# Approach to
# the 12<sup>th</sup> Five Year Plan
# Andhra Pradesh

**January, 2013**

**Approach to the 12<sup>th</sup> Five Year Plan of Andhra Pradesh**

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# Content

**Chapter**          **Title**

# 1. Overview

Andhra Pradesh (AP) is one of the relatively larger states in India. It accounts for 8.4% of India's total geographical area and 7.1% of population, and ranks fourth geographically and fifth - population wise among Indian states. The density of population at 308 per square km in the State is lower than the 382 per square km at all-India level. The Scheduled Castes and Scheduled Tribes account for 16.2% and 6.6% of the total population in the state respectively. Religious Minorities account for about one-tenth of the state population. Together, the population of disadvantaged castes and minority communities accounts for about one-third of the total state population. Of the total state population two third is Rural and one third Urban. Rural population in the State is predominantly agricultural with more than three fourths of its workforce being engaged directly in the agriculture sector.

Andhra Pradesh is the third largest economy in India in terms of Gross State Domestic Product GSDP (Data book for DCH, 2012). The state's economic growth path has been commendable especially during the last three decades. While starting from a relatively low per capita income, Andhra Pradesh managed to surpass the national average per capita income about a decade ago. While the state has registered impressive economic growth compared to its previous figures and in comparison to other States in rest of India, its overall development is judged as moderate. The performance of the Social Sector in Andhra Pradesh has been below potential.

Against this background, this approach paper analyses the performance of Andhra Pradesh in different sectors and makes an assessment of future prospects. This paper, based on analysis of past performance, current problems and interaction with various stakeholders, attempts to lay down the approach in terms of targets and strategies for key economic sectors for the 12$^{th}$ Five Year Plan (2012-17).

## 1.1 The Growth Experience

The growth experience of Andhra Pradesh in the recent past has been commendable. Compared to previous decades, the average growth rate of the state economy in the last decade's (2000-2010) is substantially higher. During last decade, 2002-2012, the economy grew at an average rate of 8.2%, with the average rate of growth reaching a high of 8.4% in the last two years. It is

noteworthy that the growth performance of the State was better than the national average during both the 10th and the 11th Plan particularly in agriculture and industry sectors[1].

The higher growth of GSDP and faster decline in rate of growth in population in the state further raised the level of per capita income in the State, to 10% higher than the national average per capita income.

There are however, within the State variations in the level of economic development across districts. For example, a comparison of the average per capita income during 2007-10 shows that Srikakulam and Mahaboobnagar are at the bottom and Hyderabad and Visakhapatnam at the top. The growth of per capita income of districts with low level of per capita income in the base year has shown a better improvement during the last decade. However, the inter-district variations as measured by co-efficient of variation indicates continuous increasing trend although at a slower pace in the recent past. The task ahead of 12th plan is to address these regional inequalities.

### *1.1.1 Growth Targets for the 12th Plan*

Given the track record of growth experience in the state, two alternative targets for economic growth have been explored for the Twelfth Plan. The first is set at 9%, below the target growth of 9.5% of the Eleventh Plan. The second is a higher, yet achievable target of 10% average growth for the Twelfth Plan.

A growth rate of 9% requires significant acceleration in growth in agriculture, mining, registered manufacturing, construction and in services. Agricultural growth has always been an important component for effecting inclusiveness. However, the task of providing additional jobs to the growing labour force rests on manufacturing, construction and services sectors. Higher overall growth target requires much faster growth in manufacturing, construction and services sectors, scaling up of investment as well as improvement in efficient use of resources.

### 1.2 Poverty and Inequality

The performance of Andhra Pradesh in reducing income poverty has been impressive, particularly in rural areas. Estimates based on NSS household consumption data indicate that poverty in AP has always been lower than the national average and also its pace of reduction is faster than that of all India. The poverty head count ratio declined from 44.6% to 29.6% during 1993-94 to 2004-05. There has been acceleration in the pace of reduction of poverty in the state especially between

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[1] This considers the advance estimates of GSD for 2011-12.

2004-05 and 2009-10. Estimates for 2009-10 indicate a further decline in poverty to 21.1% in the state from 29.6% in 2004-05 in AP while it fell to 29.8% from 37% at all India level during the same period. A noteworthy feature is that the faster rate of poverty reduction has led to a fall in absolute number of poor in the state. The total number of poor in the state has declined by nearly half from 15.39 million in 1993-94 to 17.66 million in 2009-10.

During 2004-05 to 2009-10, the inequalities in state increased marginally to 0.28 (from 0.27 in 2004-05) in rural areas and remained more or less stable in urban areas. In addition, the growth differential in rural and urban consumption has come down. These factors have contributed to rise in the elasticity of poverty for the state to nearly one. If the current elasticity and growth rate continue, the state has a good prospect of reducing poverty by another 8-10 percentage points by 2017.

**1.3 State Finances**

The dependency of the state government on borrowings results in the increase of outstanding public debt of the state. Since the state depends on market loans, there will be large repayment obligation from 2012-13 onwards due to Debt Swap Scheme. This will minimize the net-debt resources for financing the Plan. The state has to improve tax and non-tax revenue collections. Borrowing further would lead to higher interest payments and subsequently to a higher fiscal deficit/GSDP ratio. AP's fiscal deficit to GSDP ratio was 2.41% in 2007-08, 2.91 % in 2008-09 and has reached 2.86% by 2009-10.

The trend of both receipts and expenditure as a proportion of GSDP presented a good picture in the initial years of the 11th Plan period. In 2009-10, the proportion of uncollected revenue arrears constituted considerable proportion of receipts and expenditure causing loss to the exchequer, loss of interest on revenue that was not collected, and considerably restricted the capacity of government in budgetary allocation of resources. The state has to aim for additional tax resources to meet the larger plan size. Given the trends, the state should be able to raise its revenue resources from one lakh crores in the beginning of 12th plan to 1.80 lakh crores by the end of 12th plan.

**1.3.1 Plan Resources for the States: Some Issues**

The focus of the Twelfth Five Year Plan (TFYP) as articulated in the Approach Paper is faster, sustainable and more inclusive growth. There is an urgent need to realign resources in favour of

sectors, such as agriculture, education, skill development, provision of health services, welfare of weaker sections, etc., which form the core growth with social and economic inclusion.

The expenditure commitments of States have greatly increased because of several developments. Central enactments like right to education, food security and land acquisitions are likely to further increase the expenditure commitments of States. While the States are willing and prepared to play a crucial role in fulfilling the objective of faster, sustainable and inclusive growth they are constrained by the lack of resources at their command.

The share of **all** States' in plan outlays declined from over 63% in the First Plan period (1951-56) to less than 42% in the period covered by the Tenth Plan. For the Eleventh Plan, the share envisaged for the States is only 39%. The decline in the share of the States in plan outlays is mainly on account of the reduction in the gross budgetary support to State plans. In the original Tenth Plan, Centre's budgetary support to the Plan was distributed between the Central Plan and State Plan in the ratio of 58:42. The actual ratio turned out to be 66:34. For the Eleventh Plan, Centre's budgetary support to the State Plan is only 23 % of the total support for the Plan.

Another issue is the direct transfer of resources to the implementing agencies bypassing the States at the expense of accountability. In the 2011-12 Central Budget, an amount of Rs. 124605 crore is provided for direct transfer to implementing agencies bypassing the State governments. As observed by the Thirteenth Finance Commission, large amounts are lying unutilized in the bank accounts of a few implementing agencies. As a result the share of normal Central assistance to States has gradually come down to the present insignificant level of less than 20%.

Though a number of Committees have recommended reduction in the size and number of CSS, there has been no progress in this direction. For the Twelfth Plan, the number of CSS may be reduced and restricted to those schemes serving national objectives and the money thus saved may be passed on to States in the form of normal Central assistance.

## 1.4 Agriculture

The condition of agriculture in the State has improved considerably after a long period of stagnation in the mid-1990s to mid-2000s. Although global recession and drought effected agricultural growth in 2008-09 and 2009-10, the sector picked up considerably in 2010-11. The sector recorded an average growth rate of 6.12% pa during 2005-11. This performance provides

the basis for contemplating an average growth rate of 5-6 % during the 12th five year plan. There are wide fluctuations in the growth of crop and fisheries in the agricultural sector. While the livestock sector recorded a substantial growth the forestry and logging showed only a moderate improvement. There are considerable differences across the districts in their contribution to the GSDP from agriculture. The contribution of agriculture in about half of the districts is less than 4% each to the State GSDP.

With respect to crop sector there is a shift in the cropping pattern from food to non-food crops in the State. Rice, maize, groundnut and cotton are the important crops which occupy more than 60% of total gross cropped area in the State. However, spread of cotton farming in regions with light textured soils is a serious issue as it has resulted in unexpected crop failures and replacement of cotton with conventional crops such as jowar and castor. It is better that maize is confined to areas receiving good rainfall in kharif with medium to heavy soils and jowar encouraged in areas with less rainfall and in soils with less water holding capacity.

While the improvement in rice yield in recent period is welcome, the increase is however more due to expansion of area under this crop in coastal regions. There has been a significant improvement in the productivity of maize. The productivity of groundnut is subjected to fluctuations as it is grown in rain-fed areas. The productivity of cotton also has improved due to the introduction of hybrid varieties of cotton for irrigated lands. There are considerable variations in yield across districts within the state. The cost of production is relatively high in Andhra Pradesh compared to other States. The 12th Plan needs to address new seed technology and post-harvest issues to improve productivity.

Andhra Pradesh is the second largest producer of horticulture crops, which contributes 4 % to the GSDP. Horticulture covers an area of 25.59 lakh hectares in 2011-12 which accounts for 17.2 % of the total cropped area. It occupies 1/5 share of agriculture and allied crops economy of the State. There has been a perceptible change in the consumption pattern in the State which is witnessing a decline in the share of food grains and increase in the share of non-food grain items particularly fruits and vegetables.  A three tier approach is desirable for the development of horticulture sector viz., infrastructure at Producer Groups / SHG level in clusters of 20-30 villages; collection centers or aggregation centers for these clusters on need based; and development of food parks or central processing units with transportation facility.

Involvement of marginal and small farmers in crop diversification and food security are important aspects to be addressed for accelerating crop diversification in the state during the 12<sup>th</sup> Plan period. Research and Re-orientation in Agriculture needs towards reduction of cost of cultivation by increasing the productivity through HYV seeds, lesser usage of fertilizers and pesticide, less water utilization, change in farming methods, food products, export of Agro Foods.

Credit provides necessary liquidity and insurance provides command over resources to the farming community. Provision of banking facilities in un-banked and under banked areas, financial inclusion, SHG bank-linkage programmes, financing rural godowns and improvement of agricultural infrastructure are the thrust areas for 12<sup>th</sup> Five year Plan.

Livestock sector plays an important role in providing nutrition, food security and livelihood to the poor. Demand for livestock products is income elastic. Constraints in development of livestock sector are from the supply side. The livestock sector has grown at an annual rate of 6.1 % as against 6.4 % in the crop sector during the period 1999-2000 to 2010-11. The growth rate of the livestock sector is more stable than that of the crop sector. While all the three sub-sectors - milk, meat and eggs grew substantially during the 1990s, during the subsequent decade only the milk sector grew.  The State needs to concentrate on the milk sector in the next ten years as the per capita consumption of milk is not high and the productivity of milch animals is very low in the state. The proportion of CB cows is only 25.9% at present and can be raised to 60% in the next ten years. In the case of buffaloes, the graded percentage of buffaloes presently is 42% which can be raised to 60% in the next ten years through improvement in feeding.  While artificial insemination needs to be strengthened for raising the population of cows, for buffaloes, natural service can be proposed with quality bulls. Green fodder can be developed on common lands and fallow lands through convergence with NREGS. Emphasis is to be given in the 12<sup>th</sup> Plan period for such measures that are already under implementation in the State. Focus for the development of the meat sector has to be on districts where the density of small ruminants is already high..

Andhra Pradesh has a large inland market for fresh fish which contributes to about 35 % of the Indian fish export. In capture fishery, marine fishery is growing at a pace which is lesser than its potential. The growth of culture fishery is very important to maintain the overall future growth of fishery. The culture fishery can be divided into Fresh Water and Brackish Water Aquaculture. The state stands first in brackish and second in fresh water aquaculture. Krishna, East and West Godavari districts are the hub of fresh water fish farming. It is generally accepted that in culture

fisheries the yield gaps are significant in AP and need to be filled to realise its full potentials. To increase the potential of capture fisheries from marine sector, motorization of traditional crafts can be encouraged. It is only through supply of quality seeds and scientific practices that we can avoid outbreak of the diseases like white spot syndrome which cultured species of shrimp like *P.monodon,* encounter extensively. Setting up of hatcheries, brood stock developments, revival of ponds are other important means of improving the production and productivity of culture fisheries.

Andhra Pradesh is the fourth largest state in terms of geographical area and the second largest in terms of forest cover in the country. The actual forest and tree cover in the state is 63,814 sq. km, which is about 23.19 % of the state's geographical area and 7.1 % of the country's geographical area. Around 65 % of the forest area in AP is spread over eight predominantly tribal districts in the northern part of the state. Several tribes engage in cultivation in upland forests, called ***podu***.

Non Timber Forest Products - NTFPs are an important source of income not only for rural households but also for the State as it generates significant revenue. Bamboo, tendu leaves, mahua, and tamarind are the most important NTFPs. The NTFP supply chains are unduly long and primary collectors get only a fraction of the price paid by the end-consumers. The current product base is narrow and there is a need to look for other alternative uses of NTFPs to improve collectors' returns and reduce future uncertainty. The Girijan Co-operative Corporation (GCC) created to procure and market NTFP for tribal people has however, because of a shift in the government policy becomes more of a unit making profits for the GCC.

Between 1983 and 1991 a massive social forestry scheme was implemented throughout the state aimed at plantation of fast-growing wood species in private and village wastelands and woodlots, providing more resources for domestic access, and reducing strain on forests. Evidence suggests that farmers with small landholdings did not participate in these schemes, while farmers with bigger landholdings benefited the most. The Joint Forest Management (JFM) was implemented by the Government of AP in 1992, in which all the fringe forest villagers were made partners in forest management with legal entitlement to the usufructs. The AP Government modified the JFM to Community Forest Management (CFM), promulgated in 2002. About 24,000 hectares of forest land under encroachment has been rejuvenated through the VSS. This project was heavily criticized by the Adivasi and support organisations for causing compulsory evictions of Adivasi

families, who lost their shifting cultivation fields to the FD and suffered severe restrictions on their use of the forest. The State of Andhra Pradesh envisages a limited role for Panchayati Raj Institutions (PRIs) in forestry. Though the state has adopted the Panchayat Extension to Scheduled Areas Act (PESA), the enabling rules, which are mandatory for exercising this power, have come into effect only very recently. The role of GCC Ltd., Vishakhapatnam for example to act as the sole agent for the purpose of purchase and trade of NTFP on behalf of the government is contradictory to provisions of PESA, which vests the control of NTFP with Grama Sabha in preference to any other institution/organization. It is important to create an enabling environment and enhance PRIs' regulatory powers and capacity for devolution of powers to be meaningful. The conflict between the role of PRIs and Forest Protection Committees created under the JFM programme is an important issue that needs to be resolved. Forest Right Act – 2006 which became operational in AP from 2008 is a long awaited reform that attempts to correct historical injustice done to the forest dependent communities, confer both individual and community rights on these communities..

**1.5 Industry**

The performance of industry during the four years of the 11th Plan has been slow with the exception of the electricity-gas-water supply. Construction sector is maintaining a steady growth of 9.95 %. The mining and quarrying sector experienced a huge slump during this period. Manufacturing sector which contributes 50 % of SDP from industry and 10 % to the GSDP is growing at 8 % against the targeted growth of 10-11 %.

The structure of registered manufacturing sector has not changed much in the State between 1998-99 and 2006-07. Food, tobacco products, minerals and metals, textiles, chemicals and manufacture of equipment are important industry groups in terms of their contribution to number of units, net value added, fixed capital and number of employees. Though half of the industrial units are agriculture based, non-agro based industries account for 80.3 % of net value added and 70.9 % of fixed capital during 2007-08. This is because of the existence of large scale public sector units in the State.  The net value added per worker in non-agro based industries is three times higher than that of agro-based sectors.

