—Kaluk	(16) MDR
13.	Lingchom—Hee	(12) ODR	38.	Kaluk—Dentam	(19) MDR
14.	Melli—Turuk	(10) ODR	39.	Sanklang—Bey—Sakyong	(19) MDR
MISSING MAJOR BRIDGES			40.	Makha—Dikchu	(20) SH
(a) Spill over Schemes			41.	Nayabazar—Soreng	(26) MDR
15.	Rabi Khola	(400') ODR	42.	Rimbi—Yuksom	(21) ODR
16.	Rangla	(400') ODR	(b) New Schemes		
17.	Rangit	(400') ODR	43.	Melli-Phong	(26) MDR
18.	Ringyang	(200') ODR	44.	Gangtok-Rumtek-Song-Khamdong	(4) MDR
(b) New Schemes			45.	Assam—Pakyong	16) MDR
19.	Rangpo Khola	(400') ODR	46.	Sirwani—Bermoik	(10) MDR
20.	Beychu	(300') MDR	47.	Pakyong—Machong	(16) ODR
21.	On roads completed during the 7th Plan	—	48.	Geyzing—Pelling	(10) MDR
MISSING MINOR BRIDGES			49.	Duga—Pendam	(8) MDR
(a) Spill over schemes			50.	Khamdong—Lingzey—Tintek	(26) ODR
22.	Yuksom—Tashiding	ODR	51.	Rabongla—Yangang	(16) ODR
23.	Reshi—Rinchenpong	ODR	52.	Pabong—Simchuthang	(6) ODR
24.	Chidam—Bhanjyang	ODR	53.	Makha—Yangang	(22) ODR
25.	Soreng—Sombaria	ODR	54.	Rabongla—Ralong	(13) ODR
26.	Darap—Namboo	ODR	55.	Pelling—Dentam	(20) ODR
27.	Rumtek—Ranka	MDR	56.	Rimbi—Khechiperi	(11) ODR
			57.	Sirwani—Pabong—Rabongla	(35) SH
			58.	Namchi—Damthang	(13) SH

Sl. No.	Name of the Scheme	Class	Sl. No.	Name of the Scheme	Class
(0)	(1)	(2)	(0)	(1)	(2)
59.	Urban Roads		7.	Sikkip—Vok	(12) ODR
	(a) P. W. D	(60)	8.	Song—Sirwani	(10) ODR
	(b) L. S. G.	(30)	9.	Pakyong—Mamring	(8) ODR
	<u>REPLACEMENT</u>		10.	Dalapchen—Rongli	(9) ODR
	MISSING BRIDGES		11.	Rayong—Tinkitam	(18) ODR
(a)	Spill over schemes		12.	Dikchu—Rangrang	(8) SH
1.	Akkar bridge	500'-0" SH	13.	Rumtek—Ranka—Gangtok	(23) MDR
2.	Legship bridge	200'-0" SH	14.	Darap—Namboo	(8) ODR
3.	Rimbi bridge	200'-0" MDR	15.	Rongli—Rolep	(13) ODR
	(b) New schemes		16.	Ranipul—Lingzey	(8) ODR
4.	Mamring bridge	600'-0" MDR	17.	Sombaria—Puritar	(13) ODR
5.	Maney Chu (DSM)	200'-0" MDR	18.	S.B.S.—Tingbong	(8) ODR
6.	Riyang Chu (DSM)	300'-0" MDR	19.	Melli—Melli Dara	(8) ODR
7.	Det Khola (DSM)	300'-0" MDR	20.	Mangan Chandey Golai	(3) SH
8.	Tarey Chu (DSM)	300'-0" MDR	21.	Singtam—Chuwater	(3) ODR
9.	Sanklang (DSM)	400'-0" MDR	(b) New Schemes		
10.	Gour (DSM)	400'-0" MDR	22.	To connect villages of 500 population and above 200 Kms.	
	<u>WEAK PAVEMENT</u>		23.	To connect villages of 200 — 500 population 100 Kms.	
(a)	Spill over schemes		24.	Maintenance of Roads completed during the 7th Plan.	
11.	Legship—Rabongla	(26) SH		<u>LINK ROADS</u>	
12.	Nayabazar—Sombaria	(26) MDR	(a)	Spill over schemes	
13.	Singtam—Makha	(16) SH	1.	Phensong—Gompa	(1) VR
(b)	New Schemes		2.	D.S.M.—Gour	(6) VR
14.	Legship—Geyzing	(16) SH	3.	Lachung—Singri Gompa	(2) VR
15.	Tarku—Damthang Part length)	(10) SH	4.	Mongalbarey Bazar	(3) VR
16.	Khamdong-Singtam	(16) MDR	5.	Pakyong—Karthok	(2) VR
17.	Sombaria—Hilley	(29) ODR	6.	Rani Khola—Sichey	(3) VR
	<u>CULVERT</u>		7.	Geyzing—Sakyong	(6) VR
(a)	Spill over schemes		8.	Hilley—Ribdi	(5) VR
1.	Machung—Rangpo Khola	(15) ODR	9.	Chakung—Chumbung	(4) VR
2.	Reshi—Rinchenpong	(26) ODR	10.	Namchi—Tinzir	(2) VR
3.	Yuksom—Tashiding	(20) ODR	11.	Gyaba—Tikzek	(4) VR
4.	Kimboobotay—Sokpay	(15) ODR		TOTAL	(38)
5.	Manpur—Sumbuk	(15) ODR	(b)	New Schemes	
6.	Geyzing—Lingchum	(8) ODR		50 Kms.	VR

ROADS AND BRIDGES

GN 3

Item	Unit	Sixth Five Year Plan (1980-85) Target	1980-84 Achieve- ment	1983-84 Achieve- ment	1984-85 Tar- get	Antici- pated Achieve- ment	Seventh Plan (1985-90) Target proposed	1985-86 Target proposed
1	2	3	4	5	6	7	8	9
State Highway	Surfaced	Km.	217	197	217	197	225	197
	unsurfaced	"	—	20	—	20	—	20
Major Dist. Roads	Surfaced	"	303	288	303	288	354	288
	unsurfaced	"	93	99	93	99	78	99
Other Dist Roads	Surfaced	"	114	115	114	115	387	115
	unsurfaced	"	514	423	514	522	333	543
Inter Village Foot	Surfaced	"	—	—	—	—	—	—
Tracks	unsurfaced	"	330	125	110	110	325	35

Tourism

Introduction :

Endowed with natural scenic beauty and still possessing an exotic value, the state of Sikkim has tremendous potential for the development of tourism as a sustained industry. More and more people in the plains look forward to spending their holidays in hill resorts and being a state capital Gangtok has the ability to be a rival to other illustrious hill stations like Darjeeling, Simla, Nainital, Mussoie etc. The interior parts of Sikkim also have various attractions which would be of value to several interest groups like nature lovers, adventure tourists, culture tourists etc. Unfortunately, the restrictions imposed on foreigners to visit the state cannot but retard the growth of tourism in the state because foreigners who visit the country cannot visit the state unless they make prior arrangements well in advance. Thus the accent, atleast for the immediate future, can only be to develop domestic tourism.

The strategy of the department of tourism will be to concentrate on the intensive development of selected centres and avoid excessive emphasis on urban areas by opening up tourist attractions in the other regions of the state.

Review :

During the past decade, the tourism infrastructure has been developed to a great extent by the opening of several hotels and tourist lodges and information centres in major cities. The publicity aspect was taken care of through the publication of colourful brochures depicting the life and customs of the Sikkimese people and highlighting the more important socioeconomic aspects. A prestigious book entitled 'Images of Sikkim' was recently published which is a colourful depiction of the life and culture of the people of the state. During the Sixth plan a number of tourist festivals were held in the month of May which proved to be a major attraction for the visitors to the state. These festivals contained cultural evenings of dance and music followed by the serving of typical Sikkimese meals. For the culinary taste of visitors, the tourist department has opened a restaurant in Gangtok called the "Blue Sheep" which has made a very good beginning. In order to provide greater mobility, the transport wing of the department was also strengthened. It has currently a fleet of vehicles consisting of one 20 seater luxury bus, 2 land rovers and 6 ambassador cars.

Seventh Plan :

Keeping in mind the potential of tourism in the state, the main objectives of the 7th plan would be to promote the growth of domestic tourism by adopting a package approach and to provide a better infrastructure in the form of accommodation facilities and transport.

In order to attract domestic tourists in larger numbers it is necessary to ensure that a visit to Sikkim does not prove to be too costly. The publicity aspect should be such as to catch the imagination of an ordinary common man desirous of spending a holiday. Visitors to the state should have easy accessibility to places of interest and last but not the least, tourists should have ample opportunities to spend their time purposefully, without feeling bored.

As far as the cost aspect is concerned, it is proposed to organise package tours both by a tie up with leading travel agencies and independently. Comfortable buses will ply regularly from New Jalpaiguri or Siliguri to Gangtok to bring the tourists and after reaching Gangtok, a comprehensive sight seeing programme with proper guide facilities to cover a schedule of 2 or 3 days will be organised in such a manner that the total cost involved will not be beyond the reach of the middle class tourist. In order to achieve these objectives a fair amount of advance publicity for attracting tourists during the season will be arranged through the medium of newspapers and prestigious magazines. Colourful pictures depicting places of interest in Sikkim will be displayed at prominent places of congregation through out the country like in railway stations, air ports, post offices and so on. Brochures and write ups giving more details will be published periodically and distributed through travel agents and other sources to reach the different corners of the country. Producing documentary films and screening them in cinema theatres is undoubtedly an answer to open up the unknown places to the potential tourist. Information centres, already established in places like Delhi, Calcutta, Bombay and Siliguri will be strengthened so that an inquiring tourist can be given all the information that he needs.

Whatever bottlenecks there are in making places of interest inaccessible will be removed and for this purpose a well organised tourist transport system will have to be set up by the department. More mini buses of the luxury category will be acquired so that conducted tours can be arranged to take the tourists from Gangtok to the interior areas of the state. For the more affluent tourists, it should be possible to rent out ambassador cars on a similar basis. At the same time chosen private parties would also be encouraged to possess a fleet of vehicles specially to take tourists to places of interest during the seasons.

One of the most important aspects of developing tourism is to ensure that time does not hang heavily on a visitor. Although a large number of tourists particularly the domestic ones come to the state for a leisurely holiday they are apt to complain that there is nothing much to do unless avenues for keeping them occupied are developed. This policy requires the development of places of tourist interest in the interior areas where certain peculiar aspects of Sikkimese life and culture can be properly developed. Conducted tours will be organised taking tourists from Gangtok to specific places and serving typical picnic lunches. Such lunch facilities would be integrated with conducted tours for which the Blue Sheep restaurant could start certain branches like the one at Rumtek or at the middle camp where tourists can be taken to spend the day. Sikkimese "Chang" could form one of the many novelties to the tourist. It goes without saying that a cultural programme should form the finale to conducted tours and for this purpose either through the Culture Department or the Tourism Department by themselves will organise cultural evenings during the seasons. Special tourist festivals and fairs will continue to be relevant and will be given the needed encouragement.

It goes without saying that the success of a package approach depends upon an aggressive publicity campaign. The strategy would be to announce in leading newspapers a holiday package for a certain amount of rupees, which would include the cost of accommodation in the tourist lodge, transportation cost from Siliguri, sight seeing expenses and other incidentals for a specified period. Nepal had adopted this method with success and hence it is worth emulation. This will require imaginative planning and liaison with originating centres for which the organisational set up of the tourism department will be adequately reoriented and reorganised.

Diversification of activities so that certain interest groups will find plenty to do in the state is another

strategy aspect. In fact during the Seventh plan a conscious attempt will be made for development of mountain and youth tourism with due emphasis on the adventure aspect. Being rich in natural and cultural heritage, special package tours for those interested in wild life, orchids and Buddhist religion will also be undertaken.

The accommodation infrastructure which no doubt has improved considerably will be given a boost by improving and consolidating the existing lodges at Gangtok and Pemayangtse and by constructing halting places with reasonable bed facilities in the travel circuits. A youth hostel at Namchi will be completed and opened to the younger generation who are particularly fond of organising trekking in the Himalayas. The introduction of angling and river rafting as part of the tourism network will also be given due consideration.

The developmental activities in the fields of tourism would create job opportunities among the younger generation as guides, organisers and small shop owners selling souvenirs to tourists. The growth of tourists in the state is expected to increase to a level of at least 37,000 per year including about 7,000 foreigners.

Commercial aspects being part of tourism development, the department will have a cell exclusively to deal with the commercial part like the running of restaurants, lodges and the transport services. In view of the smallness in the scale of operations a Tourism Development Corporation will not be set up.

All in all, the 7th plan could start with a confidence that the rich cultural heritage of the state manifested through historical places and inspiring monasteries, breath taking scenery and a salubrious climate would attract more and more tourists to the state, which for historical reasons was in the past kept out of the itinerary of many a tourist.

Financial Dimension :

An outlay of Rs. 250 lakhs has been proposed to take care of the requirements of the proposals briefed above.

TOURISM

GN 2

(Rs. in lakhs)

Name of the scheme/ Projects	Sixth Five Year Plan (1980-85) Agreed outlay.	1980-83 Actual Exp.	1983-84 Actual Exp.	1984-85		Seventh Plan 1985-90		1985-86	
				Appd. Out- lay	Anti. Expen- diture	Proposed Outlay	of which Capital content	Proposed Outlay	of which Capital content
1	2	3	4	5	6	7	8	9	10
Direction & Administration	16	8.65	3.00	4.00	4.00	3.50	—	0.50	—
Tourist Information & Publicity	30	30.75	11.50	8.00	8.00	80.00	—	15.00	—
Tourist Transport Service	20	12.96	4.50	2.00	2.00	40.00	—	6.50	—
Tourist Accommodation	50	18.90	3.00	11.00	11.00	65.00	58.00	10.00	9.00
Tourist Centres	26	4.16	2.00	1.00	1.00	39.00	—	4.00	—
Trekking	30	4.23	1.50	1.50	1.50	20.00	—	3.50	—
Survey & Statistics	3	—	0.50	0.50	0.50	2.50	—	0.50	—
	175	79.65	26.00	28.00	28.00	250.00	58.00	40.00	9.00

TOURISM

GN 3

Item	Unit	Sixth Five Year Plan (1980-85) Target	1980-83 Achieve- ment	1983-84 Achieve- ment	1984-85 Target	1984-85 Anti- cipated Ach.	Seventh Plan (1985-90) Target proposed	1985-86 Target proposed
TOURISM								
A) International Tourist Arrivals	Nos.	3,750	6,769	1,000	3,750	600	10,000	1,500
B) Domestic Tourist Arrivals	Nos.	26,550	59,912	10,000	26,550	8,600	50,000	10,000
C) Accommodation available	Nos. of rooms/ beds.	517/1,138	945/1,905	436/771	517/1,138	321/635	800/1,500	600/1,200

Scientific Services

The injection of improved scientific and technological input in the planning system has been given a place of prime importance in the approach to the Seventh Plan. The idea is that in all sectors of development there should be a scientific input so that the end results are not only an improvement but also contribute to qualitative changes in the lives of the ordinary people. With this end in view, towards the latter part of the Sixth plan, specific amounts have been earmarked exclusively for developing science and technology at the state level.

As far as Sikkim is concerned the absence of a scientific temper in the various echelons of the government and the general industrial and social backwardness of the state made it rather difficult to go ahead with the overall development of science and technology and the translation of such results in the other sectors of development. In spite of these drawbacks a small beginning was made in the last two years of the sixth plan by providing financial assistance to the Sikkim Science Society which has drawn up a scheme of granting fellowships to candidates desirous of developing certain fields of development which are pertinent to this state. Sikkim is known for its orchids, other rare species of flora and certain types of minerals on which there is scope for doing scientific work. The amount provided for science and technology was also utilised for developing known fields of work like bio-gas and solar energy.

During the Seventh plan the Sikkim Scientific Society will be given further assistance so that scholars desirous of taking up specific research work will be helped financially. The possibility of linking the science and technology work with the scientific laboratories of the C S I R and of other states will also be considered.

Financial Dimension;

A provision of Rs.8 lakhs is earmarked for these purposes in the Seventh plan.

SCIENTIFIC SERVICES

GN 2

(Rs. in lakhs)

Name of the Scheme/ Projects	Sixth Five year Plan (1980-85) Agreed outlay.	1980-83 Actual expendi- ture.	1983-84 Actual expendi- ture.	1984-85		Seventh Plan (1985-90)		1985-86	
				Appd. Out lay	Anti. Expen- diture.	Proposed Outlay	of which Capital content	proposed Outlay.	of which Capital content.
1	2	3	4	5	6	7	8	9	10
Scientific Services	-	-	1.00	1.00	1.00	8.00	-	1.00	-
Total	-	-	1.00	1.00	1.00	8.00	-	1.00	-

Education

“Education is both a product and producer of society and there is a close co-relation between transformation of socio-economic environment and the structures and means of education... For centuries educational development had generally followed economic growth. Now, probably for the first time in the history of humanity, development of education on a world-wide scale is tending to precede economic development”

—Learning to be : UNESCO Paris 1972.

“If educational expansion is any index of economic growth it would appear that the state of Sikkim has undergone socio-economic development at an increasingly rapid pace during the last quarter century. The general quality and means of education in the schools of the state, however, have still not attained the desired measure of satisfaction. Three main reasons for this under-achievement are the phenomenal increase in enrolment and number of schools, particularly after 1974, absence of a uniform system of registration of births in the state resulting in enrolment of a very large percentage of over-age pupils at all stages of education, and the unfortunate gap between the need for an increasingly large number of adequately trained teachers and their availability.

If this problem is not tackled immediately through a clear identification of priorities, systematic planning and the introduction of an element of accountability at academic as well as administrative levels, the damage in terms of sub-standard education, resulting in educational stagnation and wastage now, and in general socio-economic decay in the near future, may become irreparable. Even though the nature of the problem is significantly serious, its size is still small; thanks to the manageable demographic structure of the state. The main thrust of plan proposals, in the remaining years of Sixth plan, is therefore, aimed at consolidation and improvement of the existing educational resources of the state, and timely prediction and control of further expansion based on progressive monitoring of the enrolment data ..”

Late Shri Madhusudan Singh, Ex-Director of Education, Sikkim.

Review :

The Education Directorate was set up as early as the year 1954. In that year there were only 88 educational institutions which has today risen to 761, including 165 pre-school centres. The enrolment which was only 2,5000 in 1954 is today 83,337 including about 5,000 pre-school children. In 1954 there were 70 lower primary schools, 14 upper primary schools, 2 middle schools and 2 high schools. In 1980 when the Sixth Five Year plan started, the number of institutions rose to 501 with an enrolment of 55,606. These 501 institutions comprised 321 primary schools, 44 middle schools, 29 secondary schools, 7 senior secondary schools and 100 pre-schools. By the end of the 6th plan the number of institutions will have been stepped up to 761 with an enrolment of 78,337 excluding the pre-school children. This includes an increase of 174 lower primary schools during the 5 year period and upgradation of 63 primary schools to junior high schools. Likewise, 16 junior high schools were upgraded to high schools and 3 high schools to higher secondary schools. During this period 80 pre school teachers,

1065 primary teachers, 427 graduate teachers, 39 post graduate teachers, and 331 language teachers were recruited increasing the strength of teachers from 2,334 at the beginning of the plan to 4,274 by the end of the plan. A tabular statement given below indicates the achievements in regard to enrolment,

Stage	Target	Cumulative Achievement	Percentage	Target	Additional Achievement	Percentage
Primary	64,000	62,950	98.36	24,400	23,300	95.49
Middle	14,000	13,485	96.32	7,600	7,100	93.42
Total Elementary	78,000	76,435	97.99	32,000	30,000	95.00

Enrolment Targets and Achievements in respect of SC and ST children at the elementary stages during the Sixth plan are given as under :

Stage	Target	Cumulative Achievement	Percentage	Target	Additional Achievement	Percentage
Scheduled Caste						
Primary	4200	3800	90.48	1840	1440	78.26
Middle	600	550	91.67	375	325	86.67
Total Elementary	4800	4350	90.63	2215	1765	79.68
Scheduled Tribe						
Primary	15,500	14,500	93.55	6730	5730	85.14
Middle	3,300	3,250	98.48	1730	1680	97.11
Total Elementary	18,800	17,750	94.41	8460	7410	87.59

Besides the formal system of education in the schools, the 6th plan was a period of considerable development in the sphere of adult education. At the beginning of the 6th plan there were 524 adult education centres in which 16,400 learners in the age group 15 to 35 were enrolled. The target was to enrol an additional 80,000 adults during the 6th plan period but up to July 1984 the additional enrolment has been only 16,700, which though falling short of the target is a considerable step up from the base level figures, 68 more centres were established in the process. Under the State Adult Education Programme, 95 centres were established and 2,245 adult women learners were enrolled.

During the 6th plan the Teachers' Training Institute was consolidated and improved with the provision of facilities like hostel, library and other equipments. 210 inservice teachers and 200 pre-service primary teachers were trained during the 5 year period. The state institute of education was also expanded to some extent though not to the desired level. There were deficiencies, particularly, in the fields of language teaching and the population education cell.

As regards higher education, the most significant achievement during the 6th plan was the partial completion of a new building for the Sikkim Government College which was declared open in June 1984. The science block is now under construction. It is expected that in the early part of the next financial year the entire college will be able to shift to the new buildings. During the previous 5 years, the scope of instruction in the college was also widened with the introduction of honours courses in a few subjects which has helped to raise the standard of the college. The present enrolment has escalated from 173 to 438 children. The college, while providing avenues for higher education, has its limitations and therefore the Government assiduously followed the policy of making sure that seats for learning in higher education, particularly in higher institutions outside the state, were obtained. Students sent for such courses were given generous scholarships as a result of which a number of qualified candidates likely to be available for absorption in Gangtok will be improved upon.

Pre Primary Education :

The introduction of pre primary education as a prelude to formal education in the school system by setting up of pre primary centres and appointing school mothers has proved to be popular judging from the demands arising from rural areas for more and more such centres. The child is inducted into a school atmosphere in such centres, where the school mother initiates him into the basics of learning and provides him with necessary playing material. The concept of learning and development through joyful activities in the age group of 3 to 6 has therefore to be accepted and the programme expanded during the Seventh plan. In these centres the ICDS programme of feeding children will be integrated. At the present level of enrolment it is found that only 47 percent of children in the age group 4 to 6 are in pre-primary centres. By the end of the Seventh plan, the coverage of such children is proposed to be increased from about 8,500 to nearly 13,000. At present, out of 596 primary sections only 165 have pre-primary centres attached to them. During the Seventh plan at least 400 more pre-primary centres are targeted for. From 8511 children attending pre-primary centres at present, the number is expected to rise to 22,080 by the end of the 7th plan.

The scope of the preparatory stage will be shaped properly taking into account the socio-economic angles. All inputs like health, nutrition and social welfare will be built in so that there would be comprehensive coverage at the preparatory stage itself.

Elementary Education :

The programme of universalising elementary education for children in the age group of 6 to 14 retains an important place in the Minimum Needs Programme of the Seventh plan. As in other states, the main problems of elementary education at the primary level consist of a steep drop out ratio, inadequate coverage of special target groups like scheduled caste and scheduled tribe children and the lack of physical facilities in the form of classrooms, teachers etc.

The approach in the Seventh plan would, therefore, be :

1. to remove as far as possible the backlog in the physical facilities;
2. to provide lower, upper and middle school sections in habitations of various population slabs of 100 to 199, 200 to 299 and 300 to 399 respectively;
3. to cover out of school children under non-formal education programmes;

4. to spread education among special target groups;
5. to introduce modifications in curricula so as to establish a linkage with local needs;
6. qualitative improvement of teaching.
7. expanding the teacher training facilities through pre-service and inservice training systems and
8. to strengthen the supervisory and monitoring mechanism.

The enrolment level at present has reached a stage which reveals certain disparities. While in major urban areas there is a high level of enrolment, this is not the case in many of the outlying areas. At the primary stage the current enrolment percentage is 141.28 which is on account of under age and over age children within the primary level. However, at the middle stage level the percentage drops down to 52.59 which indicates that the drop out rate is steep. A comparative study of the position of children belonging to scheduled castes and scheduled tribes and among girls reveals that in general these special target groups are more affected by the drop out phenomenon than the general groups. It is therefore necessary to lay down district wise targets in order to establish a trend towards universalisation of elementary education.

On the basis of 1931 Census, the estimated population in the age group of 6 to 14 in 1984-85 will be 1,17,890. The total enrolment in elementary classes including the non-formal system is 85,785. The figures indicate a substantial gap pointing out to the fact that there are several children in this group who will have to be enrolled. The child population of 6 to 14 by the end of Seventh plan is estimated to be 1,34,033. Additional enrolment of 48,248 children will therefore have to be catered for in the Seventh plan period.

The objective is proposed to be achieved by laying down specific targets for full time, part time, formal and non-formal methods of education. In concrete terms, in order to ensure that all the children of age group 6 to 11 are enrolled at the primary stage, a minimum 200 number of lower primary schools and 200 upper primary schools will have to be opened in addition to introducing a multiple entry system so that children who had dropped out of the formal system are re-enrolled. Regarding the age group 11 to 14 the target is to attain an enrolment percent of roughly 80 by the end of the plan. In Sikkim this will require special attention in backward regions where the enrolment levels at the middle stage have to be established particularly in habitations with a population level of less than 500.

In both formal and non-formal systems, the emphasis would be to provide for an effective delivery of services to children. To ensure that the drop out rate is controlled appropriate incentive programmes like free mid-day meals, supply of free text books and stationery, uniforms, attendance scholarships to girls and compensations to the families of scheduled castes and scheduled tribes girls will be taken up as a major instrument towards the reduction of drop outs. Another innovation proposed is to adopt a no detention policy at the primary stages so that the children do not feel left out of the educational stream.

Since it has been noticed that children belonging to scheduled castes and scheduled tribes, landless and educationally backward communities like Limboos of west district are still to be developed, the educational needs of these children will be looked into through a wider perspective, keeping their socio economic conditions in mind. Accordingly remedial coaching programmes to overcome educational

backwardness will be introduced. Special innovative programmes like learning while earning will also be designed.

Quality aspect of education is also of equal importance not only to attain better levels but also for retaining children in schools. For this purpose, it is proposed to develop primary education curricula with the goal of imparting necessary levels of literacy numeracy, comprehension and functional skills related to the local socio economic factors. Flexible models with scope for diversification will be evolved. The main objective is to stress that curricula form an important instrument for inculcating humanistic capacity for tolerance and promotion of national integration, scientific attitudes and individual capability of learning from the environment. A wider range of subjects like ecology, nationalism and self reliance will form part of the syllabi for which the State Institute of Educational Research and Training in close collaboration with NCERT will develop meaningful text books.

There is no denying the fact that the quality of teaching can be improved only if there are adequately trained and fully motivated teachers at the primary level. At present about 50 percent primary teachers and 72 percent of the middle school teachers in the state are untrained. One of the major attempts in the Seventh plan will be to reduce this backlog of untrained teachers and hence both pre-service and inservice teacher training programmes will be emphasised upon. In order to provide for a proper training system, the Teachers' Training Institute will provide for a three year integrated course for preparing primary teachers to take on the onerous responsibility of shaping the future of the children. Separate teacher training institutes will be set up in district headquarters. Under the vocational stream in the PNG High School teacher training will be introduced at the plus 2 stage exclusively for girl candidates which is consistent with the present policy of diversifying vocationalization. Besides these a four year integrated course at graduate level will also be introduced in the Sikkim Government College on the subject of Education. Another innovation contemplated is to enable the teachers to appear as private candidates for passing certain subjects like English literature and so on and also to improve upon the existing materials.

The provision of physical facilities needs support. The enrolment explosion is another aspect of elementary education and cannot be ignored. Besides this, the backlog of hostels and staff quarters will also have to be gradually wiped out. Residential schools are proposed to be set up atleast at all district and sub district levels. The schools will have to be provided with furniture, blackboards and other equipment which form part of the infrastructure. Wherever possible, the construction will be undertaken using local labour and local material. NREP programmes will be dovetailed with classroom construction in order to meet the requirements of schools. The maintenance of these buildings will also be provided for atleast partially. The gram panchayats will have to take a leading role in the maintenance aspect. Provision of language teachers is another aspect of elementary education which is an expensive proposition because even with a low level of enrolment there is need to provide for atleast one language teacher in each of the 5 languages. This has distorted the teacher pupil ratio giving a wrong impression of the actual position in the state. During the Seventh plan, the possibility of recruiting language teachers on a part-time adhoc basis on a monthly allowance will be considered.

It needs no special emphasis that the qualitative aspect of education can be improved through education technology. Taking into account the spread of television and the National programme of providing instruction through INSAT, the state will adopt such mass media facilities wherever there is spread of

television, Direct telecast of elementary education programmes will also help in reducing, atleast to some extent, the requirements of teachers and classrooms.

Text Books :

The responsibility of preparation, production and publication of language text books is with the education department. During the 7th plan the quality aspect will be given more importance. The academic expertise and experience of the text book section will be taken advantage of to constitute a resource cell for producing learning and instructional materials for the adult education and non-formal education also.

The text book trade in the state is nationalised. The department of education is currently in charge of the entire matter of purchase and sale of text books. The feasibility of establishing a text book corporation, which will handle procurement, distribution and sale on a commercial basis will, however, be explored.

In order to promote the universalisation of elementary education, text books to students of primary classes will be supplied free of cost. At the middle and secondary levels it is proposed to subsidise the cost by 50% as an incentive to retain students at these levels. However, for those children belonging to the weaker sections like scheduled castes and scheduled tribes and ex-service men text books will be supplied free of cost. This facility is extended to girl students also.

In order to bring about improvements in the curriculum, particularly at the primary level, and to link textual material with local needs it is proposed to produce all text books in primary subjects locally. At the middle class level also some of the subject text books will be produced locally but with the assistance of NCERT. At the secondary level NCERT text books will be purchased from reputed concerns. Adequate outlay will be provided for facilitating transportation and distribution of books and for creation of storage facilities at the district and headquarter levels.

Non-Formal Education :

Since it will be possible to reach the goal of universalisation of elementary education only through combination of the formal system of education with the non-formal programmes, the latter will be concretized and made flexible so as to cover all drop outs. The content and course duration of non-formal education will be so shaped that there will be a basic minimum package of inputs which ultimately corresponds with the formal system of education, allowing for a linkage between the two. The structure will be flexible, particularly in regard to the instructional programmes. Since the two types comprise the total system, they should be treated as complementary components and accordingly a single officer of the education department is proposed to be made responsible for designing and managing both forms. The idea is that there should be a linkage between the formal and non-formal systems and multiple point entries from the latter into the former.

The earlier attempts on non-formal education have been virtually non-starters because even the education planners viewed this as an inferior system. It has now been realised that due importance should be given to non-formal education so as to prepare the children who are drop outs to either enter the formal system of education or to divert them to vocational streams and provide them opportunities for gainful employment. During the 7th plan special responsibilities will be assigned to provide non-formal education to the children of under privileged communities even to the extent of designing the programmes under the caption of "earning and learning". The

State Institute of Education Research and Training, in collaboration with UNICEF, NCERT and other national organisations will draw up feasible programmes, develop syllabi and reading material and also undertake the training of teachers exclusively for non-formal education.

As the participants under this programme will be mostly from the weaker sections, it would be appropriate to provide incentives such as free books, stationery and attendance scholarships etc. Taking into account the number of children in the age group 6-14 by the end of 1990 and the possible numbers enrolled in the formal system, it is anticipated that 15,000 children will have to be enrolled in the non-formal system during the 5 year period 1985-90. It is also proposed to gradually create non-formal education facility for drop outs in the age group of 14-18. In addition, since girls generally shy away from co-educational non-formal centres, atleast a few centres exclusively for girls with women teachers are proposed to be provided. A scheme called "each one teach one" which was initiated during the 6th plan, but which did not succeed for various reasons, will also be implemented in a modified form by requesting senior students to adopt 2 to 5 learners particularly from the weaker sections. The supervisory element will also be strengthened so that there is adequate feed back on the implementational aspects.

Teacher Education :

Since the quality of education depends almost exclusively on providing trained teachers, one of the items of priorities in the 7th plan will be to consolidate the existing teacher training infrastructure and to expand T T I's to all district head quarters. The T T I at Gangtok is currently in rented premises. An independent building complex which will have all the facilities for training of inservice primary teachers will be constructed.

The current intake capacity of 120 is proposed to be increased to 200. A vocational education course in the discipline of teacher education will be introduced at the plus two (2) stage with a duration of two years in the P.N.G.H. School at Gangtok

The huge back log of trained teachers will be progressively made good and the training of teachers will be extended for preschool and for language teachers. As far as trained graduate and post-graduate teachers are concerned, it is noticed that most of such teachers are from outside the state. To ensure that local graduate and post graduate teachers are available 3 to 4 year integrated course of academic cum-teacher's training is proposed to be started at the Sikkim Government College. For the training of prospective post graduate teachers, N C E R T will also be requested to reserve required number of seats for Sikkim candidates in the various regional colleges of education in the country.

The State Institute of Education which is the academic wing of the Department of education is also responsible for qualitative improvement of education.

So far, it has been concentrating on training and orientation of teachers through short and long term courses mainly related to the teachers up to the elementary level. During the 6th plan the State Institute of Education trained more than 600 primary teachers in two contact programmes. They also developed instructional material for class I to VIII, produced learning material for out of school children in the age group 9 - 14 and specially trained Science and Mathematics teachers. Considerable help was received from the UNICEF.

During the 7th plan, the role of the SIE will be progressively expanded so that it ultimately becomes a full-fledged State Institute of Educational Research and Training. For this purpose a separate building is necessary since currently it is functioning in a rented building. Among the new programmes contemplated mention should be made of a correspondence-cum-contact training programme designed and introduced for local language teachers. UNICEF assistance will be taken advantage of and crucial academic areas like early childhood education, English language teaching and so on will be undertaken. The Institute will also coordinate with the other wings of the department for production of text book material. It is also proposed to establish a vocational guidance and council cell so as to help the youth of the state to make a choice in their future careers.

Educational Technology:

The Educational Technology Cell is meant for the purpose of introducing sophisticated learning systems by using tapes, film strips, radio and television. During the 7th plan full advantage will be taken of all Centrally sponsored schemes under education technology covering not only the education of children but also the training of teachers. National values like socialism and secularism will be disseminated through easily accessible material with the target group including parents and the public at large.

Until radio and television facilities are extended to the schools, the technology programme will be confined to the production of illustrative material through popular media like cassettes so as to help the school going children as well as the inmates of the adult education centres. The cell will be strengthened by adding to the staff and providing more equipment and mobility. The feasibility of giving it autonomy and naming it the 'State Institute of Technology' will also be considered.

High and Higher Secondary Education :

High and higher secondary education at the secondary and senior secondary level is an important terminal stage for all children because, it is at this point that options are exercised by students either to terminate their education or to pursue higher studies in professional, scientific or literary fields. In an educationally backward state like Sikkim, consolidation of existing infrastructure at this level and appropriate expansion of facilities to the still unserved areas to meet the growing demands particularly from the backward segments of society, is therefore a matter of paramount importance.

By the end of the sixth plan, the state will have 37 high schools and 11 higher secondary schools with an enrolment of 3,165 and 928 respectively. This level of enrolment has fallen short of the sixth plan targets by nearly 40 percent. The main reason for the shortfall is because of the number of schools not being sufficient and the inherent difficulties in sending pupils from remote areas to central points where hostel facilities also are negligible.

The current enrolment level of 4,093 including both secondary and higher secondary, is expected to rise to atleast 7,000 by the end of the seventh plan. This figure could well be 10,000 provided the facilities can also be improved upon commensurately. To meet the exigencies of such an enrolment level atleast 11 junior high schools and 10 high schools will have to be upgraded to secondary and senior secondary levels respectively so that the students can be accommodated. A sainik school will also be established.

In view of economic constraints many useful aspirants wanting to join full time secondary level of education

are not able to do so as a result of which apart from upgrading existing schools to cater to increasing levels in the formal stream a non formal stream of secondary education consisting of correspondence and part time courses and open schools stream will also be developed so that more number of aspirants could be provided within the secondary education system. At present, 375 such children are registered with the open school programme run by the Central Board of Secondary Education. Another strategy envisaged is to provide a network of hostel facilities or Ashram type residential schools so as to cater to the weaker sections. In order to ensure retention of such children incentives such as attendance scholarships for girls, free supply of text books etc. will also be considered.

While expansion at secondary education level is of paramount importance there is also urgent need to consolidate the existing infrastructure by providing to the existing schools the basic needs in the form of laboratories, libraries, class-rooms etc. Whenever there is a shortfall or a gap between standards and desired levels they will be made good within the plan.

The qualitative improvement of secondary levels of education is also of importance particularly in the science stream where the Government of India have themselves spelt out a policy in detailed terms. The main drawback is that the teachers have to be trained in science and mathematics and in certain specialised fields like commerce where the existing levels leave much to be desired. The secondary stage is the most important stage of education because it is at this level that the employability of a student within his environment is determined. Therefore, not only the teachers but also the curricula and syllabi should be qualitatively up to standard. In order to achieve the employment objective, it is proposed that apart from courses in humanities, science and commerce there will be vocationalisation of education at the higher secondary level. The vocationalisation along with the expansion of SUPW is perhaps the best answer to make the children ready for taking up jobs suited to their aptitude and environment. Along with vocationalisation, science teaching will be given top priority since in an increasingly competitive world it is highly necessary that the basic understanding of science for higher levels of attainment is ensured. In collaboration with NCERT, science kits at moderate costs will be designed and supplied through the schools to the students. Both in vocational education as well as in science, a system of counselling will also be adopted so that young children are made to realise the importance of certain fields of education.

Another strategic approach that is proposed to be followed in the Seventh plan is to identify exceptionally talented children who will be given all the facilities for improving their present status and to give them the needed opportunities for further development. The idea is that atleast such children should not be denied the opportunity of shining in life owing to the absence of adequate institutions within the state. Consistent with this policy, adequate number of seats will be reserved in the leading colleges and institutions of the country so that the academic quality of the children within the state will be improved upon.

There are a few schools in the state like Tashi Namgyal Academy, P. N. Girls' High School and the St. Xavier in Pakyong which are run more or less as private institutions but with Government support. These schools are important because they are better managed and consequently the standard of education is comparatively on a better level. In order to ensure that children studying in these schools are given the needed facilities, financial assistance in the form of grants to them will be provided during the Seventh plan.

In brief, the emphasis in the Seventh plan would be to consolidate the existing institutions and to make them better centres of learning so that atleast those fortunate to reach these levels of education are provided with meaningful opportunities to pursue higher levels of academic excellence.

Collegiate Education :

After the higher secondary stage the provision of college education is and should be a part of the educational policy of the state. In Sikkim, there is one Degree College and one Law College which are affiliated to the North Bengal University. Steps are on the way for forming a separate university for Sikkim which, in all likelihood, is likely to be a Central University.

The emphasis in the Seventh plan will be to consolidate and use optimally the facilities in the existing college by restructuring the courses available at the degree level and to make them more purposeful and relevant to the needs of the state. This will require restructuring of the conventional under graduate courses and to widen and enrich the scope of college education by incorporating subjects which are more useful for a growing economy. The new design for under graduate courses will have a flexible subject combination linking graduation with school education. At the same time more relevant honours courses will be introduced and a B.Ed course, which is found to be absolutely essential for feeding the schools with trained teachers, will be introduced. The possibility of promoting post graduate education and research in specific fields will also be considered.

The existing Degree College has been functioning from a rented building but one section of the new building has now been completed and it is expected that within the first year of the Seventh plan the college building would become functional. Necessary provision is proposed to be provided for completing the building infrastructure which will include not only classrooms, laboratories and libraries but also an administrative block and staff quarters.

The enrolment level in the college is today only 273 which when compared to the enrolment level in the evening college of 1972 is somewhat higher but still not sufficient to really make a name for itself as a college of merit. During the 7th plan the enrolment is expected to increase and by the end of the plan it is expected to touch the 1,000 mark. Correspondingly there will be an expansion in the facilities covering all the disciplines.

As far as the Law College is concerned, the emphasis is on consolidation by adopting the pattern of a 5 year degree course ending up with a degree in law. The existing evening college will be converted into a full fledged college.

Other than developing the facilities of the existing college Sikkimese students will be helped to attain higher levels of education at the post graduate level by securing seats in institutions outside the state and by tying up admission with the system of scholarships. The teachers in the college will also be encouraged to undergo in-service orientation programmes so that the level of instruction can also be continuously improved. If the Sikkim University comes into being, the entire aspect of higher education in the state will take a turn towards the betterment of academic pursuits by the boys and girls of the state.

Scholarship and Stipends :

In order to provide more opportunities for the bright students of the state to acquire higher educational skills, the scheme of providing scholarships and stipends has been a major programme of the education

department. The idea is that no child who is academically of a higher level should be deprived of pursuing higher studies either in technical or professional fields for want of money. Hence, postmatric scholarships are granted by the department. In addition, the scheme of scholarships also extends to the prematric level where the department has been implementing merit-cum-means scholarships. The scheduled caste and scheduled tribe children are given stipends merely for attending the schools.

During the 7th Plan the scheme of scholarships will continue to be implemented on a more wide spread basis. Scholarships for higher studies will include special amounts on courses like M.B.B.S., B.E. BVSc, B.Sc Agriculture and other general courses including M.B.A., Hotel Management and honours courses in special subjects. At the secondary and higher secondary stage besides the grant of scholarships on the pattern now existing, attendance scholarships to girl students will be introduced. This is to ensure greater attendance of girls.

Scholarships will also be provided for promoting teacher education at graduate and post graduate level. At the school level, special scholarships for pursuing studies in Sainik schools and In the Motilal Nehru school will also be granted.

Games, Sports and Youth Welfare :

Promotion and development of traditional and modern games including yoga should be encouraged by providing the necessary facilities and infrastructure on a large scale and by inculcating sports consciousness among the masses so that by regular participation in these activities the Nation is made healthy, fit and strong. In pursuance of the National sports policy the department will undertake the responsibility of promoting facilities for games and sports particularly in and spotting and developing talent at all levels.

The sports section of the education department will be expanded and children at all levels will be given atleast the basic facilities of playing games. Wherever there are no play grounds attempts would be made to acquire the needed land and develop them. In places where there are already certain facilities the endeavour will be to introduce coaching and to spot out talent. Talented youth will be given extra coaching and the possibility of sending them to other institutions like the Motilal Nehru Institute of sports will be considered. Special amounts will be earmarked exclusively for girls.

Apart from sports physical education will also be given due prominence because the promotion of physical fitness is an essential requisite for developing the youth. Properly trained physical education teachers will accordingly be appointed in the more important schools.

Other than encouraging sports in schools and colleges, it is also the responsibility of Government to promote games and sports among the non-student youth. Among the games played in Sikkim the most popular one is foot ball. The Sikkim Foot Ball Association usually conducts a tournament in the state under the caption of Governnor's Gold Cup. Besides, the state participates in other National tournaments like the Santosh Trophy and Subroto Mukherjee Trophy and so on. In order to help the Association to carry on its activities not only for conducting and participating in tournaments but also to organise camps adequate financial allocations will be made. The possibility of constructing more indoor gymnasias so that other types of sports can be promoted will also be considered.

Apart from games and sports the department will also develop other youth welfare activities like N.C.C., Scouts and Guides, Nehru Yuwa Kendra and so on. Educational tours and excursions will also be undertaken. Necessary financial allocations will be provided for these purposes.

Financial Dimension :

In order to meet the multifarious requirements in the field of education a total outlay of Rs. 33 crores is proposed for the Seventh plan.