Though exports from agro & forest based and marine industries grew at 9.4 % during the last decade, their share in the total value of exports is gradually declining. In 2010-11, IT industry contributed 38% to the total exports, followed by the Engineering items. IT, drugs-

pharmaceuticals, chemicals and engineering goods have shown progress both in their growth rate of exports and their shares in total exports. The State should increase the volume of exports and create local market by producing manufacturing goods at economical costs and quality that can compete with imports.

To achieve the given target of 10.5 % for the industry during the 12<sup>th</sup> Five Year Plan, there should be special focus for development of Micro, small, medium enterprises (MSME) in the state by providing a number of incentives. Importance is to be given to the development of Clusters as they enhance the productivity of MSMEs. During 1995-2009, the number of micro and small units has grown at a compounded annual growth rate of 2.4 %, while fixed investment grew at a rate of 14.2 % and employment grew at a compounded growth rate of 3.2 %. More number of units is found in food processing, beverages and tobacco products. These units occupy highest share of investment and also provide the highest share of employment.

The drivers of growth in manufacturing sector are textiles, drugs and pharmaceuticals, engineering goods, food processing, minerals and metals, chemicals and fertilizers, paper and bio-technology.

Land and infrastructure are major constraints that entrepreneurs face. Better infrastructure facilities can also be provided through public-private partnerships. Incentives should be directed towards SSI/SME units which might take the form of subsidy on capital equipment, exemption from VAT, land at cheaper rates, power subsidy and provision for R&D support. Basic infrastructure has to be developed in Tier II & III cities and towns for ensuring balanced development and to avoid congestion in major cities/towns. Since currently most of the growth oriented industry is concentrated in and around metropolitan cities such as Hyderabad, Visakhapatnam and Vijayawada, policy thrust should focus on developing industries in rural areas. Further, the policy makers should aim at attracting global investment in setting up of large industrial enterprises in Andhra Pradesh so that ancillary industries can be developed. Another important issue that can be probed for developing the manufacturing sector in AP is to make use of the natural gas resources that are available in abundance in the State. A State grid is formed by connecting trunk pipelines through spur pipelines and proposes to cover industrial parks, major industries and cities.

Government of Andhra Pradesh came up with a policy framework for special economic zones (SEZ) in 2002. The state stands first among other developed States in terms of the number SEZs it

has. Out of total 75 notified SEZs in the state, 27 are in operational and have created 10 % of the targeted employment of 8.5 lakhs. The state is contributing almost 100 % of exports from Trading SEZs in the country. However, issues such as forcible acquisition of multiple cropping lands, rehabilitation and resettlement have to be taken into consideration while pushing through the SEZ policy.

Information Communication Technology (ICT) has been performing consistently well in the last two decades in the State. Andhra Pradesh is placed 4th in the country in ICT having a share of 13.9 % of national IT exports. There is further scope to expand its exports to other Asia-Pacific countries. However, the ICT sector is heavily concentrated around Hyderabad city and unable to move to tier II and tier III cities.


## 1.6 Energy and Transport

Energy requirement in any development process is phenomenal and the availability of technologies for developing different sources of energy makes the difference in the development process of any State or country. . The challenge of the energy sector is meeting the growing energy demands of the state.


After the power sector reforms the performance of electricity/power sector in Andhra Pradesh has emerged as one of the best in India. Andhra Pradesh is one of the States with the highest installed capacity of power generation. Most of the villages/hamlets in the state are electrified and more than 90% households in the state have electricity connection. However, there is a substantial gap between demand and supply. In rural areas, the number of hours power is supplied is lesser than the number of hours without power supply – power-cuts are norm of the day in rural areas. this is impacting the growth and development of rural industry as all the tiny, small and large scale industries are located in rural areas.


Transport, is considered a lifeline that inter-links different geographical locations and economic and business activities and facilitates mobility of people, goods and services. In Andhra Pradesh there has been a phenomenal growth of transportation network during the last five decades with most growth unfolding during the last two decades. However, it is a matter of concern that available road and rail network are not substantial enough to meet the growth requirements of the State economy. Infrastructure investment is mostly concentrated in and around urban growth centers. Many villages in rural Andhra Pradesh still do not have access to pucca road network. The growth of rural economy (including agriculture and industrial activities) is constrained by

inadequate road network and transportation facilities. Even in urban areas, urban congestion due to lack of adequate public transportation, repairs and maintenance of existing road network are issues of major concern. Another major problem is overlapping of public institutions/agencies involved in laying roads and their maintenance. As regards the rail network, there are many proposed/planned railway lines which are yet to take-off. In spite of having a long coastline, AP has not utilized it properly unlike Gujarat. Gujarat which has a shorter coastline compared to Andhra Pradesh, has made impressive gains in terms of the number of ports and the kinds of port based economic activities that it has generated.

**1.7 Health**

While the performance Andhra Pradesh in health indicators has improved compared to its previous position, the State fares badly compared to the other states, especially other Southern Indian states. Infant mortality rate in AP in 2010 is 46 compared to 47 at all-India level. According to 2007-09 figures, the maternal mortality rate of AP is 134 compared to the 212 at all-India level. Total fertility rate in the State is 1.79 and 2.5 for the country as a whole (2007-09). One third of the child population in the State is malnourished compared to the 40% malnourished child population at the national level. The performance of the State in full vaccination and safe deliveries at 95.6% is much better compared to the all-India rate of 68 % .However, compared to other major states in India, Andhra Pradesh performance is lagging behind in some of these health parameters. For instance, with respect to infant mortality rate, Andhra Pradesh is still a part of the middle range category in India.

The major constraint in health sector is the public health care facilities and infrastructure especially in rural Andhra Pradesh. Although each Mandal head quarter has a Public Health Centre - PHC, inadequate infrastructure and human resources to man and the poor functioning of these facilities is a cause of concern. The National Rural Health Mission (NRHM) launched in 2005 aimed at strengthening the healthcare infrastructure in rural areas. The Government of India has set seven measurable targets in public heath for the Eleventh Plan. These targets are (i) Infant Mortality Rate (IMR), (ii) Maternal Mortality Ratio (MMR), (iii) Total Fertility Rate (TFR); (iv) Under-nutrition among children, (v) Anaemia among women and girls, (vi) Provision of clean drinking water for all; and (vii) Raising child sex ratio for the age group 0-6 years.

Arogyasri and Emergency and Medical Services (108 Services) are two important initiatives in the health sector in Andhra Pradesh. Arogyasri is a health insurance scheme meant for mitigating

catastrophic health expenditure at the households especially for the poor. The 108 EMS is a service that helps in getting emergency medical care. These initiatives are definitely helpful in improving the health care of state population.

**1.8 Education and Skill Development**

Thanks to the implementation of District Primary Education Programme (DPEP) and the Sarva Shiksha Abhiyan (SSA) Andhra Pradesh has made significant inroads in school education in the last two decades. The state has shrugged off its history of low school attendance and high incidence of child labour and emerged as one of the better performing states in education of children in the last 2 decades. In the 5-14 year category, while the state has achieved 95% attendance, there are still 5% children out of schools. School attendance and Gross / Net enrolments at the Secondary School levels are low – not more than two thirds of the child population in that category. The state is committed to the goal of achieving universalisation of secondary education under Rashtriya Madhyamik Siksha Abhiyan (RMSA). Moreover, the quality of schooling at Elementary and Secondary School levels is a cause of serious concern. Even in Higher Education, while there has been a significant quantitative expansion, the quality of education calls for serious attention

Despite impressive strides in Elementary and Higher education, AP has the largest number of adult illiterates – amounting to almost two thirds of its population. As low literacy is considered as one of the key factors responsible for the low human development ranking of the State compared to other States, adult literacy becomes an important issue of concern.

Illiteracy and absence of formal education is affecting the quality of labour force and pushes the workforce into elementary occupations such as agricultural and allied sectors which require no specialised skills. Improving the quality of the labour force through appropriate education and skill development initiatives is an urgent policy concern.

**1.9 Welfare of Socially Disadvantaged Sections**

The social groups such as SCs, STs, OBCs and Minorities have historically been disadvantaged, vulnerable and marginalized in the development process. While there has been a progress in the development of these communities compared to their previous situation, they are yet to attain equity with the mainstream society on most of the development indicator.

In Elementary education, the existing pre and post matric scholarship needs to be revised so that more families can send their children to schools. Government can reimburse the total fee charged by private institutions. Special care should be taken in appointing teachers to schools located in Tribal regions as these appointed teachers are unable to understand and communicate in the dialect of ST children.

Land distribution assumes significance as a key factor for improving the condition of SCs & STs as land is the main source of livelihood in rural areas where 82 %age of the SC population live. , Large numbers of SCs still depend on agriculture as wage labourers and steeped in poverty. The 12$^{th}$ plan can focus on providing better agricultural wages to sustain SCs &STs through existing NREGA.

Efforts are to be made to monitor implementation of various government programmes under the Scheduled Caste Sub Plan – SCSP for ensuring effective and meaningful implementation of SCSP. Budgetary allocation to SCSP is to be according to population ratio of the community. The allocated budget must be spent on marginalized sections of SC and ST. The allocated budget should not be diverted to other developmental activities.

In economic and occupational terms, the backward classes comprise peasants, landless labourers, artisanal communities such as handloom weavers, carpenters, metal workers, stone cutters and fishermen, and those who provide various traditional services. The plight of these categories of the backward classes has worsened in recent years due to extensive mechanization and market competition. There is a need to ensure up-gradation of skills of such categories of workers so that they can compete better in the market.

**1.10 Urban Challenges**

According to the latest 2011 Census about one-third population in Andhra Pradesh is located in urban topography. Although urbanisation is considered as an indicator of development, the pattern of urbanization shows a disturbing trend. Unless precautionary measures are taken rapid urbanization increases the pressure on urban infrastructure and civic amenities and creates environmental problems. Most of the urban population in the state is getting concentrated in its three large cities of Hyderabad, Visakhpatnam and Vijayawada. Lack of physical infrastructure and other civic amenities in the small and medium towns is leading to movement of people from these towns to large cities. As a result many of the small and medium towns in the state are

getting declassified. The recent 2011 Census shows that the number of statutory and Census towns have increased over the previous 2001 Census indicating an increased burden on urban development authorities in terms of allocation of resources and provision of infrastructure and civic amenities in these emerging urban centers.

## 1.11 Governance

Andhra Pradesh has emerged as a testing ground for initiation of participatory institutions in governance like, Self-Help Women's groups, Water User Associations, Watershed Committees, School Education Committees, mother's committees, *Rytu Mitra Groups (*farmers' clubs), and *vana samrakshana samitis* VSS under Joint Forest Management - JFM. The JFM committees in Andhra Pradesh successfully targeted remote and under-served communities like tribal populations. Although there have been tensions between these participatory institutions and Panchayati Raj institutions (PRIs) these user bodies have been able bring in appreciable improvements and speedup developmental activities.

However, still AP is one of the 'decentralization deficit' states in the country. There is thus a strong need to improve Implementation, Accountability, and Service Delivery and through greater devolution and empowerment through local bodies.

## 1.12 Prospects for the 12<sup>th</sup> Plan

The growth prospects for Andhra Pradesh are promising given the trend of last decade. Growth of agriculture sector which is dependent on weather conditions and natural calamities is a pre-condition for overall economic growth of the state economy. For industrial growth, although an industry-friendly policy environment has been created, gaps in infrastructure, roads and transportation, power, access to finance are still important impediments hindering faster industrial growth in the state.

In the social sector, on the educational front the state can attain universalisation of school education (elementary and secondary education) if rigorously effort are made. The state's achievement in higher education is also improving but the quality of education is a matter of concern. In health sector, although the state's performance is remarkable in family planning that made AP a state with one of the least fertility rate in India and faster demographic transition, its performance in other health parameters such as infant mortality and malnutrition is lagging behind. Given the challenges in the health sector a lot needs to be done in the 12<sup>th</sup> Plan. Similarly

other Social Sector issues like drinking water, urban development, development of disadvantaged castes and minority communities are key challenges to be addressed in the 12<sup>th</sup> plan period.  .

# 2. Macroeconomic Scenario

Andhra Pradesh has earned itself a name as one of the pioneers in initiating economic reforms and has raised expectations nationally and internationally. Ap was one of the early adopters of the Green Revolution, especially in rice, considered the main crop in the state. The State has been vigorously pursuing economic reforms since the mid-1990s to step up economic growth and alleviate poverty. Apart from its notable performance in the Information Technology (IT) which has made AP one of the leading states in the country, significant strides have been made in the areas of Self-Help Groups, participatory managements of infrastructure, resources like water, land and forests. Economic growth in the State has been accelerating at a fast pace, going up from a relatively low per capita income range state to becoming a state that has surpassed the national average per capita income.

## 2.1 Growth of the Economy

Gross State Domestic Product (GSDP) of Andhra Pradesh grew at an average rate of 8.2% per annum during the last decade (2002-2012) (Table 2.1.1). As shown in the table below all the three major sectors - Agriculture, Industry and Services – recorded strong improvements. The Agricultural sector grew at 4.6%, while industry and service sectors grew at 9.5% and 9.3% respectively during this period. AP's economic growth has been impressive particularly since 2003-04. The average growth rate of the GSDP in the 10th Plan was 8.1% as against the national average of 7.6%. However, global recession and drought has brought down the GSDP growth from 12.0% in 2007-08 to about 6.9% in 2008-9 and to 6.0% in 2009-10.

**Table 2.1.1: Growth in Real Gross Domestic Product of Andhra Pradesh and All India by Major Sectors**

| Period | Andhra Pradesh | | | | All India | | | |
|---|---|---|---|---|---|---|---|---|
| | AGRI | IND | SER | GSDP | AGRI | IND | SER | GDP |
| 2000-01 | 12.7 | 2.9 | 7.6 | 7.9 | 0.0 | 6.0 | 5.1 | 4.1 |
| 2001-02 | -1.7 | 4.5 | 7.4 | 4.1 | 6.0 | 2.6 | 6.6 | 5.4 |
| 2002-03 | -7.2 | 8.2 | 6.1 | 2.9 | -6.6 | 7.2 | 6.7 | 3.9 |
| 2003-04 | 14.3 | 6.1 | 7.8 | 9.0 | 9.0 | 7.3 | 7.9 | 8.0 |
| 2004-05 | 4.2 | 12.3 | 7.9 | 8.0 | 0.2 | 9.8 | 8.3 | 7.1 |
| 2005-06 | 6.1 | 10.1 | 11.0 | 9.6 | 5.1 | 9.7 | 10.9 | 9.5 |
| 2006-07 | 2.0 | 17.6 | 12.5 | 11.2 | 4.2 | 12.2 | 10.1 | 9.6 |
| 2007-08 | 17.4 | 10.9 | 10.3 | 12.0 | 5.8 | 9.7 | 10.3 | 9.3 |
| 2008-09 (R) | 0.8 | 7.1 | 9.5 | 6.9 | 0.1 | 4.4 | 10.0 | 6.7 |
| 2009-10 (P) | 1.3 | 6.4 | 7.7 | 6.0 | 1.0 | 8.4 | 10.5 | 8.4 |
| 2010-11 (Q) | 9.0 | 9.2 | 10.7 | 10.0 | 7.0 | 7.2 | 9.3 | 8.4 |
| 2011-12 (A) | -1.5 | 7.3 | 9.8 | 6.8 | 2.5 | 3.9 | 9.4 | 6.9 |
| 10th Plan (2002-07) Average | 3.9 | 10.9 | 9.1 | 8.1 | 2.4 | 9.2 | 8.8 | 7.6 |
| 11th Plan (2007-12) Average | 5.4 | 8.2 | 9.6 | 8.3 | 3.3 | 6.7 | 9.9 | 7.9 |
| Decadal Average (2002-2012) | 4.6 | 9.5 | 9.3 | 8.2 | 2.8 | 8.0 | 9.3 | 7.8 |

**Source**: Publications of Central Statistical Office, Govt. India and Directorate of Economics Statistics, Govt. of AP.

Industrial growth rate in AP which was 7.1% in 2008-09, further declined to 6.4% in the following year. Agricultural income grew at only 0.8% during 2008-09 and showed an improvement in the following two years. Although the economy appeared to have recovered during 2010-2011, it again slowed down during 2011-12, the last year of the 11th Plan period. Agriculture particularly has shown negative growth due to unfavorable weather conditions, floods and drought in 2011-12. As a result Andhra Pradesh economy could attain an average growth rate of only 8.3% during the 11th Plan period which is marginally higher than that achieved during the 10th Plan. It is noteworthy that the state growth performance was better than that of national average during both the 10th and the 11th Plan particularly in agriculture and industry sectors.