EDUCATION

GN 2

(Rs. in lakhs)

Name of the scheme/ Projects	Sixth Five Year Plan (1980-85) Agreed outlay.	1980-83 Actual Exp.	1983-84 Actual Exp.	1984-85		Seventh Plan 1985-90		1985-86	
				Appd. Out- lay	Anti. Expen- diture	Proposed Outlay	of which Capital content	Proposed Outlay	of which Capital content
1	2	3	4	5	6	7	8	9	10
1. Elementary Education	370.00	252.56	190.61	261.00	261.00	1500.00	400.00	234.00	82.00
2. Secondary Education	180.00	152.25	90.59	136.00	136.00	800.00	200.00	125.00	42.00
3. Higher Education	70.00	26.60	22.02	45.50	45.50	290.00	150.00	45.00	28.00
4. Teacher Education	100.00	23.20	10.00	33.00	33.00	240.00	50.00	36.00	08.00
5. Games, Sports & Youth Welfare	40.00	24.85	11.37	25.00	25.00	180.00	30.00	30.00	-
6. Adult Education	10.00	7.00	1.05	08.00	08.00	50.00	-	10.00	-
7. Scholarships & Stipends	30.00	7.50	15.57	26.50	26.50	180.00	-	30.00	-
8. Direction & Administration	30.00	19.35	11.85	15.00	15.00	60.00	-	10.00	-
TOTAL	830.00	513.31	352.96	550.00	550.00	3300.00	830.00	520.00	160.00

EDUCATION

GN 3

Item	Unit	Sixth Five Year Plan (1980-85) Target	1980-83 Achieve- ment	1983-84 Achieve- ment	1984-85 Target	Anti- cipated Ach.	Seventh Plan (1985-90) Target proposed	1985-86 Target proposed
1	2	3	4	5	6	7	8	9
A. ELEMENTARY EDUCATION								
I. Classes I—V (Age-Group 6-10)								
(i) Total Enrolment								
(a) Boys	Nos.	38,500	28,781	31,562	38,500	34,982	32,000	35,000
(b) Girls	Nos.	25,500	20,852	23,140	25,500	25,839	26,000	28,600
(c) Total	Nos.	64,000	49,633	54,702	64,000	60,821	58,000	63,600
(ii) Percentage to Age-Group								
(a) Boys	Nos.	177.97	140.95	150.07	177.97	161.71	131.41	159.27
(b) Girls	Nos.	119.23	103.44	111.44	119.23	120.82	96.54	117.68
(c) Total - 1	Nos.	148.77	122.32	130.88	148.77	141.28	113.10	137.43
(iii) Enrolment of Scheduled Castes								
(a) Boys	Nos.	2,400	1,811	1,970	2,400	2,200	1,900	2,100
(b) Girls	Nos.	1,800	1,359	1,462	1,800	1,600	1,500	1,600
(c) Total	Nos.	4,200	3,170	3,432	4,200	3,800	3,400	3,700
(iv) Percentage to the Age-Group								
(a) Boys	Nos.	11.09	8.87	9.37	11.09	10.17	5.94	6.00
(b) Girls	Nos.	8.42	6.74	7.04	8.42	7.48	5.77	5.59
(c) Total	Nos.	9.76	7.81	8.21	9.76	8.83	5.86	5.82
(v) Enrolment of Scheduled Tribes								
(a) Boys	Nos.	9,000	6,454	7,486	9,000	8,350	7,600	8,300
(b) Girls	Nos.	6,500	4,745	5,525	6,500	6,150	6,200	6,800
(c) Total	Nos.	15,500	11,199	13,011	15,500	14,500	13,800	15,100
(vi) Percentage to Age-Group								
(a) Boys	Nos.	41.60	31.61	35.59	41.60	38.60	23.75	23.71
(b) Girls	Nos.	30.39	23.39	26.61	30.39	28.76	23.85	23.78
(c) Total	Nos.	36.03	27.60	31.33	36.03	33.68	23.79	23.74
II. Classes VI—VIII (Age-Group 11-13)								
(i) Total Enrolment								
(a) Boys	Nos.	9,500	6,346	7,286	9,500	8,102	21,500	8,800
(b) Girls	Nos.	4,500	3,703	4,423	4,500	5,321	17,500	7,200
(c) Total	Nos.	14,000	10,049	11,709	14,000	13,423	39,000	16,000
(ii) Percentage to Age-Group								
(a) Boys	Nos.	74.33	52.46	58.48	74.03	63.14	147.16	66.74
(b) Girls	Nos.	35.45	30.95	35.89	35.45	41.92	130.97	59.71
(c) Total	Nos.	54.85	41.76	47.24	54.85	52.59	139.43	63.38
(iii) Enrolment of Scheduled Castes								
(a) Boys	Nos.	350	240	298	350	335	1,100	400
(b) Girls	Nos.	250	173	190	250	215	900	300
(c) Total	Nos.	600	413	488	600	550	2,000	700

	1	2	3	4	5	6	7	8	9
(v) Percentage to Age-Group									
(a) Boys	Nos.	2.73	1.90	2.39	2.73	2.61	5.12	4.55	
(b) Girls	Nos.	1.97	1.45	1.54	1.97	1.69	5.14	4.17	
(c) Total	Nos.	2.35	1.72	1.76	2.35	2.15	5.13	4.38	
(v) Enrolment of Scheduled Tribes									
(a) Boys	Nos.	2,050	1,470	1,734	2,050	1,925	5,100	2,100	
(b) Girls	Nos.	1,250	993	1,193	1,250	1,325	4,200	1,700	
(c) Total	Nos.	3,300	2,463	2,927	3,300	3,250	9,300	3,800	
(vi) Percentage to Age-Group									
(a) Boys	Nos.	15.97	12.15	13.92	15.97	15.00	23.72	23.86	
(b) Girls	Nos.	9.85	8.30	9.68	9.85	10.44	24.00	23.61	
(c) Total	Nos.	12.93	10.24	11.81	12.93	12.73	2.85	23.75	
B. SECONDARY EDUCATION									
1. Classes IX-X									
(a) Boys	Nos.	2,830	1,874	1,909	2,400	2,112	5,400	2,400	
(b) Girls	Nos.	1,320	877	888	1,100	1,053	3,600	1,600	
(c) Total	Nos.	4,150	2,751	2,797	3,500	3,165	9,000	4,000	
2. Classes XI-XII									
(General Classes) Enrolment									
(a) Boys	Nos.	1,850	543	561	700	613	1,600	600	
(b) Girls	Nos.	750	235	256	300	315	900	300	
(c) Total	Nos.	2,600	778	817	1,000	928	2,500	900	
C. Enrolment in Vocational Courses									
1. Post Elementary Stage									
(a) Total	Nos.	—	—	—	—	—	—	—	
(b) Girls	Nos.	—	—	—	—	—	—	—	
2. Post High School Stage									
(a) Total	Nos.	—	—	—	—	—	150	60	
(b) Girls	Nos.	—	—	—	—	—	50	30	
D. Enrolment in Non-Formal Edn									
(Age-Group 6—10)									
(a) Total	Nos.	9,000	—	—	9,000	5,965	6,000	1,000	
(b) Girls	Nos.	2,700	—	—	3,500	2,730	2,400	400	
Age-Group 11—13									
(a) Total	Nos.	6,000	—	—	6,000	3,345	9,000	1,500	
(b) Girls	Nos.	2,500	—	—	2,500	1,240	2,700	450	
E. Adult Education									
(a) No. of participants (15—35)	Nos.	80,000	40,631	11,895	18,000	14,140	75,000	15,000	
(b) No. of Centres opened under :									
(i) Central Programme	Nos.	800	586	592	800	592	400	400	
(ii) State Programme	Nos.	200	—	—	200	95	200	200	
(iii) Voluntary Agencies	Nos.	—	—	—	—	—	—	—	
F. Teachers									
(i) Primary classes I—V	Nos.	2,850	2,518	2,707	2,850	3,044	4,830	3,690	
(ii) Middle classes VI—VIII	Nos.	643	508	580	643	639	1,360	780	
(iii) Secondary classes IX-X	Nos.	282	210	239	282	280	345	295	
(iv) Hr. Sec. classes XI-XII	Nos.	161	120	128	161	137	240	160	
TOTAL			3,936	3,356	3,624	2,936	4,100	6,775	4,925

Art and Culture

The cultural heritage of any society and its traditional values form its foundation. In this modern era it becomes difficult to preserve traditional values and customs. Sikkim, a tiny state in the Himalayas, faces the problem as in the rest of the world. Efforts to stem the erosion of culture and traditions were made through governmental intervention during the fifth and sixth plans, particularly by fostering local dance and music.

During the 7th plan it is proposed to improve the administrative structure so that it is well equipped with necessary technical and professional personnel who can undertake and implement chosen schemes with imagination. One of the important steps to be undertaken is the establishment of a State Museum. The absence of a museum has resulted in art objects and antiques being lost to collectors and antique dealers. Another noticeable drawback in Sikkim is the inadequacy of libraries. Inculcating a reading habit, particularly among the youth could bring in wholesome attitudinal changes. With this in mind, the department proposes to set up a State library and district libraries with reading material catering to people of all walks of life and taste.

To improve the existing song & drama unit, a scheme for employing talented artistes on a contract basis, has already been initiated. Whenever talent is detected the government will encourage them to develop this talent by the grant of scholarships and specialist studies in cultural institutes.

The department of Art and Culture has an important responsibility in preserving and renovating ancient and historical monuments in the state. There are over 400 monasteries and temples in the state, out of which, over 60 are well over a century old and in need of immediate and urgent repair. So far, major repairs of 8 large monasteries and of 28 smaller monasteries and temples have been undertaken.

One of the objectives is to preserve, encourage and promote the traditions, art and culture of the state. To achieve this, it is proposed to record and preserve some of the ancient folk songs and to compile folk lore through interviews with village elders from all communities. The department will also encourage and promote the culture of the state through song, dance, and drama. During the 5th and 6th Five Year Plans a small unit of 16 members was set up. This will be expanded to a unit of 48. The scheme proposes that those talented artistes, whose working tenure will necessarily have to be of a short duration, will be compensated by enhanced salaries, in comparison with the salaries of regular government employees who have the benefit of pension.

Sikkim does not possess a proper auditorium. The only place to hold functions is in the community hall in Gangtok. This hall was constructed many years ago when the population of Gangtok was less than 12,000. Now the population has increased more than three fold and it is still growing. The hall is quite inadequate and is in a dilapidated condition. The immediate requirement, therefore, is to renovate it and to increase its capacity. In addition to this hall, it is proposed to construct a new auditorium with all modern amenities to serve the growing population of Gangtok for many years to come. Similarly, a

community hall is required for each of the district headquarter. Thus the department proposes to construct hall cum-library centre both at Gyalshing in West district and Mangan in North district. A community hall has already been constructed at Namchi in South district.

The department also proposes to encourage and assist the various associations, groups and organisations involved in music, song or drama. In order to promote such organisations and to collect various folk lore and folk tales it is proposed to hold competitions and exhibitions.

The state participates in the inter State exchange of cultural troupes, which is a centrally financed scheme for the better understanding and relations of the various States of India. In order to facilitate the transportation of the Sikkim cultural unit to various functions and also the visiting artistes from other states, it is proposed to buy a mini bus to save expenditure of hiring taxis or buses every time. A hostel in Gangtok for the accommodation of visiting artistes and performers in the field of culture has already been built. The hostel requires to be fully furnished and a cook and chowkidar remain to be appointed. It is proposed to build class IV quarters to accommodate the chowkidars and sweepres belonging to the Community Hall so that the hall and hostel will be properly cared for at all times.

There are over 400 monasteries and temples in the state. These monasteries have played an important role in the advancement of education and in the training of traditional crafts and painting such as 'Thankas'. Besides being religious centres, they have been the focus of all social and cultural activities to the tribals of the state. Some of the monasteries are over 100 years old and some even more than 200 years old. As already stated, these monasteries have no independent source of revenue and therefore, if they are to be preserved in a condition in which devotees can continue to worship, some capital expenditure is required. During the plan it is proposed to undertake the repair and renovation of at least 40 monasteries and religious institutions and minor repairs to a further 30. Apart from the monasteries and temples, there are numerous stupas, forts, ruins, mendangs and other places of religious importance such as lakes and caves. The department proposes to take up meaningful schemes to cover these places so that they may be beautified, repaired and restored for posterity. These schemes, which will be both of cultural and touristic value, will be implemented with the assistance of other departments such as the Rural Development department and the P. W. D. With regard to repair of religious institutions the work will generally be entrusted to the monastic or temple committees who will be accountable for expenditure to the department, who will additionally advise them on religious requirements.

Every state has a State Museum and State Archives. However, in Sikkim there is neither, although the proposal was initiated during the earlier plans out of which a few objects for the proposed museum and archives were purchased. One of the main reasons for the non-establishment of the museum has been the lack of a suitable site. It is proposed that a building complex for the museum, archives and library and even a new auditorium be located at one site which has been identified. The whole complex is to be laid out with parks and gardens and other recreational facilities, thus creating an entire cultural complex. The department also proposes to collect objects of interest and antiques for the museums both within Sikkim and from other parts of the country, so that they can be housed in the museum when it is ready.

The Archives section is one of the weakest as there are hardly any records prior to 1973. In this respect, the India House Library in London has intimated the government that they have some records of Sikkim from as early as the 17th century. The department proposes to approach the central government for permission to acquire copies of these valuable records. It is also proposed to obtain a conservation and technical assistant from the National Archives and National Museum on deputation.

An approximate cost of Rs 123 lakhs is estimated for the cost of building the museum, archives and library complex along with an auditorium. The approximate assessed value of the proposed site is about Rs. 25 lakhs.

There is no organised library in the whole of Sikkim except for the one run by the department in a part of the Community Hall. One of the most essential institutions in the state is a well stocked and organised State Library. The present premises are temporary and totally inadequate for their purpose. In view of this, it is proposed that a library building be constructed along with the museum in the State capital, and composite building at the district headquarters, housing Library and Community Hall, be constructed at Gyalshing in the West district and Mangan in the North district. The collection of books has been so far very meagre. In order to stock both the state library and the district libraries sufficient funds have to be provided each year for purchase of books.

Since there is only one trained librarian, the department proposes to request the National Library to send a cataloguer to assist the organisation and a librarian to organise all the district libraries. In the meantime the existing library assistants will be sent for training in turn to various organised libraries in other states and in the centre. In order to facilitate the organisation and stocking of the state capital library and district libraries a vehicle is to be purchased during the first phase of the plan.

The work of compilation and publication of the Gazetteer of Sikkim has been almost completed, under the Chief editorship of the Gazetteer Unit of the Government of India. Every chapter has been received from the contributors and has been edited and the complete gazette is now ready for scrutiny by a Committee. Funds will be required to pay the editor and contributors and cost of publication.

In the 7th plan emphasis will thus be on building up a good Song & Drama Unit to professional levels so that the song and dance culture of Sikkim can be displayed to its best advantage. To further promote all aspects of culture and to create an awareness among the people, the department will concentrate on building up the museum, library and auditorium complex in Gangtok and composite buildings in the districts. While carrying out renovation and restoration of religious institutions and other historic spots a few major points of greater interest will be identified and improvements to them which will be lasting and beautiful will be made.

Financial Dimension :

To meet the requirement of the programmes mentioned above an outlay of Rs 180 lakhs is proposed in the Seventh plan.

ART AND CULTURE

GN 2

(Rs. in lakhs)

Name of the scheme/ Projects	Sixth Five Year Plan (1980-85) Agreed outlay.	1980-83 Actual Exp.	1983-84 Actual Exp.	1984-85		Seventh Plan 1985-90		1985-86	
				Appd. Out- lay	Anti. Expen- diture	Proposed Outlay	of which Capital content	Proposed Outlay	of which Capital content
1	2	3	4	5	6	7	8	9	10
Direction and Administration	5.00	2.90	1.92	2.20	2.20	4.65	—	0.30	—
Promotion of Art and Culture	24.00	17.28	9.06	6.50	6.50	68.00	12.00	12.00	2.00
Archaeology	45.00	34.61	9.16	12.50	12.50	77.30	—	13.40	—
Archives and Museums	15.00	0.82	0.34	1.10	1.10	10.00	—	1.00	—
Public Libraries	10.00	2.78	1.98	2.10	2.10	18.50	—	3.00	—
Others (gazeteer)	1.00	0.71	0.28	0.60	0.60	0.85	—	0.30	—
	100.00	59.10	22.74	25.00	25.00	180.00	12.00	30.00	2.00

Health and Family Welfare

Introduction :

To provide proper health cover to all citizens is perhaps the most important objective of a welfare state. Investment in health is investment in man and such investment is the surest answer for the progress of mankind. Improving the health status has to be considered in its totality, as a part of the overall strategy of human resource development. The goal is to attain "health for all" by 2000 A.D. This is not unattainable, but requires dedication, foresight and planning. The inclusion of rural health cover, family welfare and the preventive aspects of health within the ambit of the 20 point programme has contributed in no small measure to the fulfilment of the basic objective of "health for all" before 2000 A.D. The bridge between the haves and have-nots of health will have to be narrowed before the close of the 7th plan.

The population of Sikkim by the end of the 7th plan will be anything around 4 lakhs and if the preventive and curative aspects of health care have to percolate to all the 4 lakhs of the people of the state then apart from infrastructure in the form of buildings there is urgent need to equip the State with more qualified staff in the form of doctors, nurses and other para medical staff.

Review :

Progress in health care is not an overnight phenomenon. Even in the early stages of Sikkim's history provision of basic health cover has been an integral part of the administrative infrastructure. However the growth was slow and when the Sixth 5 year plan commenced, there was still a yawning gap between the desirable level of health institutions and the actual availability. The apex consisted of a referral hospital at Gangtok supported by 4 district hospitals and primary health and primary health sub-centres in the rural areas. The referral hospital however did not have adequate bed space and lacked in basic specialist services. The situation in the district hospitals was no better with over crowding in none too clean surroundings. During the 6th plan an endeavour was made to improve these facilities and accordingly the bed strength was increased in the S. T. N. M. Hospital to 300. Additional building space was provided within the existing premises and a new postpartum unit was constructed in its vicinity. The referral hospital was provided with more specialists particularly in the field of medicine and some improvement was made in the laboratories, the X-Ray unit and in the OPD sections. The hospital however has still major deficiencies, more so in the field of specialities in vital areas like paediatrics, surgery/ cardiology etc.

In the district hospitals the total bed strength increased to 225 but it has been noticed that there is constant clamour for more accommodation in the district hospitals. Only basic treatment is provided today in the district hospitals so much so that a large number of cases requiring slightly more than ordinary attention have to be transferred either to the referral hospital or to institutions outside the state. The district hospitals are yet to be provided with basic equipments although the availability of medicine.

through a centralised purchase and handling system has improved.

There was impressive growth in the field of primary health centres and by the end of the 6th plan as many as 16 are likely to be functional. The drawback has been that these centres are mostly functioning in rented premises except in places where buildings for the purpose have been constructed. Progress of construction in other areas has been slow partly on account of lack of adequate land and more so on account of lack of finances. Quarters for doctors and para medical staff are also largely incomplete in the areas where the P. H. centres have been established. One of the innovations introduced during the 6th plan was the provision of diet facilities to inpatients of primary health centres as a result of which efflux of patients from the primary health centres to the districts hospital has progressively decreased. Primary health centres were also provided with needed medicine well in advance and ambulances have been provided to almost all of them not only for the purpose of evacuating patients but also to deal with emergent cases without delay.

The progress in the setting up of primary health sub centres has also been impressive. At the end of the 6th plan, 82 sub-centres are also faced with the same problem of not having the proper building infrastructure as a result of which some of them are functioning in rented premises without even the basic facilities. A programme of progressively making good this gap has already been initiated but because of the need to provide in addition to the main building, quarters for the para - medical staff the progress has been understandably poor. The main emphasis will therefore have to be to speed up the construction programme for primary health sub-centres.

Besides the setting up of health institutions another important area of work undertaken during the 6th plan consisted of controlling the spread of communicable diseases. Tuberculosis has already been identified along with goitre and worm infestation as the most debilitating disease of the state. The control of tuberculosis under the National programme of T. B. control has been going on but the need to identify positive cases at the earlier stages persists. A lot has been done through Health Education campaign and through media material to educate the people about the efficacy of curing tuberculosis through domiciliary treatment. Several cases today are being cured accordingly. Much more has to be done to detect cases and to prevent recurrence. As far as other diseases are concerned, the department has been making an effort to control them through the introduction of curative methods which have met with a fair amount of success. The health education programme along with the training of multipurpose workers which were really got established only during the 6th plan have had a good impact on the curative aspects. A word or two have to be mentioned about the indigenous system of medicine of which the Tibetan system of treatment called the Amji system has proved to be particularly popular because of the implicit belief of the people in this system. The Ayurvedic and Homeopathic systems were also given a boost during the plan.

Seventh Plan Objectives

The main objectives of the 7th Plan are :

- (a) to consolidate and expand the facilities already available in the existing health institutions;

(b) to give a boost to the preventive aspect by integrating the system of health education with campaigns and training; and

(c) to provide to the families at their door steps basic health facilities.

Strategy

The objectives of the 7th plan are proposed to be fulfilled by strengthening and streamlining the health institutions. At the central referral hospital at Gangtok the existing bed strength is proposed to be increased from 300 to 500 and in the district hospitals from 225 to 375. At least 4 of the primary health centres, one in each district, are proposed to be converted into 30 bedded institutions where basic specialities will be provided as an intermediate level between the primary health centres and the district hospitals. Six more primary health centres and 50 more primary health sub-centres will be set up.

Increasing the number of institutions and the bed strength will be of no consequence unless medical and para medical staff are also matched with such increases. The specialist fields to be filled up will therefore be taken into account and in case doctors are not available locally efforts will be made to bring them from outside either on contract or on deputation. Same is the case with the para medical staff which include lab-attendants, pharmacists and other technicians like X-ray and so on. In the field of nursing also a lot of ground has to be made as the existing ratio of nurses to beds is still below the accepted level.

In the S. T. N. M. Hospital the existing blood bank will be modernised. Apart from equipping the hospital with basic machines like ECG, gastroscope and so on more sophisticated equipments in keeping with modern times will be purchased and installed. Rudiments of cancer therapy by installing a cobalt unit will also be commenced. Possibility of equipping the hospital with a scanner machine will also be explored. A modern operation theatre and an intensive care unit will also be built as additions to the main hospital. The main intention and objective is to provide within Sikkim all the needed facilities so that the present system of having to evacuate patients to outside institutions when their conditions become critical will be gradually avoided.

In the district and primary health centres also the main endeavour would be to improve and streamline the existing infrastructure so that as many cases as possible can be treated at these levels. A large part of the Seventh plan outlay will be earmarked for completing the building construction work because there is still a lot of ground to be covered to make good the gap in the availability of quarters for doctors and para medical staff. In the rural areas where there are primary health and sub centres serving personnel will also be given incentives. Today basic lab facilities for routine tests like blood, urine and motion are not up to the desired level and hence one of the main areas of strengthening will be to provide these facilities particularly in the district headquarters. A beginning has already been made in Namchi where one of the Sr. Surgical Consultants has been posted primarily for the purpose of organising surgery and to develop operation theatre facilities at the district level. Other specialists like in Orthopaedics, Paediatric and Gynaecology will also be provided at the district level. An endeavour would be made to improve the medical stores in the district hospitals because to run every now and then to Gangtok for the purpose of collecting stores is neither feasible nor practical. Ambulances,

basic equipment and medicines which have to be provided in all centres will be given priority attention so that wherever these are absent they will be made good.

Prevention of communicable diseases like tuberculosis will also be given the needed attention it deserves by expanding the scope of the programmes currently on hand. Periodical checking of various groups vulnerable to the diseases will form a basic part of the health strategy to ensure that the population is not exposed. School health will be given a further fillip as also health education and training to multi-purpose workers. In service training of doctors to acquire a greater degree of speciality will be given emphasis because the state today has a handicap in that they have not got sufficient number of trained doctors. The administrative infrastructure in the Directorate of Health Services will also be strengthened particularly on the accounts and statistical side.

A final word may be mentioned about family welfare. Controlling population is also an important adjunct of all health welfare schemes because this is National policy and is the only way to ensure that the fruits of economic development percolate to the teeming millions. The state has already got a fairly well established family welfare infrastructure but during the 7th plan better equipment like Laproscope will be utilised to see that the target and number of sterilisation cases is attained.

Financial Dimension :

An outlay of Rs 1200 lakhs is provided in the Seventh plan to cater to the needs of the schemes outlined above.

MEDICAL AND HEALTH

GN 2

(Rs. in lakhs)

Name of the scheme/ Projects	Sixth Five Year Plan (1980-85) Agreed outlay.	1980-83 Actual Exp.	1983-84 Actual Exp.	1984-85		Seventh Plan 1985-90		1985-86	
				Appd. Out- lay	Anti. Expen- diture	Proposed Outlay	of which Capital content	Proposed Outlay	of which Capital content
1	2	3	4	5	6	7	8	9	10
Direction & Administration	34.00	59.21	42.74	33.00	33.00	155.00	—	34.00	—
Hospitals	180.00	51.65	19.74	17.00	17.00	345.00	220.00	37.00	20.00
Primary Health Centres	99.50	60.33	29.52	31.00	31.00	135.00	90.00	23.00	20.00
Primary Health Sub-Centres	39.35	41.74	12.56	28.00	28.00	215.00	175.00	40.00	30.00
Indegenous System of medicines	2.00	1.33	1.00	2.50	2.50	16.00	—	3.00	—
Treatment out side Sikkim	3.00	3.16	2.76	2.50	2.50	17.00	—	1.50	—
Training	6.00	2.25	0.94	2.50	2.50	8.00	—	3.00	—
Prevention & Control of Communi- cable Diseases	56.89	22.64	8.15	17.50	17.50	209.00	—	37.00	—
Health Education & Publicity	12.26	5.76	2.05	4.00	4.00	30.00	—	5.00	—
Provention of food Adulteration	2.00	0.72	0.25	2.00	2.00	15.00	—	1.50	—
Control of goitre	—	—	—	—	—	40.00	—	8.00	—
Community Health Centres	—	—	—	—	—	15.00	5.00	2.00	—
	435.00	248.79	119.71	140.00	140.00	1200.00	490.00	195.00	70.00

Water Supply and Sewerage

Introduction :

Despite impressive progress made in welfare activities the State has lagged behind in the avowed objective of making available safe drinking water to the millions of people scattered in the numerous villages and hamlets of the state. A crash programme of providing such a basic facility has therefore become imperative, the roots of which have already taken firm grounds during the 6th plan. The emphasis in the Seventh plan will accordingly be to proceed with this objective with greater vigour so that every pocket of human habitation is provided with water supply. While provision of water supply is one step, there is also the need to make it safe, without impurities and not carrying germs of debilitating diseases. Any water supply programme has therefore necessarily to take into account the need to provide treatment facilities, if not at the source, atleast at the point of distribution.

Apart from rural water supply schemes covering the villages, the growth of urban centres where congested localities and sprouting of slums has made living uncomfortable, has brought into focus the need to provide copious water supply not only for ordinary domestic requirements but also for maintaining an environment which is hygienic and free from pollution. The growth of industries also is very much dependent on the availability of water sources so much so that it will not be far from the truth if one were to state that the provision of water supply for domestic and other purposes perhaps occupies the most important place in our scheme of social planning.

Review :

The rural water supply sector falls within the minimum needs programme. In Sikkim, the provision of water supply to rural areas is more difficult than in the plains because the state is entirely mountainous and the villages do not have cluster habitation as a result of which even if water supply is made available to a central point the villagers have to walk a fair amount of distance to collect water. This requires a constant extension programme since the growth of hamlets within the village complex cannot be prevented. While planning for rural water supply during the Seventh plan, one has also to take into account the growth in population and the concomitant growth in the number of households.

For purposes of planning, the revenue blocks have been taken as units and accordingly 405 blocks are to be covered with water supply. In the 1981 census however the number of revenue blocks indicated is 447 and it has now been established that out of these, 42 are either uninhabited, being covered with snow or being under forest with no fixed population. Therefore, for the Seventh plan the number of villages will be taken as 405 but in each village there being a number of hamlets with scattered houses the planning for augmenting water supply will take note of the need to cover a predetermined number of hamlets.

The problems that have been encountered in supplying water to the villages have been numerous. Some of them are enumerated for illustration. The terrain consists of sharp rising hills making it difficult to align a durable water supply system. The source of water is invariably a perennial spring but with deforestation taking place virtually unchecked, many of the so called perennial springs have dried as a

result of which there have been instances of taps going dry causing inconvenience to the villagers. Apart from these difficulties, very often the source of water is located in distant places several kilometers away from the village. This has necessitated the drawing of water along long distances causing maintenance problems. Negligence and sometimes vandalism have also caused problems for maintenance.

Despite these drawbacks the achievement of the department of Rural Development, which is charged with the responsibility of supplying water to rural areas, has been commendable as is evident from the details given below :

Year	Villages fully covered	Villages partially covered	Total
Upto 1980	2	105	107
1980-81	—	21	21
1981-82	—	30	30
1982-83	22	29	51
1983-84	47	29	76
1984-85 (anticipated)	49	71	120
Total	120	285	405

By the end of the 6th plan, 120 villages out of the 405 will be fully covered in the sense that even the hamlets within them will be provided with water supply. It is expected that a population of 2,23,478 will be fully covered by the end of the sixth plan. Number of villages partly covered will be 285. In theory therefore 405 villages will have been covered with some sort of water supply but not fully.

Seventh Plan :

The strategy in the Seventh plan will accordingly be to cover all the hamlets so that the entire population will be benefitted. It was during the Sixth plan that the international drinking water supply decade programme was set into motion. On an average, about 60 hamlets will be taken up each year for providing water supply and it is expected that by the end of the plan all the villages will be fully covered.

As far as possible the water supply schemes will be implemented by using GI pipes because they are more durable. Polythene pipes will be used when the alignment has to pass through slip areas where the use of GI pipes will only aggravate the vulnerability of the slips. At least 30% of the completed schemes will be provided with treatment facilities so that the water that is supplied is free of bacterial impurities.

Considerable importance has already been attached to control environmental pollution. While providing safe drinking water is a must for this purpose, there is also need to introduce better sanitation systems in villages, hamlets and in individual houses in a progressive manner. Experience has shown that provision of a sanitation system in a public place or in a growth centre has not had the desired effect because of improper maintenance and lack of supervisory responsibility. Special schemes with a built in subsidy for providing sanitation facilities will accordingly be taken up during the Seventh plan.

Since the need to maintain existing schemes is of paramount importance because without maintenance existing assets will not be put to optimal use, it is proposed to set aside a part of the plan resources for maintenance purposes. This will consist of repair, renovation and large scale repairs but not ordinary maintenance.

Sewerage and Sanitation :

1. The 31st United General Assembly has earmarked 1981-90 as the International Drinking Water Supply and Sanitation Decade. The resolution call for 100% water supply coverage of urban and rural sectors, 80% sewerage and sanitation coverage of urban towns and 25% sanitation coverage of rural areas. India is one of the signatories to this resolution.

2. For the sake of implementation of the schemes, the urban and the semi urban sectors under the department has been divided into three categories.

1. Gangtok
2. 7 urban towns.
3. 55 R. M. C. S.

Gangtok is the most developed town requiring extensive water supply and sanitation work. Following this, comes 7 towns. The RMCs constitute 55 upcoming towns.

The water supply and sanitation decade master plan of the state has already been incorporated in the National document. The urban population of the state, as per the master plan, for the years, 1981, 1984 and 1991 is as follows.

Population of Urban centres

Year	Gangtok	Seven other Towns	55 RMCs	Total
1981	40,000	13,300	53,670	1,06,970
1984	50,500	22,531	55,260	1,28,291
1991	75,000	44,000	59,000	1,78,000

3. During the 5th five year plan, the population coverage under the water supply sector was 22.4% (3/1981 population), whereas coverage under the sanitation and sewerage sector was negligible. During the 6th Five Year plan period, further cumulative coverage of 46.35% and 21% were achieved (3/1984 population). The Table below shows status as on March, 1984 and the targets ending the decade (1991), which would also be the terminal year of the 7th plan period.

Status 3/1984 and targets for 1990-Urban Water Supply

Particulars	Gangtok	7 other towns	55 RMCs.	Total
Targetted coverage of population (100%) for 1990	75,000	44,000	59,000	1,78,000
Population coverage during 1984	33,000	12,288	14,181	59,469
Balance population to be covered ending 1990	42,000	31,712	44,819	1,18,531

4. Under sanitation and sewerage sector, a complete sewerage system is under construction for Gangtok, In the other centres, sewerage disposal is chiefly being accomplished through individual septic tanks. The decade target envisages 80% coverage of the urban population. The table below reflects present and future targets.

Status 3/1984 and targets for 1990-Urban sanitation

Particulars	Gangtok	7 other Towns	55 RMCs	Total
Projected population 1990	75,000	44,000	59,000	1,78,000
80% of the population targetted to be covered.	60,000	35,200	47,000	1,42,400
Covered as of 1984	20,200	7,193	NIL	27,393
Balance to be covered ending 1990	39,800	28,007	47,200	1,15,007

5. A brief description of achievements during the Five Year plan period for Gangtok, 7 Urban Towns and RMCs follows.

Gangtok Water Supply :

1. Gangtok is not only the capital of the state but is also the main tourist centre. During '71-'81 population increase in this town was from mere 13,000 to above 40,000 excluding floating population. The town is also experiencing steady growth of commercial and industrial activities. Water supply coverage in the town includes the town proper as well as fringe areas, such as, Deorali, Tadong, Syari, Sichey-Busty, Chanmari, Tathangchen, etc. The present population of the town is estimated to be about 50,000. During the 6th plan period augmentation works were carried out by way of constructing two nos. of 6 "dia raw water mains from the source to the treatment plant, thereby increasing the (theoretical) carrying capacity of the pipes to approximately 3.0 Nos. Similarly, the department has also undertaken the construction of an additional water filtration plant of capacity 2.0 MGD to make the total capacity of the plant to 3.0 MGD. Presently construction of one million gallon (covered) reservoir is under way.

Gangtok Sewerage and Sanitation works :

2. The Department undertook construction of a sewerage scheme for the town during the 6th plan period. Presently laying of trunk lines (24" and 30") of a length of 21,102 rft, Mains (9" to 21") of 8 613 rft and sub mains (6") of 8,500 rft, have been completed. In 1983-84 construction of a sewage treatment plant started which is within the scheduled time for completion. The 1.26 MGD plant will be catering to about 20,000 people during Phase-I of the scheme. The status of Gangtok sewerage scheme as of today stand as under.

Sl. No,	Scheme	Status
1.	Construction of Mains and Submains	98% Completed
2.	Construction of Trunk—I	Completed
3.	Construction of Trunk—II	Completed
4.	Construction of Treatment plant	75% Completed

3. Water Supply works in 7 other Towns and 55 Rural Marketing Centres.

Varying degrees of water systems are available in all the 7 towns. During the 6th plan period augmentation works were taken up along with construction of treatment plants in Jorethang and Singtam. Namchi water supply and distribution net work were renovated and improved during the period. In this area, debt sources being not available, the department undertook survey work in order to locate new sources. The source for the town is now available at a distance of 42 Km. Preparation for necessary water Supply Scheme for the town is now afoot. At the closure of 5th plan, the department had provided water supply coverage to 27 RMCs. Further coverage to 8 RMCs has been achieved up to the end of the 4th year of 6th plan period.

Total population covered as of 3/1984 for 7 other towns & RMCs is 26,469. The balance population to be covered by 1990 would be of the magnitude of 75,000.

4. Sewerage & Sanitation works in Towns & RMCs

In the sewerage and sanitation sector, due to financial constraints, no major work was carried out, excepting construction of a few drainage systems.

7th Plan Objectives :

1. The National Decade Programme coincides with the 6th and 7th plan period. The state master plan for the decade programme envisages coverage of 1,78,000 population under water supply sector and 1,42,400 population under sewerage and sanitation sector at a cost of Rs. 18.26 crores. Ending 6th plan period, fund available would be however only Rs. 3.50 crores whereas physical targets achieved would be around

38. 40% (1991 population) under water supply and 19.23% (80% of 1991 population) under sewerage and sanitation sectors.

2. The objectives, therefore, during the 7th plan period would be to achieve the National targets of making available to the masses, the basic needs of safe drinking water supply and ample sanitary facilities.

1. Gangtok Water Supply

In view of the decade plan, Gangtok Water Supply will be taken up in 3 phases.

(a) Rehabilitation of Distribution System in Gangtok

Present distribution system of the town is in an extremely dilapidated condition. There have been huge losses of water through the old and broken down pipes which is also causing loss of revenue and high cost of maintenance expenditure. Although the department has been, from time to time, monitoring the water quality, still it appears that the water in the distribution system is often contaminated, causing public health problems.

It is therefore proposed to rehabilitate the distribution system by replacing the old system with G. I. pipes. The computer aided master plan in this respect is now ready.

(b) Head Work Strengthening.

Head work located about 10 miles away at an altitude of 8200ft is vulnerable to slips and land movements. It is proposed to improve and strengthen the headwork to ensure continuous water supply to the town.

(c) Improvement of track between Rateychu headworks and Selep Treatment Plant :

A well maintained water pipe would facilitate maintenance of main water lines during emergencies as well as to stabilize the constant slips and landslides along the present water pipe line route between headwork and the treatment plant.

The entire route is infested with landslides. During May/June '84 there were over 60 spots where pipes were badly damaged due to minor and major slips. The work will entail construction of T. bear bridges to cross the pipes over jhoras, protection works to hill sides, widening of tracks construction of cause ways etc. It will be very essential to strengthen the pipe route to ensure un-interrupted flow of water to the Gangtok population.

(d) Construction of a Storage Godown.

Huge quantity of pipes and other expensive equipments today are lying in the open due to lack of storage facilities. It will be therefore essential to construct a central godown.

(e) Construction of Trunk Water Line From Rateychu to Selep :

The existing lines include 3 Nos. of 6" dia G. I. pipes and 1 No. of 8" dia G. I. pipe. The 6" pipe

was laid about 20 years ago and the 8" pipes were laid about 5 to 10 years ago. The theoretical carrying capacity of these pipes is approximately 3.0 M. G. D. However, due to age and constant breakages in the pipe lines, the actual available supply is only just over 2.0 Mgd. The water supply demand for the town ending 1990 is expected to be 8.0 Mgd. (design period 2001 AD, population 100,000.) It is therefore necessary to construct additional lines to augment the water supply for Gangtok. The increase in demand is chiefly due to growing commercial and industrial activities in the town.

2. Gangtok Sewerage and Sanitation :

The scheme is proposed to be taken up in three phases ;

Phase—I sewerage scheme is under completion. It consists of a full fledged treatment plant, trunk lines, mains and sub-mains. In order to fully utilise the system it will be necessary to :

- (i) construct additional submains in market areas and its vicinity,
- (ii) expand mains to certain congested areas,
- (iii) construct trunk—III from below West Point School and Syal Gaon upto Ardegolai to cater to congested areas,
- (iv) construct an additional sewage treatment plant, and
- (v) create infrastructure to man and supervise the system.

For the 2nd phase, preliminary work of surveying, designing etc. will be taken up immediately. It is expected that within the year end the 2nd phase will be ready for implementation.

3. Water Supply in 7 other Towns and 55 RMCs :

The supply of drinking water to urban towns is of vital importance because these are growth centres where the demand for water supply increases along with progress. Apart from the urban towns there are rural marketing centres which are really smaller towns having growth potential. The plan of action is to cover all the 7 towns and 55 rural marketing centres with drinking water in a phased manner. The total population that will be covered by 1990 will be 76,500.

Among the urban towns, Namchi which is the headquarter of the South district, has the biggest problem because it always faces an acute shortage during the dry months and there are no perennial water sources near-by. In-order to cater to the requirements of Namchi a scheme of tapping water from a source which is located 42 Kms away is currently being investigated by the department. From this source, 8 million gallons daily can be provided for the population of Namchi and surrounding areas. Despite the distance factor it would appear that it is the only feasible proposition for supplying Namchi with water because other alternatives like pumping from the Rangit river and under ground water or even storage are not feasible and would be in the long run costlier and more difficult to maintain.

Besides supply of water, the International decade envisages that towns and urban centres should also be

provided with basic sanitation facilities. At present none of the towns has got a modern sewerage system. In all these centres there are only septic tanks and other primitive disposal systems which have understandably caused insanitary and pollution problems. A beginning is proposed to be made during the 7th plan to construct sewerage systems with small treatment units in atleast 2 of the major towns and smaller systems in some of the marketing centers.

The drainage system has also got to be improved so that the effluents are discharged properly. In each of the towns there will be specific programmes drawn up in consultation with the L. S. G. & H. department for solid waste disposal and drainage.

Financial Dimension :

An outlay of Rs. 2100 lakhs has been earmarked in the Seventh plan to cater to the needs of the programmes outlined above.

WATER SUPPLY AND SEWERAGE

GN 2

(Rs. in lakhs)

Name of the Scheme/ Project	Sixth Five Year Plan (1980-85) Agreed outlay	1980-83	1983-84		1984-85		Seventh Plan (1985-90)	1985-86	
		Actual expendi- ture	Actual expendi- ture	Appd. outlay	Ant. Expen- diture	Proposep outlay	of which Capital contant	proposed outlay	of which Capital contant
1	2	3	4	5	6	7	8	9	10
Rural water Supply	600.00	304.28	148.60	140.00	140.00	1050.00	—	200.00	—
Gangtok water Supply	160.00	98.61	48.00	31.00	31.00	250.00	250.00	50.00	—
Water Supply in other bazars	50.00	52.67	16.48	20.00	20.00	160.00	—	28.00	—
Gangtok Sewerage	100.00	43.50	28.70	25.00	25.00	200.00	200.00	40.00	40.00
Drainage and Sanitation in other bazars	10.00	0.93	0.53	2.00	2.00	35.00	35.00	7.00	7.00
Direction and Adminis- tration	30.00	9.00	8.71	12.00	12.00	5.00	—	1.00	—
Namchi Water Supply	—	—	—	—	—	400.00	400.00	100.00	100.00
	950.00	508.99	251.02	230.00	230.00	2100.00	885.00	426.00	147.00

WATER SUPPLY AND SEWERAGE

GN 3

Item	Code No.	Unit	Sixth Five Year Plan (1980-85) Target	1980-83 Achieve- ment	1983-84 Achieve- ment	1984-85 Target	Anti- cipated Ach.	Seventh Plan (1985-90) Target proposed	1985-86 Target proposed
1		2	3	4	5	6	7	8	9
Sewerage & Water Supply :									
A. Urban Water Supply									
Corporation towns :									
(i) Augmentation of Water supply		mld	5.44	5.44	—	9.08	9.08	21.00	2.00
						(cumulative)	(cumulative)		
(ii) Population covered		lakhs	0.30	0.20	—	0.43	0.43	0.32	0.07
						(cumulative)	(cumulative)		
Other towns :									
(a) Original schemes									
(i) Towns covered		Nos.	—	—	—	—	—	—	—
(ii) Population covered		lakhs	—	—	—	—	—	—	—
(b) Augmentation schemes :									
(i) Town covered		Nos.	15	10	—	28	28	64	7
						(cumulative)	(cumulative)		
(ii) Population covered		lakhs	0.37	.114	—	.302	.302	1.03	.12
						(cumulative)	(cumulative)		
B. Rural Water Supply :									
(i) Minimum needs programme (State sector)									
a) Piped water supply :									
Villages covered		nos.	148	59	17	20	20	194	54
Population covered		nos. (lakhs)	0.82	0.16	0.06	0.09	0.09	0.76	0.21
b) Rural Sanitation									
Population Covered		nos.	—	—	—	250	250	64,075	12,815
(ii) Central sector (ARP)									
a) Piped water supply :									
Villages covered		nos.	22	43	59	70	70	194	54
Population covered		nos. (lakhs)	0.87	0.13	0.22	0.32	0.32	0.76	0.21

Housing

In a Welfare State one of the primary responsibilities of government is to provide housing satisfaction to the various segments of society. Apart from constructing quarters for government servants, who form only a small percentage of the total population, the real responsibility lies in the field of social housing through which economically weaker sections, low income groups and other needy persons are given a roof over their heads.

In Sikkim, housing activities have been concentrated so far in the construction of Government quarters because there apparently was not much of a demand from other quarters due to historical reasons. The State Bank of Sikkim used to loan out money for constructing quarters which supplement the efforts of the P. W. D. as a result of which quite a number of houses have come up particularly in the capital town of Gangtok. Over and above these finance department issues loans to Government servants again for purposes of housing.

The housing plan is accordingly proposed to be considered from these three components namely Government housing, loans for construction of houses and social housing.

(a) Government housing:

At the beginning of the 6th plan, P. W. D. had constructed 1,116 Government quarters belonging to various classes. In terms of housing satisfaction, taking into account the number of Government employees, the level attained was about 15 percent. A target of constructing 272 quarters of various categories of Government servants by the end of the 6th plan was envisaged. By the end of the 6th plan the actual achievement will be 270 quarters the break-up of which would be as follows:

Towns	Class				Total
	I	II	III	IV	
Gangtok	9	24	68	41	142
Districts	1	—	22	18	41
Other places	—	4	30	28	62
Police	1	8	4	12	25
Total	11	36	124	99	270

During the 7th plan, the scheme of constructing more quarters will be continued as by the end of the plan there is likely to be more than 15,000 employees on the rolls of Government, out of which only about 2,000 have been provided with accommodation so far. There is acute shortage of housing in towns like Joretong, Geyzing, Namchi and Mangan. In addition to these places, with the creation of the sub-divisions houses will have to be constructed in those areas so that the staff posted therein will not have to go about without proper accommodation.

The type of quarters that are currently being constructed can be classified as under:—

Class I B	—	1,600 sq. ft.
Class I A	—	1,350 sq. ft.
Class II	—	1,000 sq. ft.
Class III	—	636 sq. ft.
Class IV	—	342 sq. ft.

The cost of construction is normally high, because of high materials cost and the non availability of land which requires government to acquire land for the purpose of constructing quarters. In Gangtok new housing colonies can only come up in the periphery which would form part of the satellite town being contemplated by the municipality. The number of quarters that will have to be additionally constructed is proposal to be atleast 400 more including 26 quarters for the upper subordinate of police and special quarters for ministers and the speaker of the Legislative Assembly,

(b) Loans for housing purposes:

A large number of applicants numbering over 500 belonging to the various grades in Government have applied for loans for constructing houses for residential purpose. The maximum loan payable is only Rs. 40,000 and the minimum Rs. 10,000. These rates were fixed long ago and if one takes into account the escalation in construction cost it can easily be seen that the amount is inadequate, During the 7th plan, the amount per individual is proposed to be doubled and accordingly the provision for loans to government servants is also proposed to be increased so that the levels of satisfaction can be retained. The existing methods of recovery will be streamlined so that there will be no slip up in the matter of recovery. Atleast 300 government employees are proposed to be covered during the seventh plan period through housing loans

(c) Social Housing:-

In the field of social housing, the main work that has been undertaken so far is the distribution of GCI sheets to poor families who live under thatched roofs. These families have to replace their roofs once in 2 or 3 years which can be avoided if GCI sheets are granted. This scheme is proposed to be implemented through the decentralised system by making the district authorities responsible for identification of deserving families and distribution of the GCI sheets.

Besides distribution of GCI sheets, which is no doubt a good programme for the state, an endeavour would be made to acquire small pieces of land in selected regions for the purpose of allotting house sites to landless and poor families who today live as tenants or as labourers in temporary structures. There has been no survey to find out how many such people exist in the state today. The scheme will therefore be preceded by a survey and as in the case of distribution of GCI sheets the scheme will be implemented at a decentralised level. Wherever possible, existing sites where share croppers and tenants live will be acquired and handed over to them with a proper mutation of land records.

The creation of a Housing Board in the state during the 6th plan started the process of looking into the housing problems in a more meaningful way. The Board, which has been modelled on the lines of similar boards in other states, has however implemented only one major scheme so far which is the construction of multi-storeyed flats for the low and middle income groups at Jorethang. Three more schemes on a similar basis have, however, been started in Gangtok. During the 7th Plan, the Board will be given financial assistance to improve its equity base and to enable it to borrow money for housing schemes through the HUDCO or the LIC. The Board will acquire land in suitable places and formulate and implement schemes themselves. For this purpose the engineering section of the Board will have to be strengthened so that it need not depend upon the state P.W.D. for constructing its houses. Wherever possible, only hire purchase schemes will be implemented wherein shopping complexes along with housing structures will be put up.

Housing being an integral part of Prime Ministers's 20 point programme, the need for providing adequate resources to fulfil a basic demand will be considered, and provided for.

Financial Dimension :

To take care the requirement of the schemes mentioned above, an outlay of Rs. 600 lakhs has been provided in the seventh plan period.