**Table 2.1.2: Coefficient of Variation (CV) in the Annual Overall and Sectoral Growth Rates in Andhra Pradesh and India**

| Period | Andhra Pradesh | | | | All India | | | |
|---|---|---|---|---|---|---|---|---|
| | Agriculture | Industry | Services | GDP | Agriculture | Industry | Services | GDP |
| 1981-1990 | 315.3 | 58.5 | 52.8 | 102.0 | 154.9 | 39.3 | 17.0 | 39.1 |
| 1991-2000 | 432.3 | 102.1 | 31.7 | 80.8 | 123.8 | 54.2 | 27.2 | 31.8 |
| 2001-2012 | 154.1 | 45.5 | 20.8 | 34.6 | 147.5 | 37.9 | 21.0 | 27.1 |

**Note:** CV indicates average variability around the mean of a variable over time or regions.
**Source**: Computed.

Looking at the long term behavior of state GSDP, there have been large year to year fluctuations in the growth of state income similar to that other states and all-India level. The coefficient variation (CV) in the sectoral and overall growth rates over the last three decades indicates higher volatility in the state than the country as a whole (Table 2.1.2). However, a welcome indication is that such fluctuations in the growth rates - sectoral as well as overall- have sharply declined over the years. In particular, negative GSDP growth rate, which occurred almost twice in every decades till 1980s, has been absent after 1997-98 (Fig 2.1.1).

**Figure 2.1.1: Annual Growth Rates of GSDP of Andhra Pradesh**
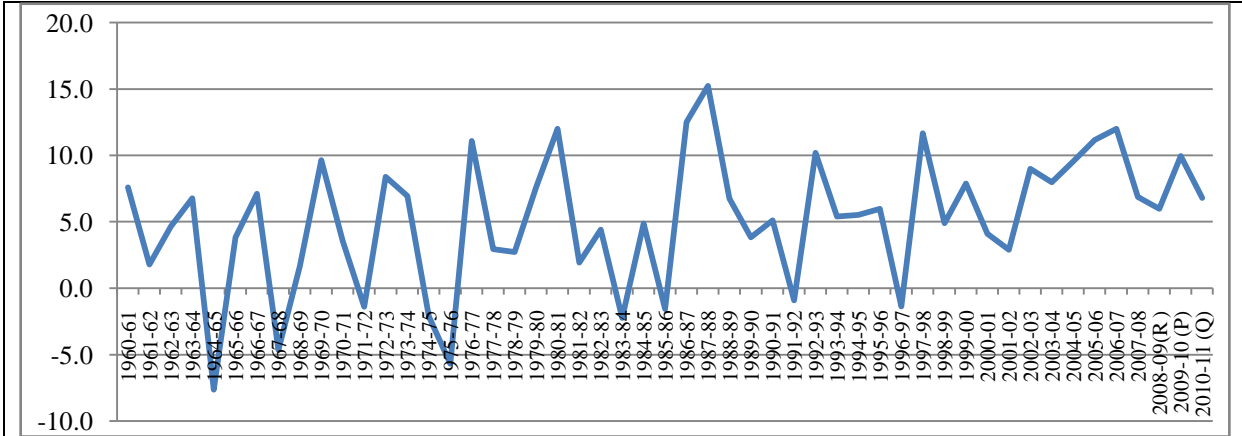


Source: Computed and Derived.

This development may be attributed to: (a) the falling share of agriculture and (b) resilience developed in the agricultural sector due to larger area under irrigation c) reform measures undertaken to realize the growth potential in the industry and service sectors. Reduction in volatility in annual income is needed for steady high growth.

### 2.1.1 Per Capita Income

The per capita income in the state has remained somewhat higher than the national average since 2000-01. The per capita GSDP steadily rose during the last two plan periods and reached Rs. 47950 by the terminal year of the Eleventh Plan, 2011-12. The ratio of the state per capita GSDP to the national average, fluctuated during the late 1990s and early 2000s and the state per capita income was 1% to 3% higher than the national average till 2003-04. The ratio rose further in subsequent years to reach 10% more than national average in 2008-09. It than declined to 8% in 2009-10 but rose again to reach 11% in the following years (Figure 2.1.2).

**Figure 2.1.2: Per Capita GSDP of Andhra Pradesh as a %age of All-India Per Capita GDP - at Constant 2004-05 prices**
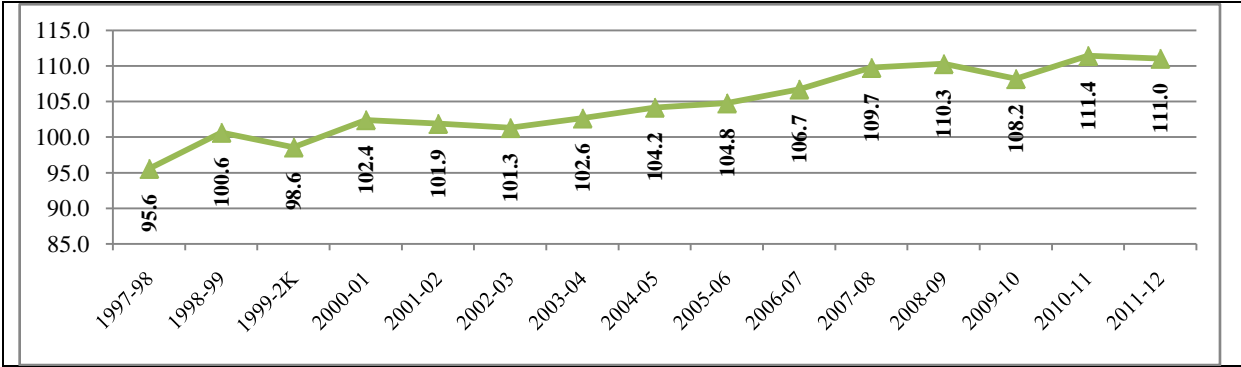


**Note**: At Constant (2004-05) Prices.
**Source**: DES.

It may be noted that this improvement in the performance of AP in terms of per capita GSDP in relation to the all India average is due to the acceleration in the aggregate GSDP growth as well as faster deceleration in the population growth experienced by the state in recent years.

### 2.1.2 Inter-District Variations

As in other parts of India, there exist substantial variations in the levels of development across districts of Andhra Pradesh. Figure 2.1.3 shows the districts arranged by average per capita income during 2007-10. Srikakulam and Mahabubnagar were at the bottom by per capita income while Hyderabad and Visakhapatnam were at the top during this period.

**Figure 2.1.3: Average Per Capita Income across districts during 2007-10 arranged in ascending order and exponential growth rates during 1993-2000 and 2001-09**
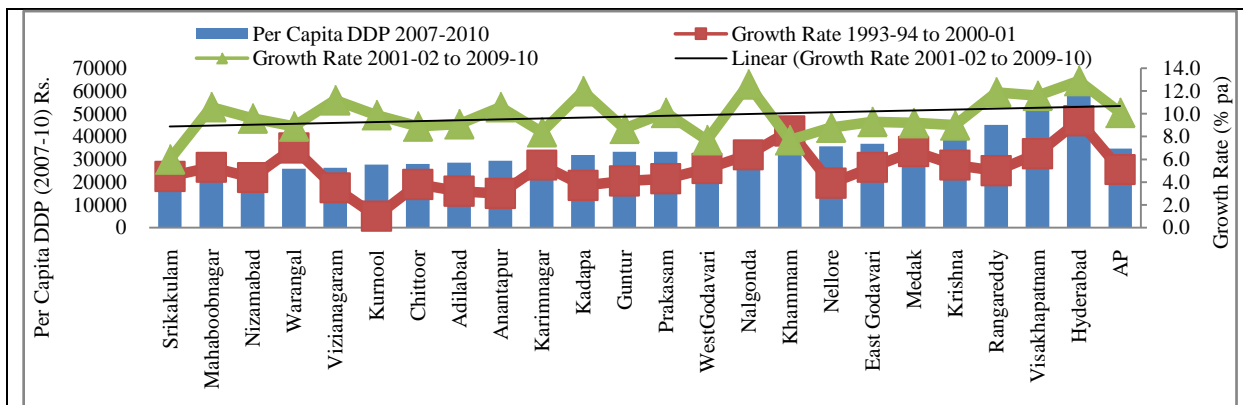


**Note**: Per capita DDP is three year average.

**Source**: DES.

Figure 2.1.3 also shows the growth rates recorded by various districts from 1993-94 to 2000-01 and 2001-02 to 2009-10. Hyderabad district and Visakhapatnam districts have grown at a high rate for both the periods. Nalgonda and Kadapa recorded the highest growth at 12.6% and 12.0% per annum respectively during 2001-09. A notable feature is that the district of Kurnool which was at the bottom during 1993-2000 in terms of growth rate recorded one of the highest the growth rate of 10 % during 2001-09.

**Figure 2.1.4: Co-efficient of Variation (CV) in Per Capita DDP**
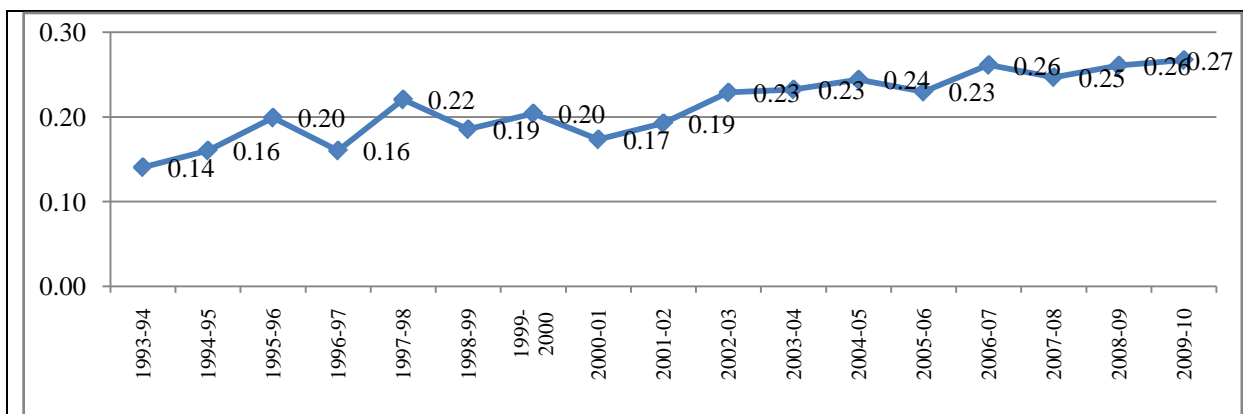


**Note**: CV of per capita DDPs across Districts.

**Source**: Based on DES.

Movement in the coefficient of variation (CV) in per capita income across districts is given in Figure 2.1.4. It indicates that inter-district inequality as revealed by the CV in per capita income grew from about 0.14 to about 0.23 during 1993-2006 but has nearly remained constant around 26% since then.

**Figure 2.1.5: Index of Per Capita Income (DDP) of by Regions in Andhra Pradesh with State average = 100**



**Note**: South Coastal in decreasing trend since 2002-03
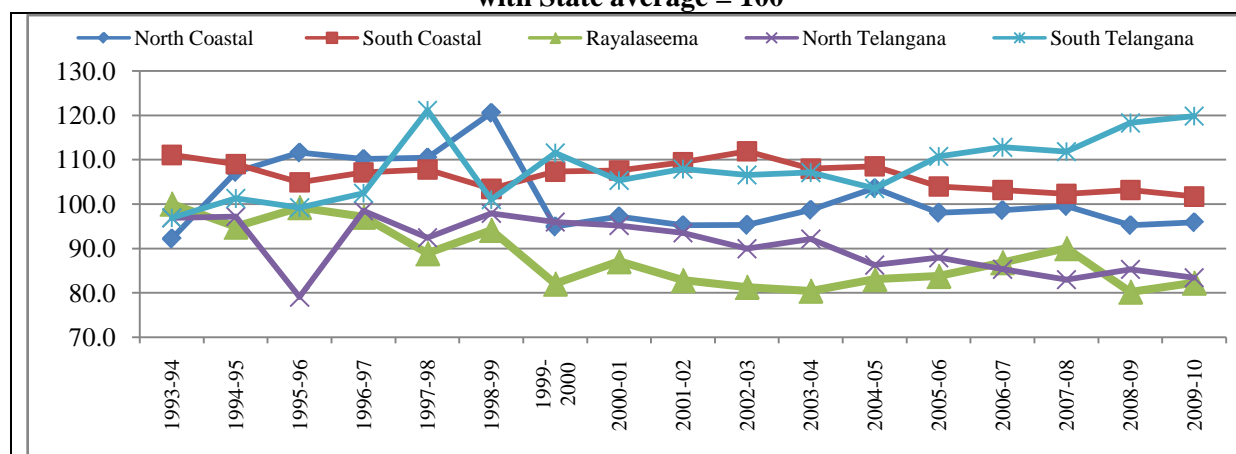
   Rayalseema down trend continuously

   North Coastal down since 2004-05

   North Telangana down since 1996-97

   South Telangana increasing since 2004-05

**Source**: Computed.

Figure 2.1.5 presents per capita income of five different regions expressed as a ratio to the state per capita income. These trends indicate that the per capita income in South Coastal region has consistently remained above state avearge, though the difference has been falling since 2005-06. There was sharp improvement the in the performance of North Coastal region realtive to state average during the nineties, but subsequently the ratio fell back to below 100 and remained more or less stable. South Telangana region has consistently performed better in terms of average income compared to state average with an accelerating differential. On the other hand, per capita income of North Telangana and Rayalseema regions have been below the state avearge.

## 2.2 Employment

An embedded objective of economic development is to provide people opportunities for meaningful employment. Andhra Pradesh is one of those Indian states which are having the highest (around 53%) work participation rate (WPR) duly contributed by higher female work participation in the State. The female work participation rate (36.8%) in the State is the second highest among the major Indian States and next only to Himachal Pradesh. Around half of the population in Andhra Pradesh is found to be working in one or the other economically gainful activity. Of the 83.6 million population estimated in the state for the year 2009-10, 39.8 million

are in the workforce. Around one-fourth of the total workforce in the state is located in rural Andhra Pradesh.

**Table 2.2.1: Work Participation Rate (WPR) in Andhra Pradesh and India by Gender and Location**

| Year | Andhra Pradesh | | | | | All-India | | | | |
|------|------|------|--------|-------|-------|-------|------|--------|-------|-------|
| | Total | Male | Female | Rural | Urban | Total | Male | Female | Rural | Urban |
| *1* | *2* | *3* | *4* | *5* | *6* | *7* | *8* | *9* | *10* | *11* |
| 1993-94 | 52.0 | 60.8 | 43.3 | 57.6 | 37.5 | 42.0 | 54.5 | 28.6 | 44.4 | 34.7 |
| 2004-05 | 50.2 | 59.3 | 41.3 | 54.4 | 39.2 | 42.0 | 54.7 | 28.7 | 43.9 | 36.5 |
| 2009-10 | 47.6 | 58.2 | 36.8 | 52.1 | 36.4 | 39.2 | 54.6 | 22.8 | 40.8 | 35.0 |

**Note**: 1. WPR – %age of working population to the total population; 2. Figures presented are in %ages; 3. Usual Status - Principal and Subsidiary Status.

**Source**: NSS Employment and Unemployment Surveys.

However, a cause of the concern is the declining WPR and decline in growth of employment. The decline in female WPR is significantly higher than that of males. The growth of employment during 2004-05 and 2009-10 turned out to be negative (Table 2.2.2). The fact that the employment growth in the State turned negative when the State economy is on a high growth path raises policy concerns.

Three explanations can be given for this turn of events. Firstly, the demographic transition and consequent declining growth of population in the state will act as a limiting factor for the growth of labour force unless the WPR increases.

**Table 2.2.2: Growth and Elasticity of Employment in Andhra Pradesh and in India**

| Sno | Period | Growth (%) | | | | Elasticity of Employment (EE) | |
|-----|--------|------------|------|------|------|------|------|
| | | *Employment* | | *GSDP* | | AP | India |
| | | AP | India | AP | India | AP | India |
| *1* | *2* | *3* | *4* | *5* | *6* | *7* | *8* |
| 6 | 1993-94 to 1999-2000 | 0.37 | 1.02 | 5.30 | 6.51 | 0.070 | 0.156 |
| 8 | 1999-2000 to 2004-05 | 1.62 | 2.87 | 4.73 | 5.98 | 0.343 | 0.479 |
| 9 | 2004-05 to 2009-10 | -0.01 | 0.25 | 10.36 | 8.51 | -0.001 | 0.029 |

**Note**: **1**. Based on Usual Status (Principal and Subsidiary Status) of employment; **2**. Growth is CAGR for both the Employment and GSDP or GDP; **3**. EE – Elasticity of Employment with respect to Growth of GSDP; **4**. GDP or GSDP are at Constant (1999-2000) prices.