HOUSING

GN 2

(Rs. in lakhs)

Name of the scheme/ Projects	Sixth Five Year Plan (1980-85) Agreed outlay.	1980-83 Actual Exp.	1983-84 Actual Exp.	1984-85 Appd. Anti. Out- Expen- lay diture		Seventh Plan 1985-90 Proposed of which Outlay Capital content		1985-86 Proposed Outlay	of which Capital content
1	2	3	4	5	6	7	8	9	10
Housing for Govt.									
Servants	165.00	80.76	34.39	45.00	45.00	340.00	340.00	70.00	70.00
Social Housing	60.00	—	4.00	4.00	4.00	50.00	—	10.00	—
State Housing Board	20.00	5.00	1.00	5.00	5.00	135.00	135.00	15.00	15.00
Loans to Government									
Servants	55.00	30.00	10.00	10.00	10.00	75.00	75.00	15.00	15.00
Direction & Administration	2.00	—	—	—	—	—	—	—	—
TOTAL	302.00	115.76	49.39	64.00	64.00	600.00	550.00	110.00	100.00

HOUSING

GN 3

Item	Unit	Sixth Five Year Plan (1980-85) Target	1980-83 Achieve- ment	1983-84 Achieve- ment	1984-85 Tar- get	Antici- pated Achieve- ment	Seventh Plan (1985-90) Target proposed	1985-86 Target proposed
1	2	3	4	5	6	7	8	9
Construction of Government								
Quarters —	No.	272	163	39	54	56	510	100

Urban Development

Sikkim is a small state and does not have large towns. The capital town of Gangtok is the largest and is a fast growing town requiring civic amenities on a large scale. Besides Gangtok, there are several bazar towns like Singtam, Rangpo, Jorethang, Namchi, Geyzing, Rhenock and Mangan which are also expanding rapidly. In Gangtok, a Municipal Corporation was formed in 1975 to be in charge of all urban development activities. However, in other towns there are no local bodies as such, but there are bazar committees who are responsible for the general up-keep of the towns. There has not been any systematic town planning as a result of which in the recent past a tendency for haphazard growth has resulted, particularly in the capital town of Gangtok. There is therefore urgent need to control such ill planned growth by introducing atleast the rudiments of Town Planning.

As the nerve centre of all important activities, Gangtok town has been growing at a very fast rate resulting in a constant and pressing need for expanding civic amenities. The main items of work undertaken by the G. M. C. in the past were.

- (i) Construction and maintenance of public latrines in the Gangtok bazar and other areas;
- (ii) Expansion of marketing facilities in the main bazar;
- (iii) Construction of small shopping centres;
- (iv) Development of childrens' parks;
- (v) Environmental improvement including better sanitation and garbage disposal;
- (vi) Construction of car parks and a marketing complex;
- (vii) Training of jhoras;
- (viii) Construction, widening and improvement of roads within the town.

Among these schemes, the construction of a super market complex is one of the more prestigious items which is likely to be completed in the early part of the 7th plan. The completion of this complex will considerably ease the congestion at Lal Bazar. It will also provide a parking place for vehicles. The marketing complex will also bring in some revenue to the GMC because the shops can be rented out.

The objective in the 7th plan will be to progressively improve the facilities more particularly the roads which are in a deplorable state at present. The main schemes that will be taken up are as under.

A few more public latrines will be constructed particularly in places like the Paljor Stadium and S.N.T. bus-stand where people have to congregate. A children's park is proposed at Namnam. Regarding the removal of garbage and refuse from the town, other than providing drums and containers at suitable places a dumping site outside the town will be properly developed by constructing an approach road so

that garbage can be dumped and incinerated ultimately for conversion into compost. Additional trucks will be provided for the purpose of carrying garbage.

In order to promote cleanliness and to improve the environment adequate drainage facilities are proposed more particularly in areas where there is congestion. It is not only the human congestion through habitation that has caused a deterioration in the environment, the increasing number of vehicles has also caused problems in parking and consequential atmospheric congestion particularly in the bazar area. A multi storeyed parking complex in front of the West Point School and another at Lal market area are proposed to be implemented for which institutional help will be obtained. In order to avoid congestion and crowding more shopping areas will also be constructed so that the citizens can get their day to day requirements at nearby points. These include meat stalls.

Another important civic amenity which has so far been ignored is the need to provide for a town hall where public functions and cultural programmes can be arranged. The existing community hall can accommodate only 270 persons and is not under the control of the G. M. C. The feasibility of constructing a large hall-cum theatre will accordingly be explored. Many visitors to Gangtok spend a lot of time wandering about in the bazar. Sometimes they feel tired but there are no resting places. Hence a few benches for relaxation will be built so that foot sore people can take rest.

To make the town cleaner and safer stray dogs will be caught and destroyed. So far this function is not being discharge by the G. M. C.

It is the duty of the municipality to provide for the weaker sections. This is proposed to be accomplished by constructing houses for safai karmacharis who belong to the weaker section. So far, only 16 karmacharis have been provided with residential accommodation. During the 7th plan, atleast 50 more will be provided with low cost houses.

It is in the matter of road maintenance and extension of the road net work within the town that more stress will be laid in the plan. The existing road surface will be strengthened by vigorously following the specifications of the P. W. D. manual and the strength of the surface increased to take the load of heavy vehicular traffic. For the safety of pedestrians particularly school going children, it is proposed to provide fly overs near the hospital and in front of the West Point School. The G. M. C. will also procure road machinery so that the maintenance aspect can be taken care of. Dumping of building material on road sides will be discouraged.

The previous few years have witnessed large scale construction of buildings both for residential and non-residential purposes. Apart from the congestion, the unplanned construction has resulted in soil erosion and land slides which require the jhoras within the town to be properly trained. A phased programme of training the jhoras in collaboration with the Land Use Directorate will accordingly be under taken.

The GMC will endeavour to become a viable institution for which purpose its revenue earning capacity will be enhanced by the levy of property taxes and by rationalising the tax and fee structure. There is need to expand the administrative unit for such purposes particularly by induction of assessors. This will

be done in a phased manner. The Town Planning aspect will be given due consideration so that atleast in future the tendency for haphazard growth can be effectively curbed. The Government will continue to give grants for these various purposes depending upon GMC's own financial income.

Regarding other towns and bazars the main activity of the L. S. G. H. department will be to help the local people to carry out their trade and business in a convenient manner by the construction of hat sheds, many of which have already been constructed in different towns and bazars. During the plan adequate number of hat sheds in all the towns will be constructed. In addition to hat sheds the construction of public latrines and meat stalls is also a part of the work that will be taken up by the L. S. G. H. Department. Like in the case of G. M. C., disposal of garbage, general improvement of the environment, maintenance of roads and the jhoras will also be a responsibility of the L. S. G. H. Department. In some of the towns, the existing bazar area is a little too small and therefore one of the major schemes that will be taken up during the 7th plan would be the acquisition of land to extend the bazar areas. The Town Planning Cell will be strengthened in the department so that the expansion of the bazar areas is done according to a well laid out scheme of action. Construction of link roads to the bazars and widening of existing roads will also be undertaken so that trading and business activities could be streamlined. For the disposal of urban waste, collection of garbage and disposal underground is proposed. Drainage systems are proposed atleast in important towns. In view of the congestion of certain towns, particularly Gangtok, satellite towns will be developed in the peripheral areas. Construction of sweeper's quarters in atleast some of the towns will also be undertaken.

The maintenance of bazars being an important social responsibility the bazar committees will also be given a greater voice in bazar development schemes.

Financial Dimension :

An outlay of Rs. 210 lakhs has been provided in the Seventh plan for the schemes proposed.

Information and Publicity

Introduction :

The Information and Publicity Department of the Government is the mouth piece of the government. The various activities of government can be disseminated to the people at large who are active partners in the socio-economic developmental process, only through an effective system of mass media capable of conveying needed information to the people inhabiting even the remotest corners of the state. The task indeed is stupendous made more difficult because of lack of the needed infrastructure, to which is added the low level of literacy. A combination of written and audio-visual material constitutes the best answer of an effective information vehicle. The advent of television, although now only in Gangtok, could be the harbinger of an information cum educational break-through. Receipt of world wide information could set off trends of progress at all levels of society. A larger coverage through T. V. is a distinct possibility during the 7th plan. In a democratic structure, however, the involvement of the people in the developmental process is crucial and therefore the information strategy should not only be to convey information but also to get a feedback from the villagers particularly on the impact of schemes initiated usually at centralised levels. This two way flow of information can only be guaranteed by the establishment of contact centres which would act accordingly.

Review :

The Information Department of the State of Sikkim which started its activities just by the publication of the Sikkim Herald, a news paper intended to merely convey what the Government was doing, has through the years progressed to a much more meaningful apparatus functioning as the mouth piece of Government. Recognising the need to convey written information in languages other than English, the Sikkim Herald progressively began to publish the bulletin in Nepali, Bhutia and Lepcha languages. The frequency of publication, which was barely once a week, was increased to 4 times a week. The scope of publication also was enlarged so as to include besides news material from the State events of National and International importance. Mere publication of the Sikkim Herald not being sufficient to serve the ultimate objective of disseminating information one of the improvements made during the Sixth plan was the setting up of District Information Centres through which the news material was not only conveyed to more distant places but more so there was a system of getting a flow back of information. A system of runners was also developed so that the material published from Gangtok could be transported without delay to the District information centres and thence to other important places of public congregation.

Besides the publication of Sikkim Herald, the other important activity of the department during the

6th plan was to improve the visual presentation of important events in the state. The photographic unit developed considerably and through the publication of photographs of main events that took place in the state in important centres like government offices the public awareness has become more sharp. Movie films were also produced in large numbers and for all important occasions like agricultural field days, calf rallies, Panchayat sammelans and so on, the information department acting in tandem with the field publicity unit of the Government of India screened films showing various aspects of Sikkimese life and its economic development

Another important aspect of development in the sixth plan related to the training of personnel particularly in the Indian Institute of Mass Communication where Sikkimese candidates were exposed to a more rigorous method of handling media material. The department being solely responsible for liaison work with the press authorities, the control of advertisements and publication of government hand outs was also handled by the department. As a result of the various activities undertaken during the sixth plan, it can well be said that the department has come of age. Nevertheless, much has to be done to further improve its role in the developmental process.

Objective :

The main objectives of the Seventh Plan would accordingly be to streamline the work in regard to the coverage of Government news and to improve the functioning of District Information Centres.

Strategy :

The strategy to achieve this purpose in brief would be to equip the department with a stronger manpower infrastructure and make the staff working in the department more mobile. Active liaison with other publicity organisations like All India Radio and Doordarshan will be developed. Since the National Programme envisages the setting up of low power T. V. transmission stations to cover atleast 70% of the population, efforts would be made to extend the coverage of T. V. in the state for which liaison with Government of India would be developed. While the publication through Sikkim Herald in the various languages will continue to receive a place of prominence, efforts would be made to improve its get up and extent of coverage. The Department also proposes to bring out illustrated posters in simple language to depict developmental schemes of the state. In order to improve news coverage installation of telx facility in Gangtok will also be a matter of importance. As far as visual presentation is concerned, the film units of the District Information Centres will be strengthened not only by appointing the needed personnel but also by providing better equipment including portable generators which is necessary to cover the remote areas. An endeavour would be made to produce a documentary film on Sikkim covering various aspects of the social and economic programmes in the state. Photo services will be carried on with vigour and atleast some of the films taken would be in colour for which the department will be provided with needed equipments to develop and print coloured photographs. Adequate attention will also be provided for research and training in mass communication since it is only through such methods that there can be overall improvement in services. The infrastructure in the form of manpower, vehicles and building facilities will also be expanded. Maintaining a close contact with the press

being an important function a special 'press' cell will be developed. This will be responsible for supplying handouts on important decisions taken at various levels in Government, News of importance will be transmitted through the cell not only for PTI, Hindusthan Samacher etc, but also for the All India Radio authorities. It will also be the agency for day to day contact with pressmen. The possibility of constituting a small press council for Sikkim will also be explored.

Financial Dimension :

To meet the expenditure in respect of the programmes described above an outlay of Rs. 100 lakhs has been proposed in the Seventh Plan.

INFORMATION & PUBLIC RELATIONS

GN 2

(Rs. in lakhs)

Name of the scheme/ Projects	Sixth Five Year Plan (1980-85) Agreed outlay.	1980-83 Actual Exp.	1983-84 Actual Exp.	1984-85		Seventh Plan 1985-90		1985-86	
				Appd. Out- lay	Anti. Expen- diture	Proposed Outlay	of which Capital content	Proposed Outlay	of which Capital content
1	2	3	4	5	6	7	8	9	10
Direction & Adminis- tration	3.00	0.83	0.50	0.35	0.35	2.50	—	0.40	—
Advertising & Visual Publicity	8.00	8.60	2.50	2.20	2.20	13.00	—	2.50	—
Information Centres	5.00	6.63	3.00	3.30	3.30	20.00	—	3.70	—
Publication	11.00	8.80	4.90	7.75	7.75	50.00	—	8.75	—
Research & Training	0.50	0.20	0.10	0.10	0.10	0.50	—	0.10	—
Films	4.50	2.21	0.50	0.80	0.80	4.50	—	0.90	—
Photo Services	8.00	3.83	1.50	1.50	1.50	9.50	—	1.65	—
	40.00	31.10	13.00	16.00	16.00	100.00	—	18.00	—

Labour Welfare and Craftsmen Training

There is only one I. T. I. in the state which was established as early as 1976 at Rangpo. The Institute was started with the objective of providing skills and employment opportunities to young local candidates who have no means of pursuing higher education. Initially, the Institute had 7 disciplines namely motor mechanism, draughtsmen (civil), fitter, wireman, welder, plumbing, cutting and tailoring. The last mentioned was only for women and was running in Gangtok under the same management. The duration of the course ranged from 1 to 3 years.

The Institute, which started from scratch, had to be provided with all facilities and therefore during the past years it has been gradually equipped with the needed infrastructure facilities including a modern workshop building, hostel, administrative block and staff quarters. It has the capacity to train 108 candidates at a time. During the 6th plan period the Institution trained 330 persons in various trades among whom 180 have already been placed for employment in various spheres including government departments. The trainees were given Rs. 100/- every month as stipend. Usually, they have to undergo further in service training in selected undertakings before becoming fully functional.

The object of the institute is to provide technical manpower to match the growth of various industrial organisations and government departments. Keeping this aspect in view the objective in the 7th plan would be to consolidate the training aspect by improving the standards and by providing for more practical training. For this purpose the Institute will be equipped with more machinery. It is also proposed to introduce two new trades viz electronics and stenography since it has been found that there is a general shortage of local candidates in these fields. The introduction of electronics as a discipline is a much needed innovation since the industrial policy of the state accords priority for the development of electronics industries. The advent of television and its possible spread in various parts of the state will require a large number of television repair mechanics and hence a part of the electronics discipline will take into account television repairs. It is also proposed to change the trade of wireman into electrician since the demand for electrician is much more than wireman.

The Seventh plan outlay will also take into account the need to complete the civil construction work and to provide recreation facilities for the inmates. The present rate of stipend of Rs. 100/- per month will be progressively increased, since the cost of living being what it is, there is need to step up the stipendiary amount. More qualified instructors will also be appointed in the Institute.

Financial Dimension :

An outlay of Rs. 60 lakhs is provided in the Seventh plan for labour welfare and craftsman training.

LAAOUR AND LABOUR WELFARE

GN 2

(Rs. in lakhs)

Name of the Scheme/ Projects	Sixth Five year Plan (1980-85) Agreed outlay.	1980-83 Actual expendi- ture.	1983-84 Actual expendi- ture.	1984-85		Seventh Plan (1985-90)		1985-86	
				Appd. Out lay	Anti. Expen- diture.	Proposed Outlay	of which Capital content	proposed Outlay.	of which Capital content.
1	2	3	4	5	6	7	8	9	10
Labour Department	—	—	0.10	0.50	0.50	—	—	—	—
Industrial Training Institute	40	28.95	9.43	8.50	8.50	60.00	20.00	12.00	8.00.
	40	28.95	9.53	9.00	9.00	60.00	20.00	12.00	8.00

LABOURS AND LABOUR WELFARE

GN 3

Item	Code No.	Unit	Sixth Five Year Plan (1980-85) Target	1980-83 Achieve- ment	1983-84 Achieve- ment	1984-85 Target	1984-85 Anti- cipated Ach.	Seventh Plan (1985-90) Target proposed	1985-86 Target proposed
			3	4	5	6	7	8	9
Craftsmen Training									
a) No. of Industrial Training Institutes (ITI)		Nos; (cum).	1	1	1	1	1	1	1
b) Intake Capacity		Nos. (cum).	103	75	90	108	108	140	140
c) No. of persons under going training		Nos.	367	99	80	108	108	460	76
d) Outturn		No.	367	135	80	108	108	460	76

Welfare of Scheduled Castes/Tribes

The scheduled castes and scheduled tribes constitute a segment of population which is still socially and economically backward. Special schemes to raise their standard of living have been implemented now for several years. Despite this, the condition of these people continues to remain backward as a result of which special consideration has to be shown to them for some more years.

Apart from the economic level, the major problem that has been confronting the scheduled castes and scheduled tribes in the low level of literacy and other educational attainments as a result of which they continue to occupy a back seat in society. Opportunities for education should therefore be expanded so that there would be a greater intermingling of members of this section of the population with others. In a few places the social customs are also inhibitive factors contributing to isolation. This will also have to be removed.

As far as Sikkim is concerned, the problems of scheduled castes and scheduled tribes are not so acute as in other states. The scheduled tribes in particular are fairly well to do and have taken a leading part in economic and social programmes of the state. It is only in a few pockets that they continue to live in a state of poverty. The scheduled castes live scattered all over the state and therefore there is no segregation and cluster habitation. As a matter of fact they are accepted as any other member of the society except in a few isolated cases where traces of ostracism have come to be reported. By and large they do not stick to their own professional background and hence it can be said that as far as these communities are concerned, they have been emancipated to a much higher degree than elsewhere in the country.

Out of the total population of 3,16,385 in the state according to the 1981 census figure, the scheduled castes number only 18,281 constituting 5.78 percent and the scheduled tribes 73,623, constituting 23.27 percent. It is found that the scheduled castes population is meagre in the North district but more or less evenly spaced out in the other districts, the number being largest in East. The scheduled tribes are largely concentrated in the North district and in thirty five other revenue blocks in the other districts which have been identified as tribal pockets qualifying for being put under the intensive tribal development programme.

The main occupation of the people belonging to this section are cultivation including animal husbandry, agricultural labour, household industries and a host of other professional occupations the details of which are given as under.

	S/Cs	S/Ts
Cultivators	4251	21777
Agriculture Labour	389	579
Household Industry	429	283
Others	2676	10069

Review :

During the Sixth plan period, the schemes that were implemented consisted of providing educational opportunities in the form of pre-matric scholarships and economic betterment grants through which the

beneficiaries were provided with the opportunity of acquiring productive tools and equipments, for milch cows and bullocks and so on. Free distribution of G.C.I. sheets to replace thatched roofs also was one of the more popular schemes. The main drawback in the scheme was that the facilities granted were not on the basis of properly conceived notions which took into consideration the real requirements of the people. As a result the impact of such schemes has not been up to desired levels. Through the scheduled castes component plan and the tribal sub-plan attempts were made to improve the flow of benefits which succeeded atleast partially in boosting up the economic level of families of these communities. A common facility centre which was started at Singtam and the birth of a few voluntary organisations also contributed to an increased level of welfare among them. However, there was no system of ensuring that by virtue of such assistance, the families were enabled to cross the poverty line.

Seventh Plan :

The main objectives in the Seventh plan will be to;

1. Identify the poorest of the members of the scheduled castes and scheduled tribes and to formulate a package of schemes which would confer enduring economic benefits to the families; and
2. to provide opportunities to pursue education both at the school and higher levels

Strategy :

In order to fulfil the first objective, the strategy proposed to be adopted is to develop a few modules within which a package of schemes would be integrated. The idea is that the selected family should have the benefit of a number of schemes like for example, land development followed by the distribution of improved seeds and manures at subsidised cost, arrangement of marketing, provision of milch cattle, pigs, goats or poultry and perhaps providing training facilities for household industries like knitting or tailoring or even carpentry. The idea is that each member of the family should have a gainful employment opportunity with the ultimate object of enhancing the household income. For this purpose, the approach would be to prepare such schemes through a group of officers belonging to the various disciplines and to implement them in such a way that the government subsidies are matched with loans from nationalised banks. The selection process of the beneficiaries will be undertaken by the Scheduled Caste and Scheduled Tribe Welfare department but the implementation of the schemes will be essentially the task of the concerned departments.

However, close monitoring and checking the schemes for remedial action will be the responsibility of the Scheduled Caste and Scheduled Tribe welfare department. The approach will be basically one of interaction with the family members so that their actual needs and aspirations are properly formulated. As far as the department is concerned, it will continue to give grants for economic betterment, but only in those area where the other concerned departments are not able to supply them. It is estimated that by the end of the Seventh plan 100 percent coverage of scheduled caste families below the poverty line could be achieved through this process and for Scheduled tribes, atleast 80 percent coverage would be possible. The effort of the state government through sectoral programmes and through the department's programmes is expected to be supplemented through Special Central assistance as was being received during the Sixth plan.

Regarding the second objective of improving the educational standards, the department will ensure that all children belonging to scheduled castes and scheduled tribes are given incentives for attending school.

A closer liaison will be developed with the education department and wherever steep drop out rates are noticed, corrective action will be initiated. Apart from the grant of pre-matric scholarships, other incentives like free distribution of text books and exercise books, provision of midday meals and multiple entry points which are being adopted by the education department would constitute incentives. The department will also undertake the organisation of special coaching classes particularly at higher levels where some amount of guidance is required. The possibility of starting ashram or monastic type of educational institutions primarily intended to eradicate illiteracy will also be explored.

Through the centrally sponsored scheme, hostels for girls will be constructed in more places and post-matric scholarships awarded to all students belonging to these communities, who would go for higher education. It is expected that at least 5000 students will be covered through the schemes of scholarships and other benefits of which about 1,800 students would constitute spill over cases of the sixth plan. In order to implement the welfare schemes for scheduled caste and scheduled tribes properly, there is need to improve the organisational structure of the department which today has a very meagre number of officers and field level personnel. More welfare inspectors will have to be appointed in a phased manner. The involvement of voluntary organisations will also generally gear up the activities of the department because, through them, not only can the requirements of the scheduled castes and scheduled tribes families be gauged but also they can help in involving a feed back system which would help monitoring. During the Seventh plan, the department will therefore provide needed financial assistance to set up and organise voluntary organisations.

Special housing schemes like providing construction assistance in the form of G.C.I. sheets and even other materials will be implemented vigorously.

Instead of spreading resources thinly the strategy would be to identify backward pockets and in these pockets an endeavour would be made to cover hundred percent of the identified poor families.

Such an approach would ensure that within the identified area no poor family would be left out for a future date. The approach will be followed up by a meaningful system of monitoring. The schemes for the scheduled caste and tribes are invariably within the domain of departments like Agriculture, Animal Husbandry, Rural Development, Industries, etc. Since each developmental module will be clear and specific the schemes will be well known. A system of field visits by the subordinate staff of the concerned departments will be devised and during each visit the inspecting person, who will maintain a diary, will record the basic details like whether the family is really making use of the benefit given and whether there are any problems and so on. Based on such reports corrective action, if needed, will be initiated by the scheduled caste and scheduled tribe welfare department. The whole idea is to ensure that the responsibility of the department does not cease with the sanction and grant of assistance.

Financial Dimension :

An outlay of Rs. 150 lakhs has been provided in the Seventh Plan in order to meet the requirements of the schemes mentioned above.

WELFARE OF SCHEDULED CASTES/TRIBES

GN 2

(Rs. in lakhs)

Name of the scheme/ Projects	Sixth Five Year	1980-83	1983-84	1984-85		Seventh Plan		1985-86	
	Plan (1980-85) Agreed outlay.	Actual Exp.	Actual Exp.	Appd. Out- lay	Anti. Expen- diture	Proposed Outlay	of which Capital content	Proposed Outlay	of which Capital content
1	2	3	4	5	6	7	8	9	10
SCHEDULED CASTES									
Direction and Administration	8.00	8.85	2.81	2.00	2.00	4.50	-	0.50	-
Economic grants	18.00	4.22	2.00	1.50	1.50	12.00	-	2.00	-
Educational stipends	16.00	9.91	5.00	5.50	5.50	31.00	-	6.00	-
Vocational facilities	1.00	0.33	0.50	0.50	0.50	2.50	-	0.50	-
Sub. Total (a)	35.00	32.31	10.03	9.50	9.50	50.00	-	9.00	-
SCHEDULED TRIBES									
Direction and Administration	12.60	5.42	2.85	2.00	2.00	10.00	-	1.00	-
Economic Betterment	20.00	9.47	2.62	2.00	2.00	12.50	-	2.50	-
Educational stipend	23.00	12.39	4.98	7.50	7.50	50.00	-	9.00	-
Welfare Board	-	-	-	1.00	1.00	15.00	-	2.00	-
Research & Training	-	-	-	1.00	1.00	5.00	-	1.00	-
Construction of Girls Hostel	-	-	-	5.00	5.00	7.50	7.50	2.50	2.50
Sub. Total (b)	55.00	27.28	10.45	18.50	18.50	100.00	7.50	18.00	2.50
Total :-	90.00	59.59	20.48	28.00	28.00	150.00	7.50	27.00	2.50

WELFARE OF SCHEDULED CASTES/TRIBES

GN 3

Item	Code No.	Unit	Sixth Five Year Plan (1980-85) Target	1980-83 Achievement	1983-84 Achievement	1984-85 Target	1984-85 Anticipated Ach.	Seventh Plan (1985-90) Target proposed	1985-86 Target proposed
1		2	3	4	5	6	7	8	9
1. SCHEDULED CASTES		No. of							
i) Premetric Scholarships	*	Students	2000	1800	673	825	650	1410	700
ii) Economic betterment		families	500	305	140	140	140	900	150
2. SCHEDULED TRIBES		No. of							
i) Premetric Scholarship	*	Students	3530	2585	904	950	950	5882	1050
ii) Economic betterment		families	657	507	150	150	200	1000	200
iii) Voluntary Organisations assisted		No.	9	7	2	2	2	20	4
iv) Hostel buildings Constructed		No.	—	—	—	2	—	2	—

* Figures reflect renewed plus fresh scholarship cases

Social Welfare

Introduction :

The constitution of India expects all state governments to provide welfare facilities for the under privileged and economically weaker sections of the society so that they will not be deprived of a meaningful life in a welfare society. In any section of society one can find such under privileged people who have to be specially looked after. Particular attention has to be given to women and children who are destitutes or who have been ostracised from the main stream of society on account of various social factors. In addition to women and children, there are a large number of handicapped people who have to be rehabilitated in society. There are also juvenile delinquents who are criminally inclined to whom reformatory services have to be offered.

Review :

The social welfare departments are responsible for covering this wide range of activities in our country. They are assisted by voluntary organisations and Welfare Boards. In Sikkim, concrete measures towards providing social security and in taking up welfare measures were initiated only from 1976. A social welfare department, helped by an advisory board, started working in the state after 1976 in right earnest so as to tackle the problems of children and women. Later on the scope of activities widened to cover other under privileged sections of humanity.

During the Sixth plan period several important steps were taken towards promoting social welfare in the state. The most popular scheme consisted of setting up creches for children whose mothers were engaged in road side work or in work which involved their absence for long periods of time from their houses. These creches, which were set up in different parts of the state, were supported with a recurring financial assistance to look after the overhead expenses like the salaries of ayahs, purchase of food material and so on. Basic health cover was also provided for the inmates. The voluntary organisations have responded favourably to the government help rendered so much so that there are persistent demands for opening more number of creches.

Besides the creches, the other most important scheme for children consisted of sustaining children in destitute homes in places like Chakung, Kaluk and Gyalzing, out of which the one in Kaluk is run departmentally. These institutions were given financial help for providing basic facilities for accommodating the children and in providing the cost of day to day food items. There is scope for increasing such homes in other parts of the state. Paucity of resources precluded the state from going ahead with the opening of new houses,

Other schemes for children consisted of granting financial aid for providing uniforms for school going children and in equipping some of the schools with safe drinking water.

Besides children, women's welfare also occupied a place of prominence in the Sixth plan. A working women's hostel was set up in Gangtok with all the needed facilities. which were improved from time to time so that working women who were occupying the premises were able to live a better life.

Recreational material like musical instruments and a television set have also been provided in the working women's hostel. At present there are 90 women who are inmates of the hostel. A beginning has been made for setting up another such hostel at Namchi.

In order to enable women who are in distress, to become self employed the department through the voluntary organisations was also able to organise several training cum production schemes particularly in items like knitting, tailoring and other areas like embroidery and so on which are usually handled by women. As a result of such work, it was possible to provide avenues of self employment to several adult women who would have otherwise found themselves in a difficult position.

Among other social security schemes initiated and handled by the department during the Sixth plan, the grant of old age pension with effect from 1st of April, 1981 was greatly appreciated by all welfare bodies. Old age pension is today being granted to 361 persons although the intention was to cover up to 411. Some of the identified persons have passed away and therefore the leeway will be made up.

Besides old age pension, it is in the area of providing relief to the handicapped personnel that a lot of new ground was covered during the Sixth plan. At Rothak a sheltered work-shop for the blind was established and training in cane and bamboo works were imparted. Prosthetic aids and appliances were supplied to identified physically handicapped personnel which include crutch axilla and elbows, wheel chairs, hearing aids etc. The handicapped were also helped financially by providing a subsistence allowance up to Rs. 60/- per month for such of those who were completely helpless. A scheme of providing integrated education to children who are physically handicapped at the P. N. Girls School, Gangtok was successfully initiated. The intention behind integrated education is to ensure that the physically handicapped move with the other students and do not feel as if they have to be given special treatment. Special stipends were also granted to the blind, the deaf and the dumb for attending schools elsewhere in the country where there are facilities for educating them.

The growth of voluntary organisations on which depends the ultimate success of social welfare programmes was also given a fillip during the Sixth plan as a result of which a number of voluntary organisations stand registered today. These institutions were not only given supporting financial aid but also guidance and counsel from the department.

Objectives and Strategy in the 7th Plan.

The programmes in the Seventh plan can only be a continuation of what has been successfully initiated in the Sixth plan. The scope will no doubt be broadened and areas requiring special thrust will be specially identified for the purpose. Children will continue to occupy the attention that they deserve so that orphans and economically underprivileged are given a fair deal. One of the innovations that would be considered is to set up recreational or play centres atleast in the district headquarters for children of all categories. By equipping the centres with play equipments and various learning-by-doing materials even the deprived youth who have the talent will have opportunities to develop interest and latent talent. The day care centres, one of which was started in the Sixth plan through the Sikkim Women's council will also be given a push by providing better equipment and in increasing other facilities. The concept of day care centres is comparatively new to the state but the experiment in Gangtok has not proved to be a waste. There is hope that more working women will rely on day care centres for looking after their children. Hygiene and congenial atmosphere being essential ingredients for healthy growth, they will be particularly insisted upon in all day care centres. More number of crèches will be set up in view of their popularity. The need to assist voluntary organisations to run children's homes cannot be ignored. The

institutions, some of which are semi religious, do a much better job if they are given better accommodation and infrastructure facilities which would help them in organising their activities properly. Accordingly, capital assistance will be provided to some of the institutions during the plan period. It has also been felt that the children who are within the homes should be given fair opportunities of securing jobs after they leave schools. Introduction of vocational training programmes within the institution with a bias towards professional activities in and around the premises will therefore be given due importance. Free supply of school uniforms, compulsory introduction of school health programmes and providing safe drinking water in schools will be the other areas of stress as far as child development is concerned.

Juvenile delinquency has so far not been tackled in the state and today child offenders are mixed up with under trial prisoners or even hardened criminals and housed in the same jail. Such a system has to be overcome sooner or later. Efforts will therefore be made to extend the Children's Act to the state and at the same time all juvenile delinquents will be looked after through reformatory institutions which will be set up progressively during the plan.

In the area of women's welfare the hostel for working women having been already established at Gangtok and another one at Namchi being in the offing. Two more in the other district headquarters will also be considered. Women who are on the look out for jobs will be helped and those who are more educated but not having sufficient facilities for gaining skills in such disciplines like shorthand, secretarial courses, library science, watch assembly etc will be helped to contact institutions providing such training and in very needy cases stipendiary assistance will also be given to them. For those who are not educated and not seeking careers, training cum production schemes through the help of TRYSEM would be organised in rural areas as is being done at present but with a wider coverage. Marketing the products will be specially looked into through the Industries department. Socio economic items like providing poultry, goats and even buffaloes for rural women along with household economic activities including pickle making and bottling will be undertaken. Special preference in this matter would be given to destitute women who have nowhere to go.

The suppression of immoral traffic for women and children act has been extended to the state of Sikkim but it has not been enforced. With the enforcement of the act, it would also be necessary to prevent offences against women more so against destitutes and therefore during the Seventh plan period, the social welfare department will be adequately strengthened for enforcing the provisions of the act.

It needs no mention that such activities, be they for women or children, can be successfully implemented and tackled only if there is a strong supporting voluntary organisation infrastructure. While every effort would be made to create more such institutions the existing ones will be provided with all help so that they do not languish on account of paucity of resources. The State Social Welfare Advisory Board will be called upon to take a leading role in imparting leadership to the voluntary organisations.

The other schemes like helping the physically handicapped, and payment of old age pension will also be continued with a wider coverage. As far as the handicapped persons are concerned the possibility of starting a blind school where braille education will be imparted will also be given serious consideration. Orthopaedically handicapped persons whose physical deficiency can be overcome through modern methods of using artificial limbs and aids will be helped to proceed to institutions which provide such aid. This will be done after a comprehensive enquiry of handicapped persons is undertaken.

Financial Dimension

An outlay of Rs. 100 lakhs is provided in the Seventh plan to cater to the needs of the programmes detailed above.

SOCIAL WELFARE

GN 2

(Rs. in lakhs)

Name of the Scheme/ Projects	Sixth Five year Plan (1980-85) Agreed outlay.	1980-83 Actual expendi- ture.	1983-84 Actual expendi- ture.	1984-85		Seventh Plan (1985-90)		1985-86	
				Appd. Out lay	Anti. Expen- diture.	Proposed Outlay	of which Capital content	proposed Outlay.	of which Capital content.
1	2	3	4	5	6	7	8	9	10
Direction and Administration	3.00	2.42	1.15	0.90	0.90	10.00	—	1.50	—
Womens welfare	8.00	2.15	1.38	2.40	2.40	8.00	5.00	2.50	1.50
Child Welfare	7.00	5.01	2.20	2.38	2.38	30.00	6.00	6.00	3.00
Welfare of Physically handicapped	5.00	2.08	1.10	1.27	1.27	12.00	—	3.00	—
Old age Pension	3.00	1.96	2.00	2.70	2.27	25.00	—	1.80	—
Aid to Voluntary Organisation	2.00	1.71	0.75	0.90	0.90	10.00	—	1.70	—
Social Welfare Research	1.00	—	0.05	0.05	0.05	—	—	—	—
Other schemes	3.50	1.00	0.35	0.40	0.40	2.50	—	0.50	—
Total	33.00	16.33	8.98	11.00	11.00	100.00	11.00	17.00	5.20

Item	Unit	Sixth Five Year Plan (1980-85) Target	1980-83 Achieve- ment	1983-84 Achieve- ment	1984-85 Tar- get	Antici- pated Achieve- ment	Seventh Plan (1985-90) Target proposed	1985-86 Target proposed
1	2	3	4	5	6	7	8	9
1. Child Welfare								
a. Welfare of poor & Destitute								
i) Units	Nos.	5	3	3	4	4	6	5
ii) Beneficiaries	"	500	175	175	200	200	300	250
b. Day Care Centre								
i) Unit	"	4	2	2	2	2	6	3
ii) Beneficiaries	"	100	50	50	50	50	150	75
c. Balwadis								
i) Units	"	4	1	1	2	2	4	3
ii) Beneficiaries	"	100	25	25	50	50	100	75
2. Womens Welfare								
a. Creches for WW. children								
i) Units	"	40	20	25	30	30	50	40
ii) Beneficiaries	"	1000	50	625	750	750	1250	1000
b. Hostel for W. Women								
i) Units	"	4	1	1	2	2	6	4
ii) Beneficiaries	"	225	100	100	150	150	400	250
c. Vocational Training								
i) Units	"	4	3	3	4	4	10	5
ii) Beneficiaries	"	50	30	30	40	40	100	50
d. Welfare of Destitute Women								
i) Units	"	2	—	—	—	—	2	1
ii) Beneficiaries	"	50	—	—	—	—	50	25
e. Formation of Mahila Mondals (Training-cum- Production Centre)								
j) Units	"	2	2	2	—	—	5	3
ij) Beneficiaries	"	20	20	20	—	—	100	30
3. Welfare for Handicapped								
a. Scholarship beneficiaries	"	50	20	20	20	15	100	40
b. Supply of prosthetic aids. (Crutches, wheel chair, white cane)	Nos. of beneficiaries	200	50	100	200	186	500	50
c. Sheltered workshop								
i) Units	Nos.	1	1	1	1	1	2	1
ii) Beneficiaries	"	15	15	15	20	16	50	30
d. Programme for Hearing Handicapped	Nos. Beneficiaries	20	3	3	10	5	40	8
e. Programme for Orthopaedically handicapped (beneficiaries)	"	10	2	10	15	15	50	20

1	2	3	4	5	6	7	8	9
f. Programme for mentally retarded (integrated education)								
i) Units	Nos.	2	1	1	2	2	4	3
ii) Beneficiaries	"	100	15	15	65	40	200	80
g. Programme for the blind								
i) Units	"	—	—	—	—	—	1	1
ii) Beneficiaries	"	—	—	—	—	—	50	1
4. Social Defence								
a. Establishment of children court	"	—	—	—	—	—	1	1
b. Establishment of observation home	"	—	—	—	—	—	1	1
5. Financial Assistance :								
Fin. Asstt. to Poor & needy women-beneficiaries		Besides Old Age Pension 35 Women were given financial assistance ranging from Rs. 100 to Rs. 1000/-						
6. Old Age Pension Beneficiaries	Nos.	500	345	365	375	475	3,875	575
7. Aid to the Voluntary org.								
i) Unit	"	35	28	28	33	34	40	35
ii) Beneficiaries	"	660	620	620	640	650	800	660

Nutrition

Introduction

Malnutrition particularly among children below the age of 6 is one of the biggest curses in our country and hence its eradication assumes a place of great importance in our National plan. According to UNESCO malnutrition makes children an economic weight upon society impairing their learning ability and school performance. It is therefore imperative that some positive steps are taken to wipe out malnutrition. The UNESCO report proceeds with the statement that supplementary feeding programmes in pre and primary schools constitutes one of the most promising and effective measures to overcome malnutrition among children.

Review

The nutrition programme in Sikkim has its origin only recently when the mid-day-meal programme in schools and the special nutrition programme in ICDS centres were initiated in 1976-77. The programmes got off to a sluggish start but soon it became popular and today we have about 276 ICDS centres and 570 primary schools where the feeding programme is taking place.

The difficult terrain in the state coupled with the lack of trained personnel requires the state to go in for easily transportable forms of food material having long shelf life to constitute the feeding materials. Accordingly, the programme started off by supplying biscuits which had soyabean flour as an ingredient. This had the advantage of easy transportation and long shelf life. In addition to biscuits locally available nutritious material including chana and buns were also distributed wherever practical. The programme, though partly successful, has certain drawbacks because there was no real quality control in the production of biscuits and there was no system of checking the protein and calory intake through biscuits. Similar failings could not be overcome in respect of the other materials which found their way to the feeding centres. Taking cognizance of these drawbacks the state government negotiated a deal with the UNICEF for the purpose of setting up an extrusion plant capable of producing extruded food in a dry form which could be varied in taste and content. The UNICEF supplied the main extrusion cooker, which is an imported item and generally helped in identifying the process of manufacture of various types of dried extruded food. The plant, which is located at Tadong, and which is managed by the Sikkim Flour Mills — a public sector undertaking in the state, has gone into production from April 1984 and will thus be a great help in solving the problem of providing a properly balanced diet from the nutritional angle. The main food material that will be supplied in the feeding centres during the Seventh plan will be from the extrusion plant.

By the end of the Sixth Five Year plan the number of beneficiaries who will be covered under the supplementary nutrition programme will be 35,000 and under the mid-day meal programme will be approximately 5,500.

Taking note of the status of children, pregnant and nursing mothers in the state, the focus of the Seventh plan will be to enlarge upon the areas already covered including consolidation of the existing programme. The nutrition programme will not be considered in isolation but in conjunction with family welfare and educational programmes. Limiting the size of the family will directly contribute towards a

better nutritional status in the family and will also provide for greater educational opportunities. While on the one hand the level of nutrition will have to be improved, the special problems prevalent in the state in the form of endemic goitre and worm infestation will also be considered from the point of view of nutrition. The former is proposed to be tackled by making the use of iodized salt compulsory and the latter by improving water facilities, particularly in primary schools, and in taking up more preventive methods like periodical deworming of children.

Keeping in mind the various issues involved and the current status of nutrition in the state, the main objectives of the Seventh plan will be as follows ;

Objectives :

- (a) Consolidation of the existing programmes :
- (b) Expanding the coverage to include 100% identified mal nourished children and
- (c) To improve and diversify the quality of food material and thereby provide opportunities for ancillary employment.

Consolidation :

As far as consolidation is concerned the emphasis will be on making a real impact in the centres which are already under coverage and wherein a certain level of feeding has already been attained. Today, on account of paucity of resources, the feeding programme for children below 6 and mothers is restricted to under 300 days while for the school going children up to the age of 11 the coverage is only for about 180 days in a year. The resource allocation is also made on the presumption that there would be absenteeism. When there is no absenteeism the available material is divided among those present as a result of which the intake gets minimised. The main strategy in the plan would therefore be to comprehensively cover the identified beneficiaries. Simultaneously, efforts to improve upon the maintenance of basic statistics will be made. Statistics will include data on the nutrition status of each of the beneficiary at periodical intervals. The parameters will consist of items like weight and height in order to understand whether or not there is improvement in the conditions of the children. Whenever cases of abnormality are detected or when there are chronic cases of malnutrition, the concerned beneficiaries will be referred to nutrition clinics in the hospitals and the primary health Centres in order to provide therapeutic meals to such persons. The health input in the form of preventive medicines will be given due stress. In all these centres periodical deworming will be done and community type of water filters, which have been successfully experimented in the state of Jammu & Kashmir, will be installed so that the children and other beneficiaries take only filtered water. Since the need to control goitre has been recognised at the National level an iodination plant will be set up preferably at Jorethang so that the salt coming into the state will be iodized.

Iodination plant :

The need for a plant within the state needs no emphasis because the effect of the iodine content wears with time and hence if the iodination is conducted in the state itself longer retention will be possible.

Expansion :

While consolidating the existing programme one cannot ignore the need to expand coverage because those children who have unfortunately not been covered under the programme should not be left out. A 2% growth in

coverage per annum is envisaged and this is proposed to be accomplished by increasing the number of children in the existing centres and in enhancing the number of centres. By the end of the Seventh plan the level of children covered under the mid-day-meal programme is expected to be 60,000 and under the special nutrition programme 38,000. While including new beneficiaries full details about their health status will be undertaken.

Food Material :

The third and final aspect of the nutrition strategy is to continuously improve the quality of food. The Extrusion Plant will be given all the needed facilities for experimenting on the type of food material that it would produce but atleast in a few selected centres a beginning would be made in providing for a few days in the week hot meals somewhat on the lines of the nutritious noon meal programme of Tamil Nadu. The provision of such hot meals would be integrated with the IDP which is a special programme taken up in one of the districts in the state. Under the IDP, there are community centres. In these places crash programmes of cultivating vegetables and poultry will be undertaken. Making use of vegetables and poultry grown in these centres and by supplementing them with other selected food material a programme of providing hot meals atleast four times a week to the beneficiaries will be considered. Such a programme is not only expected to improve upon the feeding system but will also generate more employment particularly among women since they will do the cooking and generally help and maintain the vegetable and poultry farms.

Organisation :

In view of the enlarged scope of the nutrition programme envisaged during the Seventh plan, it is also necessary to strengthen the administrative infrastructure by appointing officers, inspectors and other staff at lower levels who are particularly trained to undertake the programmes. Adequate provision will be accordingly provided for strengthening the administrative infrastructure under nutrition.

Financial Dimension :

For the Seventh plan an outlay of Rs. 600 lakhs has been earmarked to meet the requirements of the schemes under Nutrition.

NUTRITION

GN 2

(Rs. in lakhs)

Name of the Scheme/ Projects	Sixth Five year Plan (1980-85) Agreed outlay.	1980-83 Actual expendi- ture.	1983-84 Actual expendi- ture.	1984-85		Seventh Plan (1985-90)		1985-86	
				Appd. Out lay	Anti. Expen- diture.	Proposed Outlay	of which Capital content	proposed Outlay.	of which Capital content.
1	2	3	4	5	6	7	8	9	10
Supplementary Nutrition Programme	73.00	35.91	—	15.00	15.00	300.00	—	50.00	—
Mid day meal	51.00	37.18	27.59	15.00	15.00	300.00	—	50.00	—
I. D. P.	6.00	1.85	—	—	—	—	—	—	—
	130.00	74.94	27.59	30.00	30.00	600.00	—	100.00	—

NUTRITION

GN 3

Item	Unit	Sixth Five Year Plan (1980-85) Target	1980-83 Achieve- ment	1983-84 Achieve- ment	1984-85 Tar- get	Antici- pated Achieve- ment	Seventh Plan (1985-90) Target proposed	1985-86 Target proposed
1	2	3	4	5	6	7	8	9
Beneficiaries covered under :								
i) Supplementary Nutrition	Nos. (‘0008)	1 65	0.51	0.14	0.30	0.20	1.80	0.32
ii) Mid day meals.	Nos.	2,30	0.70	0.18	0.63	0.40	3.59	0.66

General Economic Services

Unlike many other states, Sikkim has no Planning Board. The plan coordination, including formulation and review, is being attended to by the state planning department which has a Bureau of Economics and Statistics attached to it. The recent decision of the government to decentralise planning activities has resulted in the department having to play a more constructive role in plan monitoring and evaluation.

During the Seventh plan, the department, along with the Bureau of Economics and Statistics, will endeavour to introduce new inputs in the planning system particularly regarding development of the statistical base. The Bureau of Economics which was established only in the late 1970's has slowly built up its expertise as a result of which some of the more significant planning parameters are now available. The bureau has already been undertaking certain schemes like the timely reporting of crop statistics, the registration of births and deaths and collaboration with NSSO in undertaking special surveys. Besides continuing these schemes on a wider basis certain new schemes are also proposed during the Seventh plan. They are the establishment of a state income unit, a cell to build up an index number series and the district statistical offices.

Estimates of state income are necessary to evaluate the economic condition of the state and also for undertaking comparative analysis. The overall effect of various developmental activities can be gauged properly only with an assessment of the state income. The collection of such statistics will help in budgetary work particularly when there is the need to introduce a new tax or to study the effect of increasing existing level of taxes. The per capita income assessment is an important yardstick for obtaining an idea about the level of development for the state as a whole.

Changes that take place over time in economic phenomena are also of interest to planners since these reflect past trends and indicate the direction for the future. Generally this is obtained with the help of a series of index numbers on production, productivity, prices etc. In the state not much work has been done in this field except starting a new series of consumer price index numbers. Besides the consumer price index number it is proposed to undertake.