**Source**: Computed based on NSS data for Employment and CSO for GSDP/GDP.

Secondly, the decline in overall WPR in the state is associated with the decline in work participation rates across age group especially that of younger age group owing to increasing focus on schooling and policy measures to eliminate child labour. In Andhra Pradesh incidence of child labour was significantly high prior to 1990s and has shown a dramatic fall during the 1990s

and thereafter. Correspondingly there is rapid growth in school attendance rate in this age group. The decline in work participation rate is not only in the 5-14 years age group but also among teenagers (15-19 years age group) and young adults (20-29 age group) mostly due to increasing demand for education in these groups (Figure 2.2.1).

**Figure 2.2.1: Change in Work Participation Rate and School Attendance Rate across Age Groups in Andhra Pradesh**
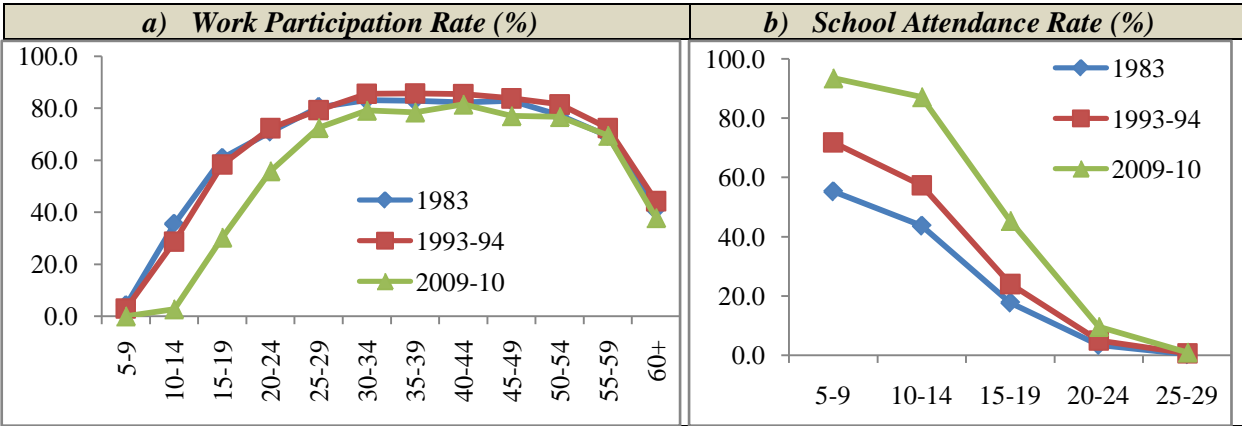


**Note**:

**Source**: NSS Employment and Unemployment Survey units record data.

Thirdly the decline in WPR of above 29 years age group is mostly due to decline in female WPR in this age group. Reasons for decline in female WPR in the adult age groups have to be explored.

**Figure 2.2.2: Changing Distribution of Workforce between Agriculture and Non-Agriculture Activities in Andhra Pradesh and India**
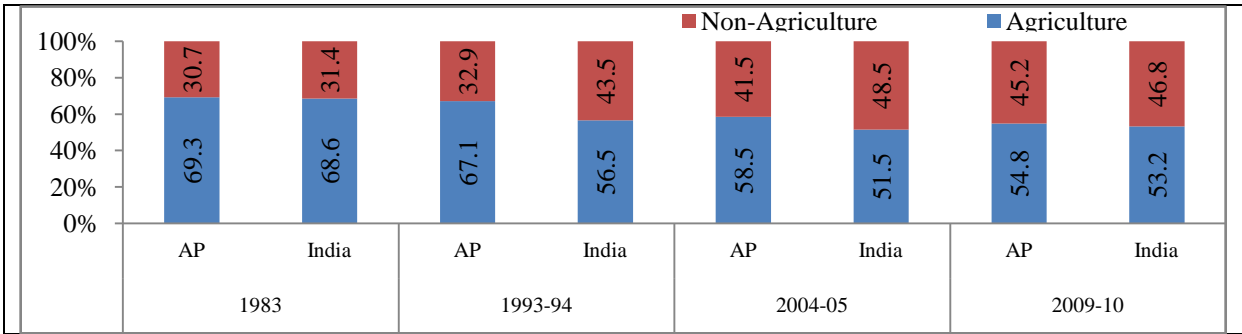


**Note**: Usual Status – Principal and Subsidiary.

**Source**: NSS Employment and Unemployment Surveys.

Another concern is structure of employment. While the share of agriculture in GDP has been falling sharply (below 15% at national average and below 20% in Andhra Pradesh), the decline in the share of employment has been very slow (still above 55%). The performance of the state in

terms of change in the structure of employment during 1980s is impressive. Nevertheless the share of and rate of increase in the non-agricultural workforce in the state was relatively lower than that of the national average (Figure 2.2.2).

**Table 2.2.3: Growth of Employment in Andhra Pradesh by Sectors**

| Sectors | Growth of Workforce (%) | | | Employment Elasticity | | |
|---|---|---|---|---|---|---|
| | 1983-94 | 1994-2005 | 2005-10 | 1983-94 | 1993-2005 | 2004-10 |
| *1* | *2* | *3* | *4* | *5* | *6* | *7* |
| *Agriculture* | *2.28* | *-0.37* | *-1.32* | *0.936* | *-0.122* | *-0.248* |
| *Non-Agriculture* | *3.08* | *3.22* | *0.47* | *0.417* | *0.464* | *0.046* |
| Mining and Quarrying | 6.34 | 3.33 | -6.26 | 0.737 | 0.453 | -0.671 |
| Manufacturing | 1.57 | 2.56 | 1.35 | 0.161 | 0.440 | 0.139 |
| Electricity, Water & Gas | 8.64 | -4.84 | 10.49 | 0.814 | -0.879 | 3.522 |
| Construction | 6.05 | 5.21 | 11.90 | 1.883 | 0.575 | 0.845 |
| Trade | 3.46 | 4.21 | -0.74 | 0.433 | 0.667 | -0.076 |
| Transport & Communication | 2.20 | 6.47 | 1.12 | 0.285 | 0.766 | 0.095 |
| Banking & Finance | 6.48 | 7.09 | 7.94 | 1.094 | 0.961 | 0.629 |
| Pub Admn & Community Services | 3.30 | 0.64 | -1.94 | 0.436 | 0.097 | -0.296 |
| *All* | *2.53* | *0.94* | *-0.01* | *0.467* | *0.162* | *-0.001* |

**Note**: Employment Elasticity is sector specific one and with respect to sector specific GSDP of the state.

**Source**: Computed based on NSSO data for Employment and DES data for GSDP.

The performance of sub-sectors in terms of sector specific growth of workforce has shown a negative growth in agriculture. As a matter of fact Andhra Pradesh is the only major Indian state that has experienced such a situation. In non-agricultural sector growth of employment was 3.2% per annum between 1993-94 and 2004-05 but thereafter declined to 0.47% per annum between 2004-05 and 2009-10 (Table 2.2.3).

Therefore the policy concern is declining workforce especially the female workforce engaged in different economic activities. Another major concern is the illiteracy and low levels of education among the population as well as the workforce. There is a large number of illiterate adult work force in the state. Ultimately it all boils down to the quality and productivity of employment in the state. Andhra Pradesh is observed to be performing moderately among the Indian states in terms of productivity of employment either in agriculture or non-agriculture sectors. Most of the workforce of the state is engaged in those activities which do not require any specific skills. Moreover a large part of the workforce is engaged in informal sector. According to NCEUS[2], about 95% of the total workforce in India as well as in Andhra Pradesh is informal in nature of employment. The workforce engaged in this sector works without any employment security or social security.

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[2] National Commission on Enterprises in Unorganised Sector, Government of India.

All these aspects will continue to be major issues of concern for policy makers. In this respect, the best approach towards 12th Plan is to adapt necessary policy measures such as improving skill development of illiterate and semiliterate workforce and initiating social security benefits to workforce in informal sector. Moreover generating employment opportunities especially for women who it is observed seem to be withdrawing from the labour force especially from agriculture and are unable to find opportunities in non-agriculture sector, is a task ahead for the 12th Five Year Plan.

## 2.3 Poverty and Inequality

The performance of Andhra Pradesh in reducing income poverty has been impressive, particularly in rural areas. Economic growth of the state especially in agriculture has definitely been contributing to decline in poverty levels. Besides, the most important factor is the poverty alleviation programmes implemented in the state such as PDS since 1980s and the MGNREGS in recent times. Estimates based on NSS household consumption data indicate that poverty in AP has always been lower than the national average and that its pace of reduction is faster than that of all India.[3] The poverty head count ratio declined from 44.6% to 29.6% during 1993-94 to 2004-05 at a rate of 1.3 % points per annum. During the same period all India poverty ratio fell from 45.3% to 37.2% at a rate of 0.7 % points per annum. There has been acceleration in the pace of reduction of poverty especially in the state between 2004-05 and 2009-10. Estimates for 2009-10 indicate a further decline in poverty to 21.1% in the state from 29.6% in 2004-05 while it fell to 30% from 37% at all India level during the same period (Table 2.3.1).

### Table 2.3.1: Poverty Ratios in Andhra Pradesh and for All India

|  | Poverty Head Count Ratio | | | % change/Annum | |
|---|---|---|---|---|---|
|  | 1993-94 | 2004-05 | 2009-10 | 1993-2004 | 2004-20010 |
| Andhra Pradesh | | | | | |
| Rural | 48.1 | 32.3 | 22.8 | -1.44 | -1.90 |
| Urban | 35.2 | 23.4 | 17.7 | -1.07 | -1.14 |
| All | 44.6 | 29.6 | 21.1 | -1.34 | -1.76 |
| All India | | | | | |
| Rural | 50.1 | 42.0 | 33.8 | -0.75 | -1.60 |
| Urban | 31.8 | 25.5 | 20.9 | -0.55 | -0.96 |
| All | 45.3 | 37.2 | 29.8 | -0.74 | -1.48 |

**Source**: Planning Commission.

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[3] The methodology of estimation of number poor has been modified recently by an Expert Group (EG) headed by Tendulkar. Poverty estimates for the years 1993-94 and 2004-05 used in this section are taken from EG report. Estimates for the year 2009-10 are obtained by updating EG poverty lines of 2004-05 for prices using CPIAL for rural and CPIIW for urban. These estimates might differ from estimates based on unit level implied prices.

Between 1993-94 and 2009-10, rural poverty in the state reduced by more than half -from 48% to 23%. Similarly, urban poverty in the State also declined considerably from 35% in 1993-94 to 18% in 2009-10. Rural poverty at all India level in the same period declined from 50% to 34% and urban poverty from 32% to 21%. Thus, AP's economic growth seems to be wide spread enough to benefit the poor.

**Table 2.3.2: Number of Poor in Andhra Pradesh and in India**

| State/Sector | Number of poor (millions) | | |
|---|---|---|---|
| | 1993-94 | 2004-05 | 2009-10 |
| **Andhra Pradesh** | | | |
| Rural | 24.3 | 18.0 | 11.6 |
| Urban | 6.6 | 5.5 | 4.1 |
| All | 30.8 | 23.7 | 15.9 |
| **All India** | | | |
| Rural | 330.1 | 324.2 | 292.6 |
| Urban | 74.9 | 81.9 | 71.8 |
| All | 405.1 | 407.0 | 369.9 |

**Source**: Computed.

A noteworthy feature of the poverty trends in the State is that the absolute number of poor is also declining faster than the all India level (table 2.3.2). The total number of poor in the state declined by nearly half from 31 million in 1993-94 to 16 million in 2009-10, whereas the size of poor at all India level declined by only about 9% from 405 million to 370 million during this period. As result the share of the state in the overall poverty in the country declined significantly since 1993-94 (figure 2.3.1). Though, the bulk of the poor in the state live in rural areas, their share in total poor is reducing overtime because of rapid urbanization and migration. The share of urban poor in the total poor of the State increased from 21% in 1993-94 to 26% in 2009-10.

**Figure 2.3.1: Share of Andhra Pradesh in Number of Poor at all-India**
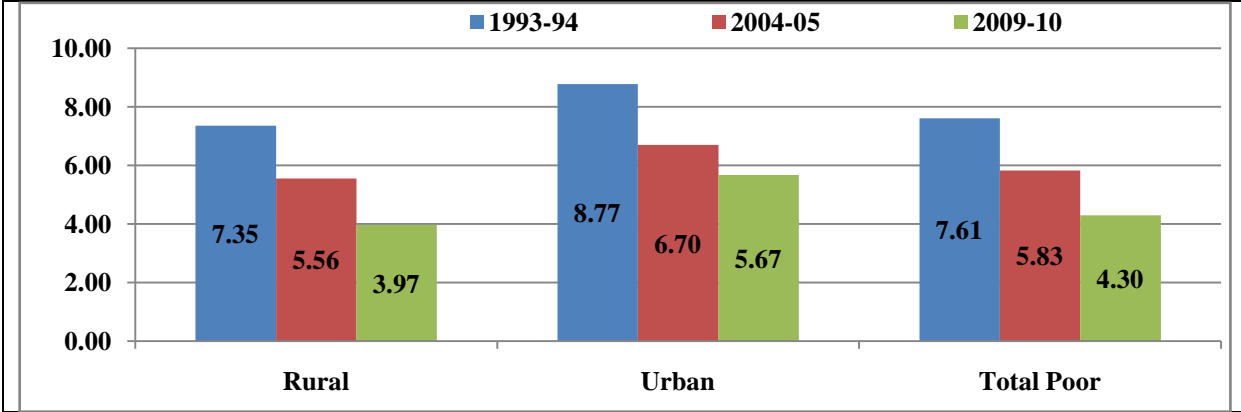


**Source**: Computed.

Elasticity of poverty with respect to GDP as implied by the ratio of rate of poverty reduction and per capita GDP growth rate has been higher for the state compared to the national average. The elasticity of poverty for the State and all India for the period 1993-94 to 2004-05, was -0.74 and -0.41 respectively. This was the period when the consumption inequalities increased in state as well as in India. The Gini coefficient of inequality for rural areas of the State increased from 0.25 to 0.27 whereas at all India level it increased from 0.26 to 0.28. In urban areas the inequalities rose sharply from 0.30 to 0.36 in the state and from 0.32 to 0.36 in India. In this period, the rural areas in the state as well as in India experienced lower growth than the urban areas. The differential growth together with the rising inequalities has blunted the poverty reducing effect of growth.

**Table 2.3.3: Elasticity of Poverty to Income**

| | Andhra Pradesh | | | All India | | |
|---|---|---|---|---|---|---|
| | Growth rates | | | Growth rates | | |
| Period | Per Capita Income | Poverty | Elasticity | Per Capita Income | Poverty | Elasticity |
| 1994-94 to 2004-05 | 4.85 | -3.57 | -0.74 | 4.27 | -1.77 | -0.41 |
| 2004-05 to 2009-10 | 8.13 | -8.6 | -1.06 | 7.1 | -2.8 | -0.40 |

**Note**:

**Source**: Computed.

During 2004-2010 there was acceleration in the overall consumption growth in both rural and urban areas. However at all India level most of the growth was confined to urban areas where inequalities have risen. For example, the consumption growth increased from 1.3% pa for the period 1993-2004 to 1.8% for 2004-09 in rural areas of India, while it increased from 2.1% to 2.5% urban areas of all India between the two periods in. At the same time the urban inequalities (all India), as measured by the coefficient of Gini increased sharply from 0.36 in 2004-05 to 0.38 in 2009-10 (Table 2.3.4), while it remained stable in rural areas. In contrast, the rural areas of Andhra Pradesh experienced significant acceleration in the growth between the two periods. The consumption accelerated from 1.3% to 2.5% in rural areas growth while it remained more or less at 2.3% pa in urban areas. Also the consumption inequalities in the state remained more or less stable in both rural and urban areas (Table 2.3.4). With reduced growth differential and stable inequalities, the poverty reducing effect of growth improved significantly in the state. If the current elasticity continues and growth continues, the state has good prospect of reducing poverty by another 8-10 percentage points by 2017.

**Table 2.3.4: Gini Coefficient of Inequality for Andhra Pradesh and India**

| Year | Andhra Pradesh | | All India | |
|---|---|---|---|---|
| | Rural | Urban | Rural | Urban |
| 1993-94 | .2487 | .3033 | .2584 | .3187 |
| 2004-05 | .2677 | .3627 | .2808 | .3643 |
| 2009--10 | .2762 | .3611 | .2832 | .3805 |

**Source**: Computed.

### 2.1.3 Growth Targets for the Twelfth Plan

Given the recent growth trends, two alternative targets for economic growth have been proposed for the Twelfth Plan. The first alternative is set on par with the national objective of achieving 9.0 in the Twelfth Plan period (S1).  However, in view of the good performance of the state compared to all India, a higher growth rate can be targeted. Therefore, more optimistic target of 10 % average growth for the Plan period is proposed as a second alternative (S2). The target of achieving an average growth rate of 10% is feasible by stepping up investments and reprioritizing policies and programs.

**Table 2.1.3: Sectoral Growth Targets Twelfth Plan**

| Sector | XI Plan Achievement | XII Plan Target | |
|---|---|---|---|
| | | S1 | S2 |
| Crop & Horticulture | 3.4 | 4.0 | 5.0 |
| Livestock | 8.6 | 7.0 | 8.0 |
| Forestry & Logging | 2.4 | 2.0 | 2.0 |
| Fishing | 10.0 | 6.0 | 7.0 |
| *Agriculture & Allied* | *5.4* | *5.0* | *6.0* |
| Mining & Quarrying | 1.4 | 8.0 | 9.0 |
| Manufacturing | 8.1 | 9.0 | 10.0 |
|     Registered | 9.6 | 10.0 | 11.0 |
|     Un-Registered | 4.9 | 5.5 | 6.5 |
| Electricity, Gas & Water Supply | 8.8 | 8.0 | 9.0 |
| Construction | 11.1 | 11.0 | 12.0 |
| *Industry* | *8.2* | *9.0* | *10.5* |
| Trade, etc. | 7.1 | 9.5 | 10.5 |
| Railways | 7.4 | 7.0 | 7.0 |
| Other Transport & Storage | 10.3 | 10.0 | 11.0 |
| Communications | 18.3 | 19.0 | 20.0 |
| Banking & Insurance | 16.8 | 15.0 | 17.0 |
| Real estate, etc. | 10.0 | 10.0 | 11.0 |
| Public Administration | 8.9 | 8.0 | 8.0 |
| Other Services | 6.2 | 6.0 | 6.5 |
| *Services* | *9.6* | *10.5* | *11.5* |
| *GSDP* | *8.3* | *9.0* | *10.0* |

*Note: S1 – Scenario I at 9% target growth rate of GSDP; S2 – Scenario II at 10%.*

The sectoral growth rates consistent with 9% and 10 % alternatives are presented in Table 2.1.3. The 9% growth requires maintaining the same momentum that agriculture experienced during the Eleventh Plan.  However S1 requires acceleration of growth in industry, with a target of 9% and service sector with a target of 10.5%.  The alternative scenario, S2 requires considerable stepping up in the growth

rates of all the three sectors. Under S2, the agriculture sector requires to grow at 6.0%. Agricultural growth has always been an important component for inclusiveness in India. However, the task of providing additional jobs to the growing labour force will rest on manufacturing, construction and services sectors. The target set for the mining sector is necessary to meet the primary energy requirements without resorting to excessive imports.

### 2.4.1 Investment Requirements

The investment requirements under the two alternatives have been worked out using an incremental capital output ratio (ICOR) of 4.3 for the aggregate economy and assuming an inflation rate of 7% per annum during the Plan period and that the state's share in the aggregate investment would be 18%. Aggregate investments in current prices required for achieving a growth rate of 9% would be Rs. 19.1 Lakh crores, while for achieving 10% growth it would be 21.9 Lakh Crores in 5 years. The state's share in aggregate investments would be 3.44 lakh crores for 9% growth and 3.94 lakh crores for 10% growth  lakh crores.

**Figure 2.1.5: Projected Annual Aggregate Investment Required for the Twelfth Plan Under the Two Scenario**



| a) Projected Annual Aggregate Investment Required for the Twelfth Plan | b) Projected State Share of Annual Investment Required for the Twelfth Plan |
|---|---|
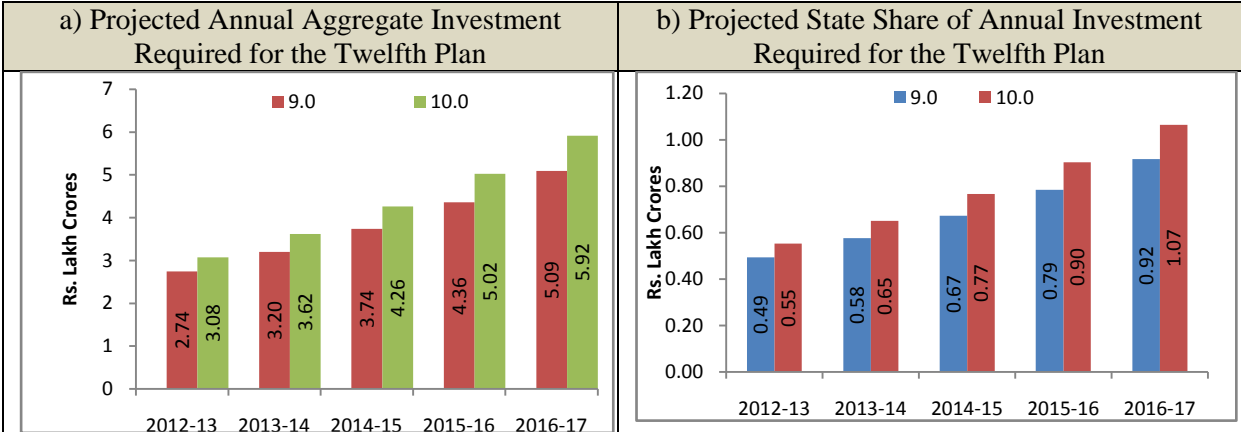
**Note**: 9 – at 9% Target Rate of Growth in GSDP; 10 -at 9% Target Rate of Growth in GSDP.

The year-wise breakup of the aggregate investment and state's share in it are presented in figure 2.1.5a and 2.1.5b. The following chapter discusses the prospects of the state raising these resources and related issues.

# 3. State Fiscal Scenario and Plan Financing

Resources for financing Plan expenditure of a State are broadly categorized into three components, viz., State's own resources, borrowings and Central assistance for State Plans. States' own resources are non-debt, comprising balance from current revenues (BCR), miscellaneous capital receipts (MCR) and additional resources envisaged to be raised during a plan period.

Till the early eighties with the exception of a few years, the States as a whole enjoyed a surplus on the revenue account. This enabled the States to have a surplus balance from current revenues enabling them to meet over one-third of plan financing through non-debt means. States as a whole started witnessing a deficit on their revenue accounts since 1987-88 almost continuously. In Andhra Pradesh, the revenue account went into a deficit for the first time in 1983-84 and remained in deficit till 1986-87. After posting a marginal surplus in the years 1987-888 and 1988-89, the revenue account of the State again went into a deficit in 1989-90 and remained so till 2005-06. By 2002-03, the revenue and fiscal deficits of States assumed alarming proportions. While the revenue deficit of all States worsened from 0.9 % of GDP in 1997-98 to 2.3 % of GDP in 2002-03, the revenue deficit of Andhra Pradesh worsened from 0.73 % of GSDP to 1.83 of GSDP in the same period. During the same period, the fiscal deficit of all States worsened from 2.8 % of GDP to 4.1 % of GDP. The deterioration in the fiscal deficit of Andhra Pradesh was much sharper from 2.51 % of GSDP to 4.56 % of GSDP in the same period.

Four important developments have prevented State finances from further deterioration. The first was the introduction of economic reforms in the early nineties aimed at liberalizing the economy and making public finances sustainable. Following the higher growth trajectory in the post 2003-04 period, there was an improvement in State finances around 2004-05 facilitated by a higher growth of the economy and the resultant increase in the buoyancy of State taxes. The second major development was the introduction of Value Added Tax (VAT) by most States in 2005-06 which enhanced their tax base considerably. The third major development was the boost the State finances received following the recommendations of the Twelfth Finance Commission (TFC-XII). The TFC-XII recommended an increase in the States' share in central taxes from 29.5% to 30.5% and the Debt Consolidation and Relief Facility (DCRF) for States. The enactment of FRBMA in 2005-06 ushered in an era of rule based management of public finances in the State. Following these developments, the revenue account of the State changed into surplus in 2006-07 after remaining in deficit for close to 17 years and the fiscal deficit moderated to 1.9% of GSDP in the same year.

The improvement in State finances continued till 2007-08. The Global downturn witnessed following the collapse of Lehman Brothers had its effect on the growth outcomes in India. While the GDP growth of the country declined from 9.3 % in 2007-08 to 6.8 % in 2008-09, the GSDP growth in Andhra Pradesh declined from 12.0 % in 2007-08 to 6.9 % in 2008-09 and further to 6.0 % in 2009-10. Though the GSDP growth improved subsequently, it was substantially lower than the growth achieved in 2007-08. Following the deceleration in the growth of the economy, the fiscal deficit of the State deteriorated to 3.0 % of GSDP in 2008-09. Since then, there has been a marginal moderation in the fiscal and revenue deficits of the State. In the Budget for 2011-12, the fiscal deficit and the revenue surplus of the State are budgeted at 2.9% and 0.58% of the GSDP, respectively.

## 3.1. Review of Plan Financing in Andhra Pradesh

### 3.1.1 Tenth Plan (2002-07)

The Tenth Plan period (**Table 3.1**) represents a distinct shift from the past trends in terms of economic growth as well as the health of state finances. During the Tenth Plan, Andhra Pradesh clocked average GSDP growth of 8.1 % per annum as compared with the average annual growth of 5.5 % achieved in the Eighth Plan Period. While the GDP growth of the country improved from 3.8 % in 2002-03 to 8.5 % in 2003-04, the GSDP growth of Andhra Pradesh jumped from 2.9 % to 9.1 %. The total revenue-GSDP ratio in Andhra Pradesh witnessed an improvement from 13.68 in 2002-03 to 14.08 in 2003-04 and further to 18.00 in 2007-08. The Tenth Plan period also witnessed changing developments, such as, enactment of FRBM legislation, introduction of VAT and Debt Relief and Consolidation Facility and higher transfers recommended by the Twelfth Finance Commission. All these development resulted in fiscal consolidation and improvement in plan financing. The position with regard to plan financing in the State during the Tenth Plan period is presented below.

The actual mobilization of resources for the Tenth Plan in Andhra Pradesh exceeded the initial estimates by 27.22 %. The sole contributory to this improvement was State's own resources, the contribution of which exceeded the initial estimates by nearly 256%. Among the components, the resources from BCR and MCR exceeded the estimates. While the improvement in BCR was on account of better revenue performance, the improvement in MCR mainly came from the proceeds of sale of government lands.

**Table 3.1: Patten of Plan Financing in Andhra Pradesh- Tenth Five Year Plan (2002-07)**

(Rs. Crore)

| Source of Financing | X Plan Projection | Actual Realisation | | | | | | Actual Realisation as % of Projection |
|---|---|---|---|---|---|---|---|---|
| | | 2002-03 | 2003-04 | 2004-05 | 2005-06 | 2006-07 | Total (2002-07) | |
| **1.State's Own Resources** | 9837.45 | 2026.89 | 7356.74 | 6512.11 | 8043.83 | 11080.65 | 35020.22 | 355.99 |
| a)BCR | 9192.53 | 30.17 | 474.07 | 1860.92 | 3988.05 | 8517.90 | 14871.11 | 161.77 |
| b)MCR | -558.04 | 1701.24 | 6821.63 | 5101.26 | 3674.23 | 2216.32 | 19514.68 | 3497.00 |
| c)FC Grants | 986.41 | 58.65 | 62.40 | 7.15 | 6.50 | 154.60 | 161.00 | 16.32 |
| d)ARM | 152.45 | 152.45 | | | | | | |
| e)Opening balance | 64.1 | 236.83 | -1.36 | -457.22 | 375.05 | 191.93 | 345.23 | 538.58 |
| **2. Net Borrowing** | 19570.33 | 2830.24 | -581.17 | 1706.93 | 3986.84 | 4759.44 | 10730.42 | 54.83 |
| **3. Central Assistance.** | 18037.93 | 3540.67 | 4001.03 | 3247.52 | 1448.74 | 2372.37 | 14610.33 | 81.00 |
| a)Normal | 5764.12 | 1131.79 | 1148.48 | 1267.57 | 448.58 | 356.23 | 4352.65 | 75.51 |
| b)EAP | 7861.77 | 1905.69 | 1546.69 | 1305.83 | 294.92 | 310.68 | 5363.81 | 68.23 |
| c)Others | 4412.04 | 503.19 | 1305.86 | 674.12 | 705.24 | 1705.46 | 4893.87 | 110.92 |
| **Net Total Resources** | 47445.71 | 8397.80 | 10776.60 | 11466.56 | 13479.41 | 18212.46 | 60360.97 | 127.22 |
| **As Percentage of Total Resources for the Plan** | | | | | | | | |
| **1.State's Own Resources** | 20.73 | 24.14 | 68.27 | 56.79 | 59.67 | 60.84 | 58.02 | |
| a)BCR | 19.37 | 0.36 | 4.40 | 16.23 | 29.59 | 46.77 | 24.64 | |
| b)MCR | -1.18 | 20.26 | 63.30 | 44.49 | 27.26 | 12.17 | 32.33 | |
| c)FC Grants | 2.08 | 0.70 | 0.58 | 0.06 | 0.05 | 0.85 | 0.27 | |
| d)ARM | 0.32 | | | | | | | |
| e)Opening Balance | 0.14 | 2.82 | -0.01 | -3.99 | 2.78 | 1.05 | 0.57 | |
| **2. Net Borrowing** | 41.25 | 33.70 | -5.39 | 14.89 | 29.58 | 26.13 | 17.78 | |
| **3. Central Assistance.** | 38.02 | 42.16 | 37.13 | 28.32 | 10.75 | 13.03 | 24.20 | |
| a)Normal | 12.15 | 13.48 | 10.66 | 11.05 | 3.33 | 1.96 | 7.21 | |
| b)EAP | 16.57 | 22.69 | 14.35 | 11.39 | 2.19 | 1.71 | 8.89 | |
| c)Others | 9.30 | 5.99 | 12.12 | 5.88 | 5.23 | 9.36 | 8.11 | |
| **Net Total Resources** | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | |

**Note**: BCR=Balance from Current Revenues; MCR=Miscellaneous Capital Receipts; FC Grants= Finance Commission Grants; ARM= additional Resource Mobilisation; EAP= Externally Aided Projects.

**Source**: Government of Andhra Pradesh Finance Department.

Despite less than estimated Central assistance and net borrowings, the better performance of BCR and MCR more than made up for their shortfall. The redeeming feature of plan financing in the Tenth Plan was the reduced dependence on borrowings as a means of plan financing. Though net borrowings constituted only 17.78 of the total resources, the actual share of borrowings in total financing would be higher at about **27%** taking into account **70%** of normal Central assistance and assistance for externally aided projects which was in the form of loans till 2004-05.

### 3.2.1 Eleventh Plan (2007-12)

Eleventh Plan was formulated in the backdrop of a turnaround in the state finances as well as in the growth of the economy. Therefore, much emphasis was put on the contribution of State's own resources. The contribution of State's own resources was envisaged at 67.51% as compared to 20.73% in the Tenth Plan period. Developments unfolding in the wake of the global downturn cast their shadow on the performance of the State economy too. As indicated earlier, the Growth of GSDP witnessed a sharp fall in the year 2008-09. It was only in 2010-11 that the economy recovered to 10% of GSDP growth. The pattern of Plan financing during the Eleventh Plan period is presented below.

**Table 3.2: Pattern of Plan Financing in Andhra Pradesh-Eleventh Five-year Plan (Rs. Crores)**

| Source of Financing | XI-Plan Projection | Realisation | | | | | | Actual Realisation as % of Projection |
|---|---|---|---|---|---|---|---|---|
| | | 2007-08 (Accounts) | 2008-09 (Accounts) | 2009-10 (Accounts) | 2010-11 (Accounts) | 2011-12 (LE) | Total 2007-12 | |
| **1.State's Own Resources** | 138397.44 | 16413.43 | 15564.05 | 10756.40 | 15870.36 | 16422.19 | 75026.43 | 54.21 |
| a)BCR | 108148.48 | 8401.92 | 13829.00 | 10750.79 | 16163.33 | 15953.16 | 65098.20 | 60.19 |
| b)MCR | 29508.96 | 7938.44 | 1463.33 | 124.63 | -855.74 | 2.67 | 8673.33 | 29.39 |
| c)FC Grants | 740.00 | 146.00 | 191.66 | 199.16 | 298.83 | 561.80 | 1397.45 | 188.84 |
| d)Opening Balance | | -74.93 | 80.06 | -318.18 | 263.94 | -95.44 | -144.55 | |
| **2. Net Borrowing** | 50703.23 | 6987.28 | 11028.79 | 14394.47 | 12403.96 | 17924.00 | 62738.50 | 123.74 |
| **3. Central Assistance.** | 15899.73 | 3792.42 | 4039.44 | 4254.38 | 3318.59 | 5825.33 | 21230.16 | 133.53 |
| a)Normal | 2605.85 | 368.07 | 512.48 | 496.57 | 439.57 | 620.76 | 2437.45 | 93.54 |
| b)EAP | 955.75 | 484.58 | 166.05 | 90.50 | 72.08 | 50.00 | 863.21 | 90.32 |
| c)Others | 12337.73 | 2939.77 | 3360.91 | 3667.31 | 2806.94 | 5154.57 | 17929.50 | 145.32 |
| **Net Total Resources** | 205000.00 | 27193.13 | 30632.28 | 29405.26 | 31592.91 | 40171.52 | 158995.10 | 77.56 |
| **As %age of Total Resources** | | | | | | | | |
| **1.State's Own Resources** | 67.51 | 60.36 | 50.81 | 36.58 | 50.23 | 40.88 | 47.19 | |
| a)BCR | 52.76 | 30.90 | 45.15 | 36.56 | 51.16 | 39.71 | 40.94 | |
| b)MCR | 14.39 | 29.19 | 4.78 | 0.42 | -2.71 | 0.01 | 5.46 | |
| c)FC Grants | 0.36 | 0.54 | 0.63 | 0.68 | 0.95 | 1.40 | 0.88 | |
| d)Opening Balance | | -0.28 | 0.26 | -1.08 | 0.84 | -0.24 | -0.09 | |
| **2. Net Borrowing** | 24.73 | 25.70 | 36.00 | 48.95 | 39.26 | 44.62 | 39.46 | |
| **3. Central Assistance.** | 7.76 | 13.95 | 13.19 | 14.47 | 10.50 | 14.50 | 13.35 | |
| a)Normal | 1.27 | 1.35 | 1.67 | 1.69 | 1.39 | 1.55 | 1.53 | |
| b)EAP | 0.47 | 1.78 | 0.54 | 0.31 | 0.23 | 0.12 | 0.54 | |
| c)Others | 6.02 | 10.81 | 10.97 | 12.47 | 8.88 | 12.83 | 11.28 | |
| **Net Total Resources** | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | |

BCR=Balance from Current Revenues   MCR=Miscellaneous Capital Receipts
FC Grants= finance Commission Grants  ARM= additional Resource Mobilisation
EAP= Externally Aided Projects
Source: Government of Andhra Pradesh, Finance Department.

During the Eleventh Plan, the contribution of State's own revenue fell sharply to **54.21** % of the original estimate. This is mainly on account of the deceleration in the growth of own revenues as well as a decline in the MCR. In 2009-10, while the growth of tax revenue declined to 5.45 % from over 25 % in the previous year, non-tax revenues recorded a negative growth as compared with the growth of 37.08 % in 2008-09. The realization of MCR is much lower than the estimate as the sale of government land was resorted to only in the first year of the Plan The actual realization in the entire five-year period is expected to be only **77.56** % of the estimate. As the projections of resources for the Eleventh Plan were made against the overall improvement in the State finances witnessed since 2003-04, there was an element of over estimation as compared to the estimates for the Tenth Plan. This also partly explains the underperformance of the BCR and MCR as compared to the estimates in the Eleventh Plan period. The shortfall in the realization of resources would have been much sharper but for the increase in the Central assistance and borrowings. There is also a substantial increase in the grants from the Finance Commission. Because of a significant shortfall in the share of BCR and MCR in plan financing as compared to the original estimates, there is likely to be increased dependence on borrowings in the Eleventh Plan as compared to the Tenth Plan. The dependence on borrowings is likely to be **39.46** % of the total resources in the Eleventh Plan as compared to **27** % in the Tenth Plan.

But for the limits on borrowings following the enactment of FRBMA, higher Finance Commission transfers and higher than estimated Central assistance, dependence on borrowings would have been much higher in the Eleventh Plan.

## 3.3 Issues of Plan Financing – Way Forward

### 3.3.1 Financial Resources – Twelfth Five Year Plan (2012-17)

The budgetary implications of financing the Twelfth Plan, which targets a growth rate of 9 to 10% need to be explored in this background.

### *3.3.1.1 Borrowings - A Bleak Source of Plan Finance*

The share of central assistance in the plan financing declined from 24 % (tenth plan period) to 13 % (eleventh plan period). Also, the proportion of State's own resources which was high at 58 % in tenth plan period declined to nearly 47 % under eleventh plan period. In contrast, the contribution of net borrowings increased between the last two plans.

The increasing dependency of the state government on the borrowings resulted in the increase of outstanding public debt of Andhra Pradesh. The total outstanding debt of the State which was Rs.82479 crores in 2007-08 constituting nearly 22.6% of GSDP at current prices increased to Rs. 139667 crores i.e., 24.72 % of the GSDP in the budget estimates of 2011-12. The maturity profiles of the outstanding stock of market loans as at the end of March 2010 indicate that nearly 32 % of the outstanding market loans mature in the 12$^{th}$ plan period (Table 3.3). If the repayment obligations of market loans during 12$^{th}$ plan period are met from bulk borrowings, it will reduce the net-debt resource for the plan financing. Further the limit of debt/GSDP ratio set by the Thirteenth Finance Commission (less than 25 % by 2014-15) restrict the scope of the borrowings unless the state achieves the expected growth in GSDP during the twelfth plan period. Impact of borrowings is inevitable on the deficit indicators. Higher borrowings would lead to higher interest payments and subsequently to higher fiscal deficit/GSDP ratios. AP state's Fiscal Deficit/GSDP ratio in 2007-08 (actuals) was 2.4%. In 2008-09 the ratio was 3.0%. In 2011-12 the budget estimates of this ratio is 2.6 % – marginally lower than the limit set by the Thirteenth Finance Commission (3 % by 2011-12 and maintaining the same thereafter).

In sum the borrowings appear to be a bleak source of financing the 11th Plan. It appears that the State should depend more on the non-debt resources, particularly Balance from Current Revenues (BCR). Within the BCR, augmentation of own tax and own non-tax revenue and controlling non-plan revenue expenditure would be critical. The trends of both receipts and expenditure, as a proportion of GSDP, show that it is feasible for the state to aim for augmentation of state own tax and non-tax resources to meet its larger plan size.

**Table 3.3: Maturity Profile of the Outstanding Stock of Market Loans (at the end of March 2010)**

| Year | Rate of Interest | Maturity Profile of Market Loans (Incl. Power Bonds) | | Repayment Obligation | |
|---|---|---|---|---|---|
| | (%) | (Rs. Crores) | Relative Share | (Rs. Crores) | Relative Share |
| 2009-10 | 11.46% | 1682.71 | 3.16 | | |
| 2010-11 | 10.24% | 2491.33 | 4.68 | | |
| 2011-12 | 7.75% | 1964.32 | 3.69 | 6138.36 | 11.53 |
| 2012-13 | 6.45% | 4996.57 | 9.39 | | |
| 2013-14 | 6.50% | 2622.69 | 4.93 | | |
| 2014-15 | 6.93% | 2963.87 | 5.57 | | |
| 2015-16 | 7.91% | 2489.27 | 4.68 | | |
| 2016-17 | 7.88% | 3877.84 | 7.29 | 16950.24 | 31.86 |
| 2017-18 | 8.39% | 8800.00 | 16.54 | | |
| 2018-19 | 7.73% | 18433.59 | 34.65 | | |
| 2019-20 | 8.37% | 2883.14 | 5.42 | | |
| | | 0.97* | 0.00 | 30117.70 | 56.61 |
| Total | | 53206.30 | 100.00 | 53206.3 | 100.00 |

**Note**: 1. '*' = Loans not bearing interest; 2. Calculated from the 'statement 32: State Government Market Loans', State Finances: A study of Budgets of 2010-11, p.157, RBI.

### 3.3.1.2 Augmentation of State Own Tax and Non-Tax Resources

For the decade 2000s, the trend growth rate of revenue resources is higher than the GSDP at current prices and at 1999-2000 prices indicating that the revenues are buoyant (Table 3.4).

**Table 3.4: Growth Rates of Revenue Receipts/ Expenditure (2000-10) (Percentage)**

| Sno | Receipts/Expenditure | 1999-00 Prices | Current Prices |
|---|---|---|---|
| 1 | State Own Tax Revenue | 10.9 | 15.8 |
| 2 | State Own Non-Tax Revenue | 10.2 | 15.1 |
| 3 | SOR (1+2) | 10.7 | 15.7 |
| 4 | Shared Taxes from the Centre | 10.8 | 15.7 |
| 5 | Grants In Aid from the Centre | 11.5 | 16.5 |
| 6 | Total Central Transfers (4+5) | 11.0 | 16.0 |
| 7 | Total Revenue (3+6) | 10.8 | 15.8 |
| 8 | Revenue Expenditure | 8.2 | 13.1 |
| 9 | Non-Plan Revenue Expenditure | 7.1 | 11.9 |
| 10 | Capital Expenditure | 16.2 | 21.4 |
| 11 | Total Expenditure (8+9) | 9.3 | 14.2 |
| *12* | *GSDP* | *8.2* | *13.0* |

**Source**: Estimated from Budget document.

Following are the projections of financial resources estimated using the above trend growth rates at current prices for the period of Twelfth Five Year Plan, 2012-17 (Table 3.5).

**Table 3.5: Revenue Receipts Projections for 12$^{th}$ Five Year Plan (Rs.Crores)**

| Period | State Own Tax Revenue | State Own Non-Tax Revenue | State Own Revenue | Share in Central Taxes | Grants-in-aid from the Centre | Total Central Transfers | Total Revenue |
|---|---|---|---|---|---|---|---|
| 2012-13 | 54641 | 11911 | 66550 | 18812 | 15112 | 33848 | 100372 |
| 2013-14 | 63281 | 13715 | 76993 | 21768 | 17006 | 39256 | 116206 |
| 2014-15 | 73288 | 15791 | 89073 | 25189 | 20511 | 455527 | 134538 |
| 2015-16 | 84877 | 18182 | 103049 | 29147 | 23895 | 52799 | 155762 |
| 2016-17 | 98299 | 20935 | 119219 | 33728 | 27838 | 61234 | 180335 |

**Note**: Estimations.

The trend analysis of state's revenue resources indicates that it would be possible to increase its own revenue worth from Rs. 66550 crores in the beginning of 12$^{th}$ plan to 1.19 lakh crores by the end of 12$^{th}$ plan. If the central transfers also grow at the estimated trend growth rates, the government would find enough resources at its disposal for the forthcoming plan period. To bring the above trends in to reality, the state government should look into certain issues mentioned below some of which are within scope of the state government and some fall in the sphere of fiscal federalism.

### 3.3.3 Issues in Plan Financing - Way Forward

1. There are several issues in plan financing which need to be resolved. Of late, there has been a tendency to budget higher annual plan outlays than that can be supported by State's resources and borrowing limits. The practice of budgeting higher plan outlays has set in since 1999-2000. Till 1998-99, actual plan expenditure exceeded the budget estimates as well as the approved outlays broadly indicating prudence in budgeting the plan outlays. Since 1999-2000, actual plan expenditure tended to fall short of the budgeted as well as approved outlays by a huge margin

2. There are a number of adverse impacts of budgeting higher plan outlays than that can be supported by State finances including innumerable schemes in the Plan. Firstly, such practices result in spreading resources thinly across a number of schemes leading to cost and time overruns. Secondly, higher plan outlays often come at the expense of proper maintenance of assets already created. This results in running down of service delivery capacity that was already created. Higher expenditure commitments necessitate austerity measures like banning the creation and filling up of vacancies which can hamper service delivery even in social sectors such as education and health.

3. With the borrowing limits in place with the enactment of the FRBMA, there has been a tendency to overestimate BCR and MCR in order to project higher plan outlays. Higher estimates of BCR are often the result of underestimating the non-plan commitments. This is a double whammy for the States. Firstly, they lose out in the assessment of non-plan revenue expenditure needs done by the Central Finance Commissions every five years. Secondly, the perceived benefits of overestimation of BCR to project higher plan outlays is negated by a running down of service delivery capacity already created as indicated earlier.

4. There is a tendency to continue schemes under the Plan instead of shifting them to the non-plan in order to show a higher plan outlay. Sometimes schemes not allowed under the non-plan are included in the Plan. If a scheme is not found useful under the non-plan, it should be equally unacceptable under the Plan.

5. In the initial years of planning, schemes were mostly capital in nature and the plan resources could be allocated to new schemes after the completion of on-going schemes. Such flexibility is no more available as the focus of the Plan has shifted to revenue expenditure based schemes. Consequently, a major proportion of plan expenditure has become committed as observed by the Rangarajan Committee. With the bulk of the plan expenditure becoming committed effectively, there are likely to be constraints in further increasing the revenue component of the Plan and taking up new projects to any significant effect.

6. With a major component of plan expenditure becoming committed, there is a far greater need today to involve the private sector in infrastructure development and other capital intensive projects. The Approach paper to the Twelfth Five-Year Plan (2012-17) has assumed that nearly 73 % of the fixed investment required for realizing the growth target of 9 % per annum would come from the private sector including the household sector. In the context of the reduced maneuverability of the State government to mobilize resources for financing new projects, it is imperative that the private sector is involved more intensively to realize the plan targets by way of proactive policies and creating suitable environment for the private sector to thrive in the State.

7. There are likely to be concerns with regard to redemption of past debt and the possible reduction in the repayment period of the loans contracted from the NSSF during the period of the Twelfth Five-Year Plan. The debt servicing of NSSF loans is much higher than fresh borrowings in recent years because of the steep fall in small saving collections. The State had to financing the debt servicing through borrowings from other sources. The situation may improve somewhat with the recent alignment of interest rates on small saving instruments with the market rates of interest. But the likely shortening of the duration of loans from NSSF from the current 25 years to 10 or 15 years with a view

to addressing the asset-liability mismatches of NSSF is likely to compound the problem of debt redemption in the medium term. These developments are likely to add to the debt servicing burden in the Twelfth Plan period and need to be factored in.

8. There are other broader issues relating to the growing expenditure commitments of States, size of the State plan, channeling of Central assistance, direct transfers to implementing agencies bypassing the State governments and the mushrooming growth of Centrally sponsored schemes that are to be taken in to consideration. As observed by the Thirteenth Finance Commission, there are a number of Central and State legislations, the compliance cost of which mostly falls on the States. There are also other developments which have greatly increased the expenditure commitments of States. Central enactments with regard to right to education, food security and land acquisitions are likely to add to the expenditure commitments of States.

9. Contrary to the imperative of empowering States with more resources, developments over the last few decades have resulted, though unwittingly, to the centralization of resources. Centralization of resources is multi-faceted and has taken place in a number of areas. A few of these areas merit a mention here. The most glaring area is the declining share of States in the plan outlays. The share of States in plan outlays declined from over 63 % in the First Plan period (1951-56) to less than 42 % in the period covered by the Tenth Plan. For the Eleventh, the share envisaged for the States is only 39 %.

10. The decline in the share of the States in plan outlays is mainly on account of the increase in the internal and extra budgetary resources (IEBR) of Central public sector undertakings and partly on account of the reduction in the gross budgetary support (GBS) to State plans. The share of the IEBR in total Central plan outlay had witnessed a substantial increase from about 16 % in the First Plan to nearly 56 % in the Ninth Plan. In the Eleventh Plan, IEBR are estimated to contribute nearly 45 % of the Central plan outlay. Added to this, the reduction in the GBS of the Centre to State Plan has also partly resulted in the declining share of States in total plan outlays as indicated above. The Approach Paper has envisaged only a marginal increase in the Central assistance to State and UT Plans from the current 1.18 % of GDP to 1.23 % of GDP in the Twelfth Plan period. Given the imperative of greater role of States, there is need to improve transfers to States substantially.

11. Apart from the declining Central assistance for State Plans, there has been a change in the composition of reduced level of Central assistance to the disadvantage of States. Central assistance for State plans was agreed to be given to States entirely in the form of normal Central assistance on the basis of Gadgil formula in 1969. The block grant character of normal Central assistance was diluted with the introduction of specific purpose schemes, the assistance in respect of which is given in the form of additional Central assistance. Another development that has diluted normal Central

assistance to States is the mushroom growth of centrally sponsored schemes. A third development is the budgeting of schematic outlays in the budgets of Central Ministries as state Plan outlays. Another development is the direct transfer of resources to the implementing agcencies bypassing the States at the expense of accountability. In the Central Budget for 2011-12, an amount of Rs. 1,24,605 crore is provided for direct transfer to implementing agencies bypassing the State governments. In the context of the greater role of States for achieving the objective of inclusive and sustainable growth, these development in the dispensation of Central assistance need to be reversed and the primacy of normal Central assistance as the predominant channel needs to be restored.

12. Though a number of Committees have recommended reduction in the size and number of CSS, there has been no progress in this direction. At least for the Twelfth Plan, the number of CSS may be reduced and restricted to those schemes serving national objectives and the money thus saved may be passed on to States in the form of normal Central assistance. The Chaturvedi Committee has recommended reduction in the number of CSS from the present 147 to 59. The Committee has recommended consolidation and merger of a number of schemes. Even if this recommendation is acted upon, it is unlikely that there will be reduction in the allocations to CSS as the flagship schemes account for the bulk of the allocations under the CSS and the Committee has not recommended any reduction in their number.

13. In the Gadgil formula governing the distribution of Central assistance for State Plans, a weightage of 7.5 % is assigned for special problems. There are no specific guidelines determining the special problems. In effect, the assistance attributable to special problems is distributed to certain States in a highly discretionary and arbitrary manner. The weightage assigned to special problems may be deleted and the weightage has to be distributed to other parameters after due consultations with States.

14. The focus of the Twelfth Five Year Plan (TFYP) as articulated in the Approach Paper is faster, sustainable and more inclusive growth. As sectors, such as, agriculture, education, skill development, provision of health services, welfare of weaker sections, etc., which are at the core of an inclusive social and economic order come within  the purview of the States under the Constitution, there is an urgent need to realign resources in favour of States. Over the years, plan outlays have become synonymous with borrowings, incomplete projects, continuing salary liabilities, mounting interest liabilities, spreading of resources too thinly resulting in cost and time over runs and locking up valuable resources in the creation of low yielding assets. These concerns needs be addressed with earnestness in the Twelfth Five-Year Plan.

# 4. Agriculture

The basic focus of this section is to identify the sources of agricultural growth for achieving higher growth that is faster, inclusive and sustainable in the 12<sup>th</sup> plan period. Sources of growth should be identified based on rigorous inward-looking and outward-looking analysis. The outward-looking analysis is focused on the identification of sources of growth across the states in India and across globe. The inward-looking analysis is focused on the identification of sources of growth within the state and also spots the objective conditions in terms of institutional backup, technological support, structural character and budgetary allocations and programmes that contribute to the functioning of sources of growth. Moreover, it should also mark the contributing subjective conditions, unique local conditions essential for faster growth. The section has been organized as follows: Agricultural growth experience; changing production structures; and identification of drivers and barriers of transformation of production structures for achieving higher, faster, inclusive and sustainable growth.

## 4.1 Growth Experience

There are three distinct phases in the performance of agricultural sector in Andhra Pradesh since its formation. The first phase covering 25 years from 1955-56 recorded a high growth rate hovering around 3.5 % per annum. Deceleration started in the second phase i.e. eighties though the growth rate was a decent 2.66 %, in addition to the fact that it was significantly higher than the population growth. Perhaps, the spread of high yielding variety (HYV) technology across the regions and all classes of farmers brought convergence with respect to productivity during this phase, resulting in maintaining a reputable growth rate. However, during the period of nineties to 2004-05, the performance of agriculture witnessed a steep fall in the growth rate i.e. 0.34 % per annum. The deceleration was not very high till 2001 maintaining a growth rate of 2.4 % per annum, but the rate of decline was very steep after 2001. The crisis which started in the nineties became serious in the subsequent years and showed signs of improvement after 2004-05. However, in terms of decadal performance, agriculture had gained momentum in the last decade (i.e. during 2000-12) recording average growth rate of 4.8%. In fact 2000s is the only decade in which agriculture sector witnessed a continuously positive growth rate for five years. However, the sector was affected by unfavorable weather conditions like drought, floods, for three years out of five years during the Eleventh plan period. Nevertheless, agriculture had recorded average growth rate of 5% during 2005-12 (Table 4.1). This performance of agriculture provides the basis for contemplating an average growth rate of 5% to 6% during 12<sup>th</sup> five year plan.

**Table 4.1: Real GSDP growth in Andhra Pradesh: 1961-2012**

| Period | Agriculture | Industry | Services | GSDP Total |
|--------|-------------|----------|----------|------------|
| 1961-79 | 1.75 | 5.83 | 4.42 | 3.02 |
| 1980-89 | 3.79 | 6.32 | 8.99 | 6.16 |
| 1990-99 | 2.36 | 8.05 | 5.93 | 5.05 |
| 2000-12 | 4.8 | 8.6 | 9.0 | 7.9 |
| Average 2000-05 | 4.45 | 6.82 | 7.36 | 6.38 |
| Average 2005-12 | 5.00 | 9.80 | 10.23 | 8.91 |

**Source**: DES.

Within the agriculture sector, there are wide fluctuations in the growth of agriculture and fisheries during the period between 2005-06 and 2010-12 in Andhra Pradesh. For instance, there is substantial growth in GSDP of agriculture (22.95%) and fisheries (15.82%) in 2007-08 (at 2004-05 prices) and a negative/low growth in the subsequent years i.e. -2.52% in 2008-09 and -3.04% in 2009-10 in the case of agriculture and  3.4% and -0.46% respectively in the case of fisheries. Livestock within agriculture sector recorded substantial growth except in 2006-07 while forestry and logging showed a moderate improvement.

There is a considerable difference across the districts in the contribution of agriculture to the total district domestic product (DDP). 12 out of 22 districts (excluding Hyderabad) in the year 1999-00 and 10 out of 22 in the year 2007-08 registered  less than 4 % share of agriculture in DDP (Table 4.2). First four districts in the table in the year 1999-2000 and first 5 districts in the year 2007-08 registered below 3% share of agriculture to DDP. 10 out of 22 districts have registered low level of contribution (below 4%) from agriculture to the GDDP in both the periods and these districts deserve much attention.

**Table 4.2: Distribution of Districts whose Contribution of Agriculture to DDP (at current Prices) is Below 4 %**

| Year 1999-2000 | Year 2007-08 |
|----------------|--------------|
| Srikakulam (2.12); Adilabad (2.34); Vizianagaram (2.52); Nizamabad (2.90); Kadapa (3.04); Mahaboobnagar (3.13); Visakhapatnam (3.23); Medak (3.39); R R (3.44); Anantapur (3.67); Khammam (3.77); Warangal (3.79). | Vizianagaram (2.34); Srikakulam (2.39); Nizamabad (2.45); R R (2.52); Adilabad (2.75); Visakhapatnam (3.14); Kadapa (3.20); Warangal (3.38); Khammam (3.66); Medak (3.86). |

**Source**: Bureau of Economics and Statistics

On the other hand, Krishna, West Godavari, Guntur and East Godavari have recorded the highest share of - around 9% each in 1999-2000 and continued to record highest share (around 7.5%) of agriculture each to DDP even in 2007-08. It gives an indication of the possibility of achieving higher share from

agriculture. There are about 7 districts which showed an average share of above 4% which have the potential of attaining a higher share of DDP from agriculture sector.

## 4.2 Production Structure

Andhra Pradesh is passing through a gradual transformation in the agriculture sector wherein high-value commodities are gaining importance. The nature of the transformation has also undergone change overtime. The shift from a cereal-based system towards commercial commodities such as oilseeds, cotton and sugarcane was the transformation that took place during 1980s.This transformation helped the State in achieving growth of about 3.5% a year. The transformation has continued in the 1990's, but is now directed more towards high-value commodities such as fruits, vegetables, milk, meat, poultry and fish. But, during this decade, the crop sector witnessed high volatility due to consecutive droughts and decelerating crop yields. On the other hand, the high-value commodities performed impressively during this decade and rescued the agriculture sector to a great extent.

### 4.2.1 Crop Production Structure

There is a shift in cropping pattern from food crops to non-food crops (figure 1). Though rice is the major food crop in the state, it is seen that the area under cereals and millets has decreased steeply while there is a substantial increase in the area under non-food crops like cotton, groundnut and sunflower. Most of the decline in the area under food grains is due to the reduced acreage under 'other cereals' crops (coarse cereals like Jowar, Bajra, etc.). Within the important crops, area under rice has increased from 25 lakh hectares in 1955-56 to 44 lakh hectares in 2008-09 accounting for 176%; area under maize has increased from 25,000 hectares in 1955-56 to 8.52 lakh hectares in 2008-09. Similar trend is noticed in the case of pulses, groundnut and cotton. The increase in the area under maize cultivation can be attributed to the boom in the poultry sector. Thus it is clearly established that these four crops (rice, groundnut, maize and cotton) accounting for more than 60 % in area terms deserve focused policy attention for increasing the volume as well as the value of outturn (Table 4.3).

Recent increase in the rice production which accounts to about 69% of total food grain production in the state brought out new challenges both for the farming community and policy makers. These issues are more related to marketing and cost escalation in inputs. Similarly, a nearly 3-fold increase in the cotton acreage due to spread of this crop to non-conventional cotton areas (parts of Mahbubnagar, Nalgonda, Ranga Reddy, Anantapur and Medak districts particularly having light textured soils) resulted in either un-expected crop failures or dwindling returns. This situation also resulted in considerable replacement of conventional jowar and castor crops in these tracts.

The spectacular performance of maize in zero-tilled lands of delta region during lean water available period made this crop the darling of farming community as it helped in realizing better remuneration. However, subsequent attempts at emulating its success in other regions revealed that maize crop should be encouraged in uniform rainfall areas with medium to heavy soils so that the crop will not get exposed to moisture stress. The attempted spread and coverage of this crop in light soil areas of Anantapur, Nalgonda and Mahbubnagar also left the farmer high and dry. Therefore, not only in terms of augmenting the production of food grains in the state but also in the best interest of the farming community, maize crop need to be confined to the areas receiving good rainfall in kharif with medium to heavy soils.

**Figure 4.1: Changes in Cropping Pattern in Andhra Pradesh**
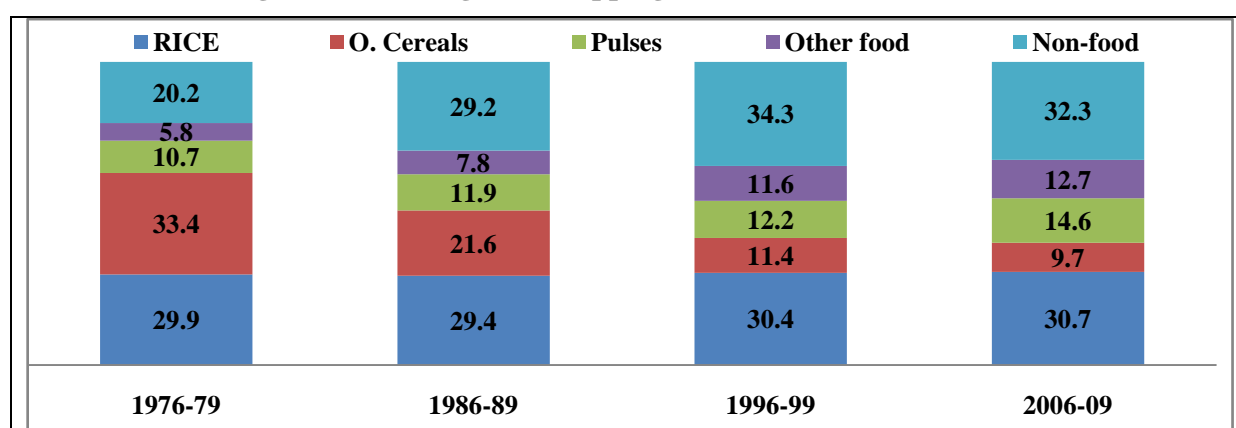


**Source**: DES.

Andhra Pradesh is one of the major pulse growing states in India. Pulses are grown in about 18.54 lakh ha which accounts for 12.80% of the total cropped area. The normal production of pulses in the state is 13.83 lakh tons and there is deficit of pulses in the State.

**Table 4.3: Share of Major Crops Grown in Andhra Pradesh: 2008-09**

| Sno | Crop | Percentage in total gross cropped area | Percentage of area in gross irrigated area | Percentage of area irrigated under crop to total area cultivated under that crop |
|---|---|---|---|---|
| 1 | Rice | 31.72 | 63.0 | 96.85 |
| 2 | Groundnut | 12.7 | 4.4 | 16.64 |
| 3 | Cotton | 10.1 | 3.8 | 18.22 |
| 4 | Maize | 6.1 | 6.24 | 49.38 |

**Source:** Directorate of Economics and Statistics, Government of Andhra Pradesh.

The area under jowar crop in the state of A.P is dwindling over time. For example, the area in the state under jowar crop was 4.44 lakh ha during 2005-06 and it came down to 2.79 lakh ha by 2008-09. However, the success of maize crop in delta regions when water availability was delayed for *rabi* is fast losing ground due to not-so lucrative cost-benefit ratio, susceptibility of crop to moisture stress etc., But this situation is turning to be a boon for re-entry of jowar crop in these tracts. This is reflected

by the increase in area under these tracts over 2 years. There is every possibility of increasing the productivity of jowar in the state as it is finding place in delta region during rabi season. Similarly, the traditional areas of jowar crop which were hitherto taken over by cotton crop (parts of Mahbubnagar, Nalgonda, Ranga Reddy, Anantapur and Medak districts particularly having light textured soils), may be further encouraged to take up jowar both for reducing the risk to the farmers who are taking to cotton in these areas and to increase jowar production in the state. In nutshell, the areas with less rainfall and in soils with low water holding capacity, jowar crop should be encouraged so that other crops like maize and cotton will not fail in these tracts adding to the woes of the farming community.

As far as the changes in the yield is concerned, since early 1990s there was a much faster deceleration in rice productivity in AP compared to other major rice-producing states in the country. Groundnut a major oilseed crop both in terms of production and in area cultivated in the State is mostly cultivated under rain-fed conditions, and hence vulnerable to vagaries of monsoon. The levels of production in oil seeds have been highly volatile and showed a dismal performance resulting in a negative growth rate of yield in the nineties. While cotton in AP was cultivated under rain-fed conditions in certain dry regions, there was also spread of cultivation of hybrid varieties of cotton as an irrigated-dry crop, since late 1980s. Since early 2000s, the area under cotton crop has declined, but has seen a substantial increase in the rate of growth of productivity. Productivity of maize has also increased to a large extent during the last decade (Figure 4.2). There was a sluggish growth in rice yield after 1990s which showed some improvements in recent years. Though the State as a whole recorded an increase in the growth of production of rice in recent years, it came mainly from the coastal regions where the area under rice increased significantly. In the case of production of food grains, the state witnessed a decline in 2009-10 and which is expected to increase modestly in 2010-11 however not to the level of 2008-09. The change in the growth of production of rice in the state is mainly driven by the change in productivity.

**Figure 4.2   Trends in the Crop Productivity in Andhra Pradesh**
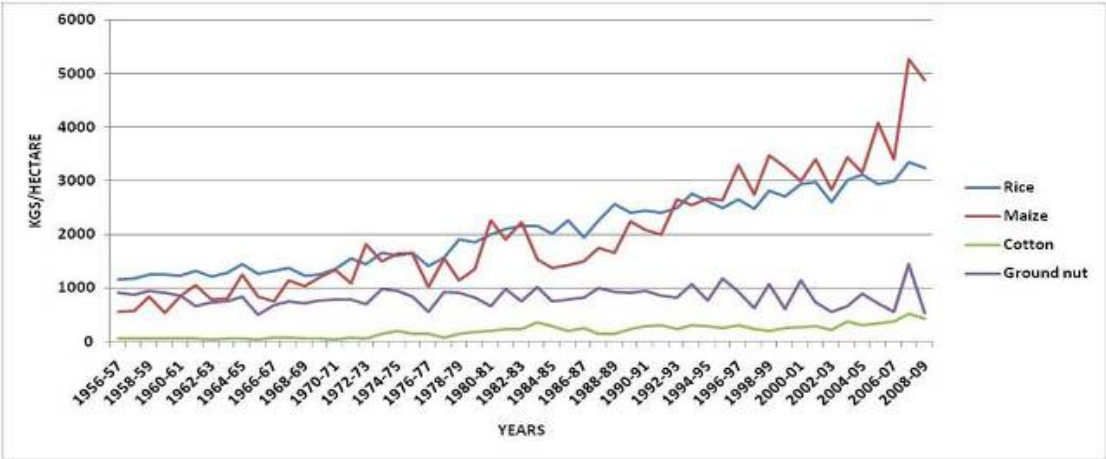
There are four concerns in the production sector with regard to major crops, viz., considerable yield variations across districts within the state; relatively high cost of production in A P compared to other states; dearth of new seed technology for enhancing productivity and post-harvest related issues. If these concerns are addressed in the 12<sup>th</sup> five year plan then there is a huge scope for higher growth.

## 4.3 High Value Commodities (HVC) Production Structure

The share of HVCs in total value of agricultural output (at constant 1993-94 prices) has increased from 29.1% in triennium ending (TE) 1982-83 to 33.1% in TE 1992-93 and reached 50.3% in TE 2002-03 in Andhra Pradesh, . During the same period, agriculture at all-India level diversified but the rate of diversification was less than that in Andhra Pradesh. All this was achieved despite numerous technological and institutional hurdles on the supply side, as well as the lack of concerted policy initiatives towards augmenting HVC production.

The state's share of area and production of fruits and vegetables increased over time. Vegetable production is concentrated close to the demand centers with the area under vegetables being the highest in urban regions and districts surrounding urban areas. In contrast, the bulk of the area under fruit cultivation is concentrated in the north coastal districts and in regions with scanty rainfall. Fruits have specific niches based on agro-climatic or soil characteristics. However, fruit cultivation is gradually spreading to non-traditional areas due to availability of improved varieties.

Horticulture is an important segment of Agriculture sector which contributes about one-fifth share in the economy of Agriculture and allied crops. Andhra Pradesh is the second largest producer of horticulture crops. The state is giving special thrust to the sector under various schemes. Andhra Pradesh with high geographical diversity, seven agro-climatic zones, varies soil types and good irrigation resources are better placed for production of various horticultural crops. Horticulture contributes to approximately 4% of the state GSDP. Horticulture crop covers 17.2% of the gross cropped area in the state. The area under Horticulture is 25.59 lakh hectares, with an annual production of 272 lakh tones during 2011-12.

Horticulture is the fastest growing sector within agriculture thanks to the economic prosperity that has provoked marked changes in the life styles and consumption habits of people. There has been a perceptible change in the consumption pattern characterized by declining share of food grains and increasing share of non-food grain items such as fruits and vegetables in the consumption basket of people. Rapidly growing demand for horticulture commodities and products especially burgeoning market for processed fruits and vegetables as well as booming floriculture markets is expected to

accelerate horticulture growth in the country. Consequently, horticulture is set to assume a greater role and importance within the agriculture sector and eventually in the national economy.

Andhra Pradesh ranks first at all India level in the production of Mango, Chillies, Turmeric, Sweet Lime and Papaya. The state also ranks second in the production of Lime, Coriander, Pomegranate, Loose Flowers; it ranks 3rd in production of cashew; 4th in production of Sapota and 5th in production of Banana, Guava and Ginger. Apart from known methods for enhancement of production of crops, modernization of nursery production programme for the production of virus free certified planting material on suitable rootstocks and a new orientation in planting density in fruit orchards from the present low-density plantation to medium and high-density plantation are specific measures set to attain higher productivity of quality fruits per unit area. There is however a need for development of a comprehensive database and development of marketing Infrastructure for the growth of horticulture sector. In a nutshell, a three tier approach is desirable for the development of horticulture sector viz., infrastructure at Producer Groups / SHG level in clusters of 20-30 villages; collection centers or aggregation centers for these clusters on need based; and development of food parks or central processing units with transportation facility.

In the case of vegetables, the strategies required for achieving higher production are as follows: Nursery raising on raised beds and in plug trays under insect proof net house; Cultivation of hybrids; Ridge planting; Earthing up root crops; Staking of tomato; Sprinkler irrigation for leafy vegetables and gourds; Drip irrigation; Integrated Nutrient management; Foliar application of nutrients; Integrated Pest management; Integrated Disease management; Off-season/protected cultivation under shade net houses; and intercropping of vegetables in orchards during pre-bearing period.

 It is important to diversify crops not only to sustain food grain production, and to be more remunerative but also to meet emerging needs or priority products. Organic farming and value addition to farm produce offer good opportunity to meet the above requirements. Some of the potential / sought after farm produce / farm products and prospective areas where such crops could be encouraged in the state are given below.

| Product / Crop | Areas where to be encouraged |
|---|---|
| Organic Cashew | Srikakulum |
| Organic Jaggery | Chittoor, Vizianagaram, Nizamabad |
| Organic Chilli Powder | Guntur |
| Organic Soybean | Adilabad, Nizamabad |
| Organic Turmeric, Ginger | Karimnagar, Nizamabad, Medak & Kadapa |

In recent past, organic farming, naturally available medicinal plants (or parts), health conscious food products (millets) have become much sought after by the society. Business and industries related to these issues have thus become interested in encouraging the farming community to raise these kinds of crops by offering better price or through tie-ups. This has led to widespread awareness among farming community and in taking up cropping of hitherto less known or lesser cultivated crops. A few experiences also helped to identify such crops suitable to given regions in the state. The following are some of the promising / potential remunerative crops for different regions or areas of the state which can be encouraged with appropriate marketing facilities in place before popularizing them on a larger scale.

| Crop / Cropping System | Suitability / Remarks |
|---|---|
| Sorghum | Coastal Andhra Pradesh (Rabi) |
| Grapes | Anantapur, Parts of Chittoor |
| Chillies | Khammam |
| Maize (for Starch Industry) | In heavy soils with sufficient uniform rainfall areas |
| Cocoa, Aloevera, Black Pepper, Coffee | Agency Areas, West Godavari |
| Medicinal Plants | Waste / Dry Lands and in Agency Areas |
| Vegetables & Flowers | Nalgonda, Ranga Reddy & Medak |
| Flowers | Anantapur, Ranga Reddy |
| Fruit Crops | Chittoor, Mahbubnagar, Krishna |

There are four major concerns with regard to crop diversification: accelerating crop diversification; need to improve productivity; marginal and small farmers should be involved in crop diversification and the food security concerns have to be addressed to accelerate crop diversification. These constrains need to be addressed and should be transformed into sources of growth for the 12$^{th}$ five year plan.

## 4.4 Strategies for Enhancing Agriculture Growth in 12th Five Year Plan

### 4.4.1 Strategies for Improving Crop Production Structure

In order to address the related concerns, institutional, technological and infrastructural solutions become imperative.

### 4.4.1.1 The Institutional Support

With small and marginal farmers constituting almost 83 % of the total farming community, cost of cultivation per unit of land increased substantially as they have to procure different inputs and sell their produce in the market individually. Modernization of agriculture and use of capital intensive agriculture inputs is not viable in small holdings. Hence, growers' federation/contract farming is the best suitable option to achieve higher agricultural growth in the state. Existing research on contract

farming shows that contract farmers are better off because they are able to save considerable proportion of costs of cultivation and earn more profits. Mutual trust and confidence in the farm-firm relationship is the driving point in contract arrangement. Given the difficulties and farmer-land affiliation, growers' federation may work as an alternative wherever it is difficult to ground contract farming. In either case, a regulatory mechanism to safeguard the interests of the small and marginal farmers is a pre-requisite for the success of these arrangements. Collective procurement of inputs and outputs can reduce the transaction costs and get the input and output price right. Further, formal credit institutions should extend credit to reduce the cost of credit so that the cost of cultivation can be reduced to that extent. In order to improve the credit access to these disadvantaged groups 2.38 lakh Rytu Mithra Groups (RMG) were formed. The RMGs work on the lines of Self Help Groups (SHG). The RMGs facilitate not only credit linkages but also serve as conduit for technology transfer and provide market information. As a pilot, in 2008-09, 8428 RMGs facilitated credit linkages to the tune of 175 crores, which also benefited 8238 tenet farmers. Thus efforts have to be made to strengthen the system.

As the expert group rightly pointed out tenancy reforms are necessary to improve security of tenure and in-turn strengthen the position of marginal farmers. Efficient lease markets may solve to some extent the problem of fragmentation of land holdings and make a large number of land operations viable. With secured tenancy, capital investment can take place to improve the quality of land and in turn the production. Recent orders of the Government of AP on tenant farmers, like issuing loan eligibility cards to tenant farmers to access institutional loans for cultivation is also a welcome step. Thus institutional reforms in land lease market are needed and need to be further strengthened both in the interest of land owners and tenant farmers to encourage investment on the field as the incidence of tenancy is high especially in the deltaic districts.

Huge funding under irrigation reforms is expected to help in building the necessary social capital for sustaining the reform process. Strengthening the social capital is a prerequisite for the reforms that aim at transferring irrigation management to farmers. Though user contribution of 15 % is inherent/ included in the PIM act, there is no evidence of any contribution from farmers, as revealed in the study except collecting irrigation charges. It is clearly brought out in our analysis that awareness is low, primary stakeholders involvement in the process of management is low, commitment and contribution to the cause are lacking. This is mainly due to the fact that irrigation department is not willing to devolve powers. All the major activities are still carried out by irrigation and revenue departments, leaving only the responsibilities of water management to the WUAs. WUAs have become more dependent on department funds. Poor awareness, marginal commitment and low involvement of the primary stakeholders talks volumes and question the seriousness and commitment of the

implementers. In the absence of devolution of powers to the WUAs, people consider it as a government programme and that runs only with government funds. Interestingly, WUAs are becoming a political lobby group and demanding their political and financial share. It is also true that there is no commitment or sense of ownership among the farmers. As Andhra Pradesh is considered a pioneer in the group approach in eradicating poverty and these groups are managing to sustain financially, it is time to replicate the group approach in irrigation reforms involving all classes of people with due consideration to the lessons drawn from successful informal irrigation management institutions. Thus there is need for strengthening water users associations to manage the operation and maintenance in particular of the age old canal systems in the deltaic district as the utilization of irrigated land against the potential created is on the decline.

Recognizing the serious problems associated with the use of chemical pesticides and fertilizers, SERP decided to decided to upscale the NPM into wider regions with community participation and dissemination of knowledge through self-help groups and its federations through Indira Kranthi Patham (IKP). As per the annual report of the department of rural development, 13.81 lakh acres with 3.18 lakh farmers across 3171 villages in 18 districts of the state have been covered in 2008-09. These NPM activities are undertaken in convergence with NREGS, Total Financial Inclusion, NEDCAP, Soil Forestry, Departments of Agriculture, Horticulture and National Centre for Organic Farming and Health and Nutrition. Reduction in hospitalization due to pesticide poisoning; reduced cost of cultivation; reclaiming of mortgaged lands; increase in land lease by small and marginal farmers; increased cooperation with large farmers thereby savings in the procurement of inputs and arresting of migration; and increase in productivity of crops are a few of the important benefits noticed with Community Managed Sustainable Agriculture (CMSA) CMSA. SERP has planned to scale up these activities to 100 lakh acres by 2013-14. Thus (CMSA) model holds the key for integration of small and marginal farmers into sustainable agricultural practices.

### 4.4.1.2 Technology Support

While irrigation and fertilizers are important inputs needed to enhance production, judicious use of chemical fertilizers is much more important for sustainable agriculture. The recommended NPK ratio for balanced and judicious use of chemical fertilizers is 4:2:1. At the state level, the figures look good but at the district level one can observe wide variation. District wise consumption of fertilizers data reveals that there is wide disparity between districts in fertilizer use. Data shows that while 9 out of 22 districts use about 150 kgs and less than 150 kgs of fertilizer, 9 districts use 225 kgs /ha and more than 225 kgs/ha of fertilizer. There is a need for extension as well as training to the farmers in judicious use of fertilizers as analysis has shown that fertilizer use has direct and positive relation with yield per

hectare. Electronic media can be used for educating farmers on balanced use of fertilizers. Further, the studies showed that improvement in the distribution of density of fertilizer sale point is also responsible for increase in fertilizer consumption and hence efforts should be made for increasing the sale points in those districts where per hectare consumption is low. Hence fertilizer-use per hectare should be enhanced wherever necessary and organic fertilizer-use should also be encouraged to improve productivity of crops.

Micronutrient deficiency in Andhra Pradesh soils has emerged as a major constraint in crop productivity. While there are vast areas deficient in Zinc, Sulphur, Iron and Manganese are copper deficiency is also observed in a few areas in the state. ICRISAT study on micronutrients in APRLP watershed clearly indicated that there is substantial gain in yields of maize, green gram, castor, and groundnut with use of micronutrients. The percentage of increase over control grain is 79, 51, 61, and 28 % respectively of these crops. The same study also showed diagrammatically the economic gains per hectare and increased net profit per hectare due to use of micronutrients. Thus, little care will result in substantial gains to the farmers and lead to agricultural growth. There is a need for replication of these practices at the farmer level with planned training and extension services. In addition, NPM/IPM technology should be strengthened to reduce expenditure on pest management as well as increase productivity of crops.

Like irrigation, fertilizer, and micronutrients, seed is a critical input in enhancing agricultural production. Quality seeds appropriate to agro-climatic zones, timely availability, affordable prices and sufficient quantities are important to elements that can boost production. All these are essential as land resources are scarce and increasing the productivity of existing land is of prime importance. The state has a huge institutional framework for seed production both in public and private sector. The increasing trend indicates the high rate of adaptability of farmers to improved seeds. District wise distribution of seeds shows that drought prone districts have benefited the most. However, in order to achieve higher growth in agricultural production, there shall be continuous efforts to enhance seed replacement rate of different crops. There is enough literature and reports on spurious seeds especially cotton and other commercial crops which cause heavy loss of investment to farmers. Though there are stringent laws, farmers need enough awareness on these issues. There is a need for Seed Atlas of Andhra Pradesh for favourable seed production areas and safeguarding seed production areas. Further Seed Banks and Seed grids should be promoted. In addition seed village concept and buy back seed policy should be implemented on a wider scale.

**4.4.1.3 Technology for the Sustenance of Soil Health**

Maintaining of soil health and its improvement plays are important for the state economy not only for increasing food grain production but also to reduce the use of chemical fertilizer that can reduce input costs. Agricultural Scientists have opined that the accumulated soil phosphorous in several parts of the state offers a great opportunity to re-orient ourselves to reduce phosphorous fertilizer input in crop production. For instance, studies of ANGRAU have revealed that P fertilizer input can be reduced from 25 to 75% from current recommended levels in select areas, particularly in medium to heavy soils in different crops. Some of the districts in which such prospects exist are Guntur, Nizamabad, Anantapur, Karimnagar, Warangal and Parts of Kurnool. Special focus is needed to popularize the economic use of P fertilizers to different crops. Further the use of organics on regular basis is an important aspect which is yet to become a reality due to several reasons. Supply of green manure seeds in time, promotion of viable organic manure manufacture industry, incentives to convert urban waste to useful organics and employing of micro-organisms in soils and in preparation of organic manures are to be stepped up to make use of organics in agriculture a reality. The city of Hyderabad produces roughly 4000 to 5000 lakh tons of municipal solid waste annually and offers a good potential to convert it into compost. These measures for using more organics for agriculture would go a long way in sustaining soil health, to support and to improve crop yields. Thus micro-nutrient deficiency addressing technology should be in place to improve productivity of crops.

Popularizing pulses in rice-fallow and rain fed production systems is needed to increase their production and improve soil health for saving nitrogenous fertilizers in rice production by disseminating high-yielding and pest-resistance varieties of black gram, green gram, lentil, chickpea, and pigeon pea for improving irrigated crop technologies. SRI cultivation