1. Construction of comparative costlines index
2. Construction of wholesale, retail producers and other price indices and
3. Collection and compilation of the wholesale, retail producers and other price indices including methods of weighting, appropriate for each type of indices.

The necessary organisational infrastructure including a supervisory element will accordingly be built up. It is also envisaged to decentralise the activities of collection, compilation and analysis of basic information at the district level by opening a district level officers in each of the districts. This will require necessary strengthening of staff and other overhead expenses which is proposed to be provided for.

As far as the Planning department is concerned it will continue to play a coordination role and will take a leading part in plan formulation, monitoring and evaluation. Efforts will be made to induct

specialists in the department so that the level of analysis will be improved upon. Better equipments for modernizing the work will be purchased from time to time. Attempts will be made to use Computers for quickly gathering and analysing data for plan purposes. A programmer and a systems analyst will accordingly be attached with the department.

Another aspect of work under this sector relates to weights and measures. After the enforcement of the Act in the state, it has become necessary to apprehend those shopkeepers who use defective weights and measures. This has necessitated the supply of weighing instruments and other equipments to the checking staff and to provide them with needed mobility to go around the various bazars. This aspect of the work will also be continued during the Seventh plan period with a wider coverage of bazars.

Financial Dimension :

In the Seventh plan an outlay of Rs. 200 lakhs is earmarked for the schemes under General Economic Services.

GENERAL ECONOMIC SERVICES

GN 2

(Rs. in lakhs)

Name of the scheme/ Projects	Sixth Five Year Plan (1980-85) Agreed outlay.	1980-83	1983-84	1984-85		Seventh Plan 1985-90		1985-86	
		Actual Exp.	Actual Exp.	Appd. Out- lay	Anti. Expen- diture	Proposed Outlay	of which Capital content	Proposed Outlay	of which Capital content
1	2	3	4	5	6	7	8	9	10
Planning & Development	4.00	2.20	2.00	2.00	2.00	14.00	—	2.00	—
Bureau of Economics & Statistics	35.50	10.67	6.10	6.00	8.95	75.00	—	15.00	—
Weights & measures	4.00	4.57	4.77	3.00	3.00	22.00	—	4.00	—
Decentralised planning	—	—	—	—	—	94.00	—	14.00	—
Total	43.50	17.44	26.59	11.00	13.95	200.00	—	35.00	—

Stationary and Printing

Introduction

The Government of Sikkim has only one Press under its control. This Press has been catering to the requirements of the various government departments and from time to time it has undertaken the work of public sector undertakings of the state. One of the main items of work of the press is the printing of the Sikkim Herald not only in English but also in Nepali, Tibetan and Lepcha. The press prints the various forms used by government departments and occasionally takes up the printing of booklets like the budget documents and so on.

Review :

A review of the past performance would indicate that the main problem encountered in the press is the absence of good machines capable of taking up large scale printing work at a short time. The press also does not have adequate offset printing capabilities as a result of which work which involves off-set printing is usually handled by printing presses outside the state. During the course of the Sixth plan, the physical space has been expanded and more machines including cylinder and platen machines have been provided to the press. Replacement of matrices, which is also an important part of keeping the press in good working condition, was also an important aspect of work during the plan. Since printing in various languages has to be undertaken the replacement of matrices has always been a problem because of limited suppliers in Tibetan and Lepcha. The press has also been responsible for taking in apprentices who were given some kind of inservice training by working within the premises after which on acquisition of skills a large number of them have been absorbed in the press.

Seventh Plan Objectives :

The main area of stress in the Seventh plan would be to equip the Press with the needed machinery including a lathe and grinding machine so that most of the printing works required by the state government and government undertakings could be handled by the press. The press will also endeavour to improve upon quality printing for which purpose the need to train certain personnel needs no emphasis.

Since government departments use extensively note sheets and other daily office equipment. the press will endeavour to keep in stock such requirements. The programme of apprentice training will be continued and wherever possible the weaker section of the community would be given preference. A stock inventory system in relation to the procurement and usage of spare parts and replacement will be developed.

Financial Dimension :

For meeting the requirements of the schemes mentioned above Rs 27 lakhs has been provided in the Seventh plan.

STATIONERY AND PRINTING

GN-2

(Rs. in lakhs)

Name of the Scheme/ Projects	Sixth Five year Plan (1980-85) Agreed outlay.	1980-83 Actual expendi- ture.	1983-84 Actual expendi- ture.	1984-85		Seventh Plan (1985-90)		1985-86	
				Appd. Out lay	Anti, Expen- diture.	Proposed Outlay.	of which Capital content	proposed Outlay.	of which Capital content.
1	2	3	4	5	6	7	8	9	10
Direction and Administration	2.00	1.04	0.28	0.52	0.52	1.85	—	0.32	—
Machinery and equipment	10.00	7.74	3.20	5.30	7.30	20.00	—	4.50	—
Stipends	1.00	0.61	0.18	0.18	0.18	1.15	—	0.18	—
Minor Works	5.00	1.00	—	—	—	4.00	4.00	—	—
	18.00	10.39	3.66	6.00	8.00	27.00	4.00	5.00	—

Public Works

Introduction :

The construction of buildings for the purpose of housing government offices is particularly relevant to the state of Sikkim, which, prior to 1975 hardly had the basic infrastructure in the form of government offices. With the merger in 1975 there was a tremendous expansion in government services and thereafter large scale construction work was undertaken through the Sikkim Public Works department, to meet the demands of government offices.

Review :

A brief resume of the building work undertaken will not be out of place. Amongst the prestigious buildings constructed was a modern secretariat building at Gangtok. The growth in government services has however been such that even after construction of such a building the need for additional space has been felt. During the 6th plan an annexe to the secretariat covering an area of 16,000 sq. feet has been taken up for construction. This will be completed during the 7th plan when there will be some relief in the accommodation problem.

The state did not have proper government offices even in the district headquarters. During the 6th plan district administration centres were made functional both at Namchi and Gayzing the headquarters of the south and west districts. The availability of adequate accommodation in these two places has relieved the congestion problem to a considerable extent and has enabled the district officers to function in a more congenial atmosphere.

Among the other important buildings that were constructed during the 6th plan, mention should be made about the police headquarter's building at Gangtok, the Sikkim Armed Police Armoury cum-Office at Pangthang an MLA's Hostel, a modern rest house at Gangtok, building for the Forest Secretariat and for the S. T. C. S.

Seventh Plan :

The need for constructing more buildings is still on and although it might be difficult to predict the actual number of buildings that are needed, it is a fact that even today a number of government offices are functioning in hired buildings. Of these the more important are the Agriculture, Animal Husbandry, Industries, Cooperation and Land Use Departments. An endeavour would be made in the 7th plan to therefore construct a composite building which will house some of these departments functioning in hired premises today. There are certain departments like for example the High Court which needs additional space. The Sikkim Legislative Assembly is today functioning in a building which does not have even the basic requirements of a house of the people. Land for constructing a modern Assembly Building with all the required facilities has already been acquired and hence an effort will be made to start the construction in the early part of the plan. Another important building that will have to be taken up is a modern jail since the existing jail leaves much to be desired. Plans for constructing a modern jail at a cost of more than a crore of rupees have already been drawn up and were projected to the 8th Finance Commission as a part of upgradation in standards of administration. Unfortunately,

the Eighth Finance Commission has not considered for financial grants for the construction of a jail at Gangtok and consequently the burden will have to be shifted to the plan.

At Mangan, district headquarters of North District, plans have already been drawn up for constructing an administrative building complex to include the collector's office and other departmental offices. The existing structures were badly damaged during the torrential rains of September, 1983. Thereafter, a more stable land has been identified and it has been decided that the complex should be housed in this area. This will require an approach road and provision of other facilities like power and water. The scheme will thus be a comprehensive one so as to make the complex fully functional.

The PWD is not only responsible for constructing buildings for other departments but it has the responsibility of catering to its own need in some of the growth centres of the state. During the Seventh plan, divisional and sub-divisional offices of the Engineering departments in a number of places, particularly in the context of the decentralised administration that the government are thinking of, will be put up.

The resources in the plan will also have to cater to the building requirements outside the state. Of these the most important is the annex to the Sikkim House at Delhi. The plans and designs have already been finalised and preliminary work will start before the commencement of the Seventh plan. However, the major part of the work will have to be undertaken during the Seventh plan for which the needed amount will have to be provided. A rest house cum bus station at Siliguri which is an important originating centre of traffic for the state is also one of the priority items as far as building construction is concerned.

A list of the buildings programmed to be taken up during the Seventh plan is given below :

1. Administrative complex at Mangan including a new rest house.
2. Composite office buildings at Gangtok and Jorethang to house various departments.
3. A Legislative Assembly.
4. Extension and expansion of the High Court.
5. A conference hall with suitable extension in the secretariat of Gangtok.
6. Divisional and sub-divisional offices for engineering departments in various places.
7. The Sikkim House annexe at New Delhi.
8. Rest House cum bus stand at Siliguri.
9. A mechanical workshop complex for the Public Works Department.
and
10. A modern jail at Gangtok.

Financial Dimension ;

In order to meet the requirements of the schemes detailed above an outlay of Rs. 450 lakhs has been earmarked in the Seventh plan.

PUBLIC WORKS

GN 2

(Rs. in lakhs)

Name of the Scheme/ Projects	Sixth Five year Plan (1980-85) Agreed outlay.	1980-83 Actual expendi- ture.	1983-84 Actual expendi- ture.	1984-85		Seventh Plan (1985-90)		1985-86	
				Appd. Out lay	Anti. Expen- diture.	Proposed Outlay	of which Capital content	proposed Outlay.	of which Capital content.
1	2	3	4	5	6	7	8	9	10
1. Direction & Administration.	20.00	24.43	2.74	5.00	5.00	5.00	-	1.00	-
2. Construction of Buildings.	208.00	137.96	69.65	45.00	45.00	445.00	445.00	59.00	59.00
Total	228.00	162.39	72.39	50.00	50.00	450.00	445.00	60.00	59.00

Food & Civil Supplies

The Food & Civil Supplies department, which was first set up in the year 1975, is responsible for the enforcement of all the laws relating to essential commodities and formulation of policies for procurement, storage, distribution and control for all essential commodities allotted to the state by the Government of India. Being a small state, the requirements are not much but subjected to frequent disruption in communication lines, there is urgent need to buffer stock particularly the core commodities such as rice, sugar, wheat and edible oil.

To begin with, in the year 1975 the department handled only the monthly quota of rice which amounted to 1200 M. T. There was hardly any storage facility and hence the stocking was done in hired godowns and by adopting a system of quick turn over. With the passage of time the godown capacity was increased and with the extension of various central laws in the state the department has to undertake the responsibility of enforcing such enactments. The quota of rice has increased to 3500 MT per month and correspondingly there has been an enhancement in the quota of other commodities as well.

During the 6th plan the main area of work of the department was in strengthening its distribution and storage network and in developing a town rationing system so that it would be ready to handle any emergent shortage of commodities. By the end of the 6th plan the total storage capacity for foodgrains storage in constructed places would be 4,300 M.T. Besides this, temporary godowns in rented houses have been established to cover 2,400 M.T. With this network of godowns, the department has been able to distribute foodgrains and other essential commodities even to the far flung regions of the state without any serious complaints. However it has found the task somewhat difficult on account of the inadequate number of functional vehicles particularly trucks and a shortage of field staff which have to be made good during the 7th plan. The department has also faced certain problems of lifting, particularly rice, from the F. C. I. godowns at Siliguri where there are chronic labour problems. In order to overcome this difficulty the F. C. I. has agreed to construct a modern and well equipped godown at Majitar with a capacity of 10,000 M. T. which when complete, could cater to the South and West districts also. This godown is expected to be functional by the first year of the 7th plan.

The main objective in the 7th plan will be to construct additional godowns in all those regions where there are only rented godowns and to hire or construct godowns in a few additional regions as well, so as to ensure that the total storage capacity will increase from 7,700 M.T. by the end of the 6th plan to 10,000 M.T. by the end of the 7th plan. Another objective of the plan would be to streamline distribution including buffer storing in important regions.

As far as storage is concerned, the need to develop the capacity needs no special emphasis. Currently the quota allotted to Sikkim on the main commodities are levy rice 3,500 M.T., sugar 155.7 M.T, whole wheat (Public) 2500 M.T. and edible oils 200 M.T. It is likely that this quotas will be increased and accordingly the storage capacity will also have to be expanded. The construction programme will have to take into account the fairly high cost of land and material and therefore the number of godowns that can possibly be constructed will ultimately depend upon the final allocation. Since Siliguri is the main supply point for almost all the commodities and since all the items are unloaded, stored and finally despatched to various locations in Sikkim from Siliguri through a transit godown, which has proved to be inadequate, it is proposed that a standard fire proof warehouse with a capacity of 2,000

M.T. would be constructed in a piece of land available with Sikkim government, at Siliguri. Besides Siliguri, it is in Gangtok capital town that there is need to provide additional godown space. The present location of the godown is in a congested area and hence another one with a capacity of 2,000 M. T. will be constructed either at Tadong or Ranipoc.

Besides the construction of new godowns the existing godowns will also be improved upon particularly to provide approach roads, marshalling yards and proper drainage systems so that the commodities stocked in them will not deteriorate.

Regarding the distribution system the main effort will be to equip the department with a fleet of functional vehicles which are in good working condition. Besides vehicles, more field staff to supervise and monitor the distribution aspect will also be created. Area officers, atleast in some of the important locations will also form part of the improvement in distribution. Some strengthening of the headquarters staff will also be undertaken.

Another aspect of work that will be continued is that of the rationing system. During the 7th plan more areas will be covered for survey and enumeration of houses, numbering and compilation of sector-wise records. For these purposes the needed staff both on temporary and permanent basis will be added to the establishment.

An effective public distribution system is an important socio-economic parameter constituting a vital ingredient in the new 20 Point programme and hence the need to provide the needed support at all levels needs no special emphasis.

Financial Dimension:-

An outlay of Rs. 75 lakhs has been provided in the Seventh plan for the schemes mentioned above.

FOOD & CIVIL SUPPLIES

GN 2

(Rs. in lakhs)

Name of the Scheme/ Project	Sixth Five Year Plan (1980-85) Agreed outlay	1980-83 Actual expendi- ture	1983-84		1984-85		Seventh Plan (1985-90) of which Capital contant	1985-86	
			Actual expendi- ture	Appd. outlay	Ant. Expen- diture	Proposep outlay		proposed outlay	of which Capital contant
1	2	3	4	5	6	7	8	9	10
Direction and administration	14.00	9.55	4.00	3.00	3.00	52.00	-	8.00	-
Construction of Godown	22.00	13.49	4.15	2.00	2.00	17.50	17.50	3.00	3.00
Town Rationing Offices	14.00	2.19	0.50	2.00	2.00	5.50	5.50	1.00	1.00
	50.00	25.23	8.65	7.00	7.00	75.00	23.00	12.00	4.00

FOOD & CIVIL SUPPLIES

GN 3

Item	Unit	Sixth Five Year Plan (1980-85) Target	1980-83 Achieve- ment	1983-84 Achieve- ment	1984-85 Tar- get	1984-85 Antici- pated Achieve- ment	Seventh Plan (1985-90) Target proposed	1985-86 Target proposed
1. Storage Capacity	Metric tonne	6.00	3.2	3.7	6.7	4.3	2.3	.05

URBAN DEVELOPMENT

GN-2

(Rs. in lakhs)

Name of the scheme/ Projects	Sixth Five Year Plan (1980-85) Agreed outlay.	1980-83 Actual Exp.	1983-84 Actual Exp.	1984-85 Appd. Out- lay	Anti. Expen- diture	Seventh Plan 1985-90 Proposed Outlay	of which Capital content	1985-86 Proposed Outlay	of which Capital content
1	2	3	4	5	6	7	8	9	10
A. ASSISTANCE TO G.M.C.									
1. Direction & Administration	2.00	1.05	0.50	0.50	0.50	3.00	—	0.60	—
2. Environmental Improvement	10.00	1.88	2.00	6.00	6.00	15.00	—	4.00	—
3. Public Latrines	2.50	0.65	0.50	0.20	0.20	2.00	—	0.40	—
4. Super Market	25.00	0.76	5.00	3.00	3.00	18.00	—	3.00	—
5. Shopping centre	2.00	—	1.50	0.50	0.50	—	—	—	—
6. Car Parking Place	10.00	1.40	4.00	10.00	10.00	60.00	—	12.00	—
7. Garbage Disposai	7.00	1.51	1.00	0.30	0.30	9.00	—	3.00	—
8. Staff Quarters	3.00	3.76	1.00	0.50	0.50	4.00	—	1.00	—
9. Parks & Gardens	—	—	—	—	—	1.00	—	0.50	—
10. Upkeep of town	—	—	—	—	—	5.00	—	1.00	—
11. Rain Shelters	—	—	—	—	—	3.00	—	0.50	—
12. Sub Total	68.00	11.01	15.50	21.00	21.00	120.00	—	26.00	—
B. OTHER BAZARS :									
Direction and Adminis- tration	4.00	0.08	0.12	0.20	0.20	1.00	—	0.20	—
Construction of Hat Shede	6.00	4.7	0.99	2.00	1.91	10.00	—	2.00	—
Machinery and Equip- ments	1.00	0.52	0.12	0.10	0.10	0.50	—	0.10	—
Construction of Meat Stalls	3.00	0.82	—	0.40	0.25	2.00	—	0.40	—
Public latrines	6.00	3.90	0.63	1.50	1.20	8.50	—	1.50	—
Environmental improve- ment	5.00	2.97	1.42	1.00	1.00	6.00	—	1.00	—
Boundary Pillars	1.00	—	0.23	0.50	0.48	2.50	—	0.50	—
Garbage disposal	4.00	—	0.07	0.30	0.25	1.50	—	0.30	—
Town planning cell	7.00	4.55	1.77	2.00	1.33	11.00	—	2.00	—
Sweepers Quarters	3.00	0.75	—	1.00	1.00	6.00	—	1.00	—
Land Acquisition	—	—	—	—	—	—	—	—	—
Investment in Sikkim	6.00	0.18	2.80	6.00	5.37	31.00	—	6.00	—
Housing Board	6.00	5.00	8.00	2.00	—	10.00	—	2.00	—
Sub-total	52.00	23.50	16.15	17.00	13.09	90.00	—	17.00	—
TOTAL	120.00	36.56	31.65	38.00	34.00	210.00	—	43.00	—

Sub. National Systems Unit,
National Institute of Educational
Planning and Administration
17-B, S.I.A. Condo Mar. New Delhi-110016
DOC. No. 20.86.....
Date 10.1.85.....

NIEPA DC



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DRAFT SEVENTH FIVE YEAR PLAN (1985-90) AND ANNUAL PLAN 1985-86 GN-1

HEADS OF DEVELOPMENT
OUTLAY AND EXPENDITURE

(Rs. lakhs).

Sl. No.	Heads/ Sub- Head of Develop- ment	Sixth Plan 1980- 85. Agreed outlay	1980-83 Actual Expendi- ture.	1983-84 Actual Expendi- ture.	1984-85		Seventh Plan (1985-90)		1985-86	
					Appro- ved outlay.	Anticipa- ted Expdtr.	Proposed outlay.	of which capital content	proposed outlay	of which capital content
(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1.	Agriculture.	972	566.50	236.29	273	273	2100	333.00	325	62.00
2.	Land- Reforms.	119	71.40	12.77	18	18	120	0.68	20	2.45
3.	Irriga- tion.	400	238.55	72.44	125	125	1900	700.00	270	50.00
4.	Soil Conservation.	662	380.83	116.85	150	150	1600	-	230	-
5.	Food & Civild Suppl.	48	25.23	8.65	7	7	75	23.00	12	4.00
6.	Animal Husbandry.	500	250.35	114.00	145	145	1100	200.00	177	40.00
7.	Fisheri- es.	100	40.31	10.22	20	20	120	91.00	20	15.80
8.	Forest	570	299.09	126.68	158	158	1200	-	210	-

contd....

(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
9.	Pancha- yats.	25	5.98	2.84	10	10	150	-	25	-
10.	Special rural Dev.	155	51.07	50.38	36	36	530	-	70	-
11.	Coopra- tion.	160	53.35	34.27	42	42	400	120	60	24
12.	Flood control.	50	31.70	10.16	15	15	140	-	25	-
13.	Power	1200	601.22	204.41	298	298	4200	3787	680	583
14.	Indust- ries.i/c Tea.	684	298.72	137.95	139	139	1050	548	198	114
15.	Mining	120	52.12	33.98	41	41	180	114	50	39
16.	Roads	2420	1463.23	597.57	711	711	4900	4700	800	770
17.	Road Transport.	480	236.89	95.28	83	83	950	900	200	193
18.	Tourism	175	79.65	26.00	28	28	250	58	40	9
19.	Education	830	513.31	352.96	550	550	3300	830	520	160
20.	Art & Culture.	100	59.10	22.74	25	25	180	12	30	2
21.	Scienti- fic Services.	-	-	1	1	1	8	-	1	-

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
22. Medical & Health	435	248.79	119.71	140	140	1200	490	195	70	
23. Water Supply & Sewerage	950	508.99	251.02	230	230	2100	885	426	147	
24. Housing	302	115.76	49.39	64	64	600	550	110	100	
25. Urban Dev.	120	35.56	31.65	38	38	210	-	43	-	
26. Information and Publicity.	40	31.10	13.00	16	16	100	-	18	-	
27. Labour Welfare	40	28.95	9.53	9	9	60	20	12	8	
28. Welfare of SC & ST.	90	59.59	20.48	28	28	150	7.50	27	2.50	
29. Social Welfare.	33	16.33	8.98	11	11	100	11	17	5.20	
30. Nutrition	130	75.56	30.00	30	30	600	-	100	-	
31. General Economic Services.	44	17.44	26.59	11	11	200	-	35	-	

contd....

(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
32.	Stations- 18		10.39	3.66	6	8.00	27	4	5	-
	ry & Printing.									
33.	Public									
	Works	228	162.39	72.39	50	50	450	445	60	59
<hr/>										
	TOTAL :-	12200	6629.15	2903.84	3508	3708	30250	14829.18	5011	2459.95

MINIMUM NEEDS PROGRAMME
OUTLAY AND EXPENDITURE

GN. 4
(Rs. in lakhs)

Name of the Programme	Sixth Five Year Plan (1980-85)	1980-83 Actual Expenditure	1983-84 Actual Expenditure	1984-85		Seventh Plan (1985-90)		1985-86 Proposed	
				Appd. Outlay	Anticipated Expd.	Proposed Outlay	Of Which Capital Content	Total Outlay	Of Which Capital Content
1	2	3	4	5	6	7	8	9	10
Rural Electrification	180.00	66.93	44.27	50.00	50.00	138.00	-	50.00	-
Rural Road	1725.00	556.17	1047.83	525.00	525.00	3700.00	3700.00	547.00	547.00
Elementary Education	380.00	252.56	189.17	261.00	261.00	1450.00	400.00	224.00	82.00
Adult Education	10.00	7.00	2.39	8.00	8.00	100.00	-	20.00	-
Rural Health	139.00	102.07	42.08	59.00	59.00	365.00	270.00	65.00	50.00
Rural Water Supply	600.00	304.28	148.60	140.00	140.00	1050.00	-	200.00	-
Rural House sites-cum- Construction Schemes:									
Allotment of sites	-	-	-	-	-	-	-	-	-
Construction Assistance	60.00	-	4.00	4.00	4.00	50.00	-	10.00	-
Sub Total	60.00	-	4.00	4.00	4.00	50.00	-	10.00	-
Environmental improvement of slums	15.00	4.85	8.42	7.00	7.00	21.00	-	5.00	-
Nutrition	130.00	34.94	27.59	30.00	30.00	600.00	-	100.00	-
	3239.00	1368.80	1509.35	1084.00	1084.00	7474.00		1221.00	

PHYSICAL TARGETS AND ACHIEVEMENTS
M.N.P.

GN-5

Sl. No.	HEAD OF DEVELOPMENT	UNIT	1979-80 BASE LEVEL	SIXTH FIVE YEAR PLAN TARGET (1980-85)	ACHIEVEMENT		1984-85	SEVENTH	ANNUAL	
					1980-83	1983-84	TARGET	ANTICIPATED ACHIEVEMENT	PLAN (1985-90) PROPOSED TARGET	PLAN (1985-86) PROPOSED TARGET
1	2	3	4	5	6	7	8	9	10	11
1.	<u>Rural Electrification:</u>									
	Villages electrified	No.	45	144	67	42	52	52	199	51
2.	<u>Rural Roads:</u>									
a)	Length	Km.	892	1241		1142	1241	1241	1400	1263
b)	Total No: of villages in the State	No.	404	404	404	404	404	404	404	404
c)	Villages connected with population below 1000.	No.	158	225	210	243	259	259	300	263
3.	<u>Elementary Education:</u>									
a)	Classes I-VIII (age group 6-14 years) enrolment	No. ('000)	46.093	78.00	59.682	66.411	78.00	74.244	82.00	77.00
b)	Non Formal Education Enrolment.	No. ('000)	-	20.20	-	-	21.00	13.280	20.10	25.85
4.	<u>Adult Education:</u>									
i)	No: of Centres	No.	424	1000	586	592	1000	687	600	600
ii)	No: of participants	Nos ('000)	16.429	80.00	40.631	11.895	18.00	14.14	75.00	15.00
5.	<u>Rural Health:</u>									
a)	Sub Centres	Nos.	27	100	62	72	82	92	132	112
b)	PHCs	Nos.	15	18	16	17	18	18	23	19
c)	Subsidiary Health Centres	Nos.	-	-	-	-	-	-	-	-
d)	Community Health Centres	Nos.	-	-	-	-	-	-	4	1
e)	PHCs covered under Village health guide scheme	Nos.	-	18	11	11	11	11	30	18

	1	2	3	4	5	6	7	8	9	10	11
6. <u>Rural Water Supply:</u>											
(a) <u>State Sector:</u>											
Piped Water Supply:											
i) Villages covered	Nos.	65	148	59	17	20	20	194	54		
ii) Population covered	Nos(Lakhs)	0.30	0.67	0.16	0.06	0.09	0.09	0.76	0.21		
(b) <u>Central Sector(ARP)</u>											
Piped water supply:											
i) Village covered	Nos.	42	22	43	59	70	70	194	54		
ii) Population covered	Nos(Lakhs)	0.20	0.37	0.13	0.22	0.32	0.32	0.76	0.21		
7. <u>Rural House Sites-cum- Construction schemes:</u>											
Construction assistance Nos.		-	-	-	58	60	60	500	100		
8. <u>Nutrition:</u>											
a) Beneficiaries under special nutrition programme	Nos. ('000's)	32.00	165.00	51.00	14.00	30.00	20.00	180.00	32.00		
b) Beneficiaries under Mid Day Meal programme	Nos. ('000's)	33.00	230.00	70.00	18.00	63.00	40.00	359.00	66.00		
9. <u>Environmental Improvement of slums:</u>											
a) Towns covered	Nos.	1	8	3	5	-	3	39	6		
b) Persons benefited	Nos.	600	10,000	3925	10250	2800	3160	20000	4000		

DRAFT SEVENTH FIVE YEAR PLAN (1985-90) AND ANNUAL PLAN 1985-86
CENTRALLY SPONSORED SCHEMES

STATEMENT GN-6

(OUTLAY AND EXPENDITURE UNDER CENTRAL SECTOR ONLY)

(Rs. lakhs)

Name of Scheme	Pattern of Sharing Expenditure (i.e. 50:50 100% etc)	Sixth Plan Outlay (1980-85)	Actual Expenditure 1980-83	Actual Expenditure 1983-84	1984-85 Allocation	Anticipated Expenditure	Seventh Plan (1985-90) Proposed Outlay	1985-86 Proposed Outlay
1.	2.	3.	4.	5.	6.	7.	8.	9.
A. AGRICULTURE :								
i) All India Co-ordinated maize improvement project (ICAR)	75:25	3.00	1.54	0.56	0.60	0.60	5.00	0.75
ii) Rice Minikit-Cum-Community Nurseries Programme	100%	14.29	6.71	3.59	3.65	3.65	21.25	3.81
iii) Development of Pulses Programme	50:50	6.28	-	1.57	3.50	3.50	25.00	4.00
iv) National Oilseed Development Programme	50:50	5.07	-	2.09	2.23	3.23	18.00	2.50
v) Training Programme on rice, wheat, etc.	50:50	0.66	0.38	0.14	0.14	0.14	1.40	0.21
vi) Special Assistance to small and marginal farmers	50:50	20.00	-	10.00	10.00	10.00	60.00	10.00

	1.	2.	3.	4.	5.	6.	7.	8.	9.	
	vii)	Strengthening of Seed Testing Laboratory	100%	5.62	-	-	5.62	1.50	5.62	4.12
01	viii)	National grid of rural godowns	50:50	4.57	-	-	4.57	1.00	6.00	3.57
	B.	<u>RURAL DEVELOPMENT</u>								
	i)	I.R.D.P.	50:50	65.00	14.75	16.00	16.00	16.00	160.00	32.00
	ii)	N.R.E.P.	50:50	90.00	17.85	20.00	36.00	36.00	370.00	38.00
02	iii)	Rural Landless Employment Gua-rantee Programme	100%	-	-	8.00	40.00	40.00	340.00	55.00
03	C.	<u>SOIL CONSERVATION :</u>								
	i)	Soil conservation in the Catchment of River Valley Proj- ect	100%	73.00	20.14	14.00	20.00	20.00	300.00	150.00
07	ii)	Integrated Soil and Water Conser- vation in the Himalayas	100%	92.70	17.86	20.00	35.00	35.00	400.00	70.00
	D.	<u>ANIMAL HUSBANDRY.</u>								
08	i)	Control of foot and mouth Disea- ses	50:50	-	1.56	1.06	1.60	1.60	7.00	1.40
09	ii)	Rinderpest Su-rveillance	50:50	-	0.49	0.23	1.00	0.75	3.25	0.80
	iii)	Animal Disease Surveillance	50:50	-	-	0.55	0.80	0.80	5.00	0.80
10	iv)	Cont. of Pollorum Disease	50:50	-	-	0.22	0.70	0.70	2.50	0.50

DRAFT SEVENTH FIVE YEAR PLAN (1985-90) AND ANNUAL PLAN 1985-86
CENTRALLY SPONSORED SCHEMES

STATEMENT GN-6.

(OUTLAY AND EXPENDITURE UNDER CENTRAL SECTOR ONLY)

(Rs. lakhs)

Name of Scheme	Pattern of Sharing Expenditure (i.e. 50:50 100% etc)	Sixth Plan Outlay (1980-85)	Actual Expenditure 1980-83	Actual Expenditure 1983-84	1984-85 Allocation	Anticipated Expenditure	Seventh Plan (1985-90) Proposed Outlay	1985-86 Proposed Outlay
1.	2.	3.	4.	5.	6.	7.	8.	9.
A. AGRICULTURE :								
i) All India Co-ordinated maize improvement project (ICAR)	75:25	3.00	1.54	0.56	0.60	0.60	5.00	0.75
ii) Rice Minikit-Cum-Community Nurseries Programme	100%	14.29	6.71	3.59	3.65	3.65	21.25	3.81
iii) Development of Pulses Programme	50:50	6.28	-	1.57	3.50	3.50	25.00	4.00
iv) National Oilseed Development Programme	50:50	5.07	-	2.09	2.23	3.23	18.00	2.50
v) Training Programme on rice, wheat, etc.	50:50	0.66	0.38	0.14	0.14	0.14	1.40	0.21
vi) Special Assistance to small and marginal farmers	50:50	20.00	-	10.00	10.00	10.00	60.00	10.00

	1.	2.	3.	4.	5.	6.	7.	8.	9.	
	vii)	Strengthening of Seed Testing Laboratory	100%	5.62	-	-	5.62	1.50	5.62	4.12
01	viii)	National grid of rural godowns	50:50	4.57	-	-	4.57	1.00	6.00	3.57
	B.	<u>RURAL DEVELOPMENT</u>								
	i)	I.R.D.P.	50:50	65.00	14.75	16.00	16.00	16.00	160.00	32.00
	ii)	N.R.E.P.	50:50	90.00	17.85	20.00	36.00	36.00	370.00	38.00
02	iii)	Rural Landless Employment Gua-rantee Programme	100%	-	-	8.00	40.00	40.00	340.00	55.00
03	C.	<u>SOIL CONSERVATION :</u>								
	i)	Soil conservation in the Catchment of River Valley Proj- ect	100%	73.00	20.14	14.00	20.00	20.00	300.00	150.00
07	ii)	Integrated Soil and Water Conser- vation in the Himalayas	100%	92.70	17.86	20.00	35.00	35.00	400.00	70.00
	D.	<u>ANIMAL HUSBANDRY.</u>								
08	i)	Control of foot and mouth Disea- ses	50:50	-	1.56	1.06	1.60	1.60	7.00	1.40
09	ii)	Rinderpest Su-rveillance	50:50	-	0.49	0.23	1.00	0.75	3.25	0.80
	iii)	Animal Disease Surveillance	50:50	-	-	0.55	0.80	0.80	5.00	0.80
10	iv)	Cont. of Pollum Disease	50:50	-	-	0.22	0.70	0.70	2.50	0.50

1.	2.	3.	4.	5.	6.	7.	8.	9.
v) A.I.C.R.P. on Poultry	50:50	-	3.74	2.34	5.00	6.00	15.00	3.00
vi) A.I.C.R.P. on Sheep	50:50	-	2.04	-	-	-	-	-
vii) A.I.C.R.P. on Goat	50:50	-	-	0.72	7.00	7.00	17.50	3.75
viii) A.I.C.R.P. on FMD	75:25	-	0.77	0.43	1.00	1.00	4.50	0.75
ix) Livestock Survey and investigation	50:50	-	-	0.12	1.00	1.00	6.00	1.00
x) Dairy Development Programme of Milk Production and Marketing	(70% loan & 30% grant)	-	23.50	0.28	1.00	1.00	10.00	3.00
E. FORESTRY :								
i) Development of Sanctuaries	50:50	-	3.11	0.40	1.00	1.55	4.00	0.80
ii) Survey of wild life	50:50	-	4.68	1.56	2.00	1.20	4.50	0.75
iii) Roads and Buildings	50:50	-	13.81	0.80	7.00	6.20	44.95	8.70
iv) Machinery and equipment	50:50	-	-	-	1.00	-	7.20	2.50
v) Wild Life Publicity	50:50	-	-	-	0.50	-	7.75	2.75
vi) Survey and Demarcation	50:50	-	-	-	0.50	-	5.00	1.00
vii) Development and Propagation of medicinal Herbs	50:50	-	-	-	-	-	3.75	-
viii) Fuel wood plantation	50:50	40.00	15.14	9.91	20.20	20.20	400.45	50.00

1.	2.	3.	4.	5.	6.	7.	8.	9.	
F. INDUSTRIES :									
01	i) District Industries Centre	50:50	10.25	4.00	1.80	4.45	4.45	13.50	3.50
	ii) Entrepreneurship Development	50:50	1.65	1.00	0.40	0.25	0.25	2.25	0.25
02	iii) Training to Rural Artisans	50:50	3.70	1.70	1.00	1.00	1.00	7.25	1.00
	iv) Information and Publicity	50:50	1.70	1.00	0.40	0.30	0.30	2.00	0.25
03	G. ROADS :								
	Rangpo-Rorathang-Rongli Road and Singtam-Makha-Dikchu-Rangrang Road	50:50	10.00	1.34	58.54	20.00	20.00	50.00	10.00
H. EDUCATION :									
07	i) Adult Education	100%	-	11.76	8.61	5.60	5.60	50.00	10.00
	ii) Educational Technology	100%	-	2.68	0.56	2.23	2.23	30.00	5.00
08	iii) Stipend/clothing to Tibetan Refugees of Enchey School	100%	-	2.63	1.75	2.45	2.45	15.00	3.00
09	iv) Rural Talented Children	100%	-	-	0.06	0.47	0.47	5.00	1.00
10	v) Hindi Scholarship	100%	-	-	0.04	0.03	0.03	0.50	0.10

1.	2.	3.	4.	5.	6.	7.	8.	9.	
<u>I. MEDICAL AND PUBLIC HEALTH :</u>									
i)	Family Planning	100%	-	44.12	26.86	61.45	61.45	328.13	65.00
ii)	National Malaria Eradication Programme	50:50	-	20.56	8.14	16.50	16.50	90.00	17.00
iii)	National Tuberculosis Control Programme	50:50	-	2.08	0.01	1.00	1.00	119.00	20.00
iv)	National Leprosy Control Programme	100%	-	13.52	2.53	4.52	4.52	27.71	4.57
v)	Prevention and Control of Blindness	100%	-	2.91	0.29	0.70	0.70	10.09	1.80
vi)	Goitre Control	50:50	-	-	-	-	-	43.00	8.00
vii)	Integrated Child Development	100%	-	42.20	15.75	15.00	15.00	85.00	16.00
viii)	Functional Literacy for Adult Women	100%	-	1.69	0.12	3.00	3.00	15.00	3.00
<u>J. WATER SUPPLY AND SANITATION :</u>									
i)	Accelerated Rural water supply schemes including M.I. units incentive (Bonus) Scheme	100%	4.00	172.73	305.94	375.39	375.39	1040.00	200.00
ii)	Training centre for Rural Development	100%	-	-	-	0.10	0.10	-	-

1.	2.	3.	4.	5.	6.	7.	8.	9.
iii) Rural Sanitation	100%	0.75	-	-	0.75	1.00	10.00	2.00
K. <u>URBAN DEVELOPMENT</u> :								
Integrated development of small and medium towns		-	-	5.00	2.00	2.00	50.00	10.00
L. <u>SOCIAL WELFARE</u> :								
i) Welfare of Destitute	50%	7.00	4.03	2.20	1.98	0.50	37.00	5.00
ii) Working Womens' Hostel	75%	2.50	-	0.50	1.00	1.00	11.00	4.00
iii) Construction of Destitute Home	45%	-	-	-	1.00	2.20	12.50	6.00
iv) Integrated Education for Disabled Ch-ildren	100%	-	-	0.16	1.00	1.00	8.00	2.00
M. <u>FLLOOD CONTROL</u> :								
Anti Erosion Works	100%	-	-	-	-	-	500.00	60.00
N. <u>TOURISM</u> :								
Youth Hostel	100%	-	-	-	31.40	14.40	17.00	17.00
O. <u>WELFARE OF SCHEDULED CASTES/TRIBES</u> :								
i) Post Metric Scholarship	100%	-	3.49	1.48	2.00	2.00	16.00	3.00

1.	2.	3.	4.	5.	6.	7.	8.	9.
ii) Scheduled Caste Girls' Hostel	50:50	-	-	6.42	2.00	2.00	10.00	2.00
iii) Special Compo- nent Plan	100%	-	2.50	1.50	2.00	2.00	15.00	2.50
iv) Tribal Sub-Plan	100%	118.00	30.00	33.00	36.00	36.00	180.00	36.00

P. GENERAL ECONOMIC
SERVICES :

i) Timely reporting of crop statis- tics	50:50	5.00	-	-	0.10	0.10	5.00	1.00
ii) Collaboration with NSS	50:50	5.00	1.09	1.70	1.70	2.15	10.50	2.00
iii) Registration of births & Deaths	50:50	2.50	0.37	0.50	0.40	0.95	5.00	1.00

TWENTY POINT PROGRAMME
OUTLAY AND EXPENDITURE

STATEMENT. TPP. 1

		(Rs. in lakhs)						
Int e. de)	item	Sixth plan Outlay (1980-85)	1980-83 Actual Expendi ture	1983-84 Actual Expendi ture	1984-85 Appro ved Out- lay	Anti cipated expen- diture	Seventh plan (1985-90) Outlay proposed	1985-86 Outlay proposed
1	2	3	4	5	6	7	8	9
01.	(i) Minor Irrigation	340.00	208.45	69.16	108.00	108.00	985.00	179.00
	(ii) Medium Irrigation	-	-	-	-	-	700.00	50.00
	(iii) Dry Land Agriculture	4.00	-	-	4.00	4.00	65.00	8.00
02.	Production of Pulses & Oil seeds	9.50	-	1.00	6.80	6.00	15.00	3.00
03.	(i) Integrated Rural Deve- lopment Programme	130.00	33.32	16.00	32.00	32.00	320.00	64.00
	(ii) National Rural Employ- ment Programme	180.00	43.00	20.00	40.00	40.00	740.00	76.00
	(iii) Rural Landless Employ- ment Guarantee Programme	-	-	8.00	40.00	40.00	340.00	55.00
07.	Accelerated Programme for Development of Scheduled Castes and Tribes	38.00	13.69	4.62	3.50	3.50	24.50	4.50
					(represents outlays under the schemes of administrative Dept. only) Flow from TSP and SCP is not accounted for.			
08.	Supply of Drining Water to Problem Villages	600.00	304.28	148.60	140.00	140.00	1050.00	200.00
09.	Rural House sites - cum construction assistance	60.00	-	4.00	4.00	4.00	50.00	10.00
10.	Environmental Improvement of Slums	15.00	4.85	3.42	7.00	7.00	21.00	5.00

1	2	3	4	5	6	7	8	9
11.	Power	1105.00	515.62	141.18	234.00	234.00	3770.00	600.00
12.	Afforestation, Social and Farm Forestry.	181.00	71.20	33.98	38.00	38.00	400.00	80.00
13.	Family Planning	-	44.12	26.86	61.45	61.45	328.13	65.00
14.	(i) Universal Primary Health Care	139.00	102.07	42.08	59.00	59.00	365.00	65.00
	(ii) Control of Leprosy, T.B. and Blindness	-	20.59	2.84	7.22	7.22	275.80	46.37
15.	(i) Accelerated Programme for welfare of women and children	15.50	7.16	3.58	4.78	4.78	38.00	8.50
	(ii) Nutrition	130.00	74.94	27.59	30.00	30.00	600.00	100.00
16.	(i) Elementary Education	380.00	252.56	189.17	261.00	261.00	1450.00	224.00
	(ii) Adult Education	10.00	7.00	2.39	8.00	8.00	100.00	20.00
18.	Village and Small Scale Industries	242.15	78.46	37.45	40.00	40.00	380.00	79.00
	TOTAL: -	3579.15	1781.21	781.92	1128.75	1128.75	12011.43	1941.37

TWENTY POINT PROGRAMME
PHYSICAL TARGETS AND ACHIEVEMENTS

TPP : 2

item	unit	1979-80 Level	Sixth plan (Tar- get) 1980- 85	1980-83 Achieve ment	1983-84 Achieve ment	1984-85 Target	Achieve ment	Seventh plan (1985- 90) Target	1985-86 Target	
1	2	3	4	5	6	7	8	9	10	11
1. (a) <u>Minor Irrigation</u>	000									
	hac.	7.8	13.80	4.10	1.50	1.20	1.00	7.60	1.50	
(i) Potential created										
(ii) Utilisation	000									
	hac.	4.0	4.3	2.3	0.90	1.00	1.00	5.00	1.20	
(b) <u>Medium Irrigation</u>	000									
(i) Potential	hac.	-	-	-	-	-	-	2.00	-	
(ii) Utilization	000									
	hac.	-	-	-	-	-	-	0.50	-	
(c) <u>Dry Land Agriculture</u>										
(i) Micro Water sheds	No.	-	-	1	3	4	4	4	4	
(ii) Area covered under micro water sheds	hac.	-	-	800	2500	3500	3500	4000	1000	
(iii) Area covered out- side water sheds	000 hac.	-	-	10.88	12.50	13.50	13.50	15.00	3.00	
(iv) Plantation of quick growing fruits and fodder	hac.	-	-	-	-	100	100	500	100	
(v) Water conservation	hac.	-	-	270	400	500	500	1500	500	
(vi) Soil conservation	hac.	-	-	510	200	400	400	1500	500	
(vii) Tank Irrigation	Nos.	-	-	-	100	150	150	1000	200	
(viii) Hand Tools distri- bution	No.	-	-	1500	1600	1800	1800	10000	2000	

	1	2	3	4	5	6	7	8	9	10	11
02.	(a) Production of Pulses	000 tonnes	-	6.00	13.59	7.05	9.00	9.23	13.62	9.87	
	(b) Production of Oil seeds	000 tonnes	-	7.57	10.51	7.34	10.00	9.00	13.00	10.11	
03.	(a) Beneficiaries assisted under IRDP	Nos.	1500	42000	3918	2656	2400	3000	24000	4800	
	(b) Employment generated under NREP	Man-days (lakhs)	-	6.75	3.40	3.00	3.50	3.50	14.00	2.50	
07.	(a) Assistance to Scheduled Caste families	Nos.	-	500	305	140	140	140	900	1.50	
	(b) Assistance to Scheduled Tribe families	Nos.	-	657	507	150	150	200	1000	200	
08.	(i) Villages covered under MNP	Nos.	65	148	59	17	20	20	194	54	
	(ii) Villages covered under ARP	Nos.	42	22	43	59	70	70	194	54	
09.	House construction assistance to rural families	Nos.	-	-	-	58	60	60	500	100	
10.	Environmental Improvement of slums - persons benefited	Nos.	600	10,000	3925	10250	2000	3160	20,000	4000	

* Figures represents targets and achievements under the Departmental scheme of "economic betterment" only. Flow of benefits from the

1	2	3	4	5	6	7	8	9	10	11
1.	(i) Villages electrified	Nos.	45	144	67	42	52	52	199	51
	(ii) Electricity generated	MKWH	9.20	45.10	64.82	27.77	66.40	26.40	200.50	32.50
12.	(i) Tree Plantation	Nos. lakhs	-	-	-	76	77	77	500	90
	(ii) Gover Gass	Nos.	-	-	20	20	20	20	200	30
13.	Family Planning	Nos.	303	4565	520	476	500	500	2500	500
14.	(i) P.H.Cs	Nos.	15	17	16	17	17	1	22	18
	(ii) P.H.S.Cs	Nos.	27	100	62	72	72	10	120	82
15.	(i) Beneficiaries under special nutrition programme	Nos (ooo)	32	165	51	14	30	20	180	32
	(ii) Beneficiaries under mix day meal programme	Nos (ooo)	33	230	70	18	63	40	359	66
16.	(i) Enrolement in elementary education (6-14 years)	Nos (ooo)	46.09	78	59.68	66.41	78	74.24	82	77
	(ii) Enrolment under adult education	Nos (ooo)	16.43	80	40.63	11.89	18	14.14	75	15
	(iii) Enrolment under non-formal education	Nos (ooo)	-	20.20	-	-	21	13.28	20.10	25.85
17.	Fair Price shops	Nos.	-	-	1974	1000	20	18	100	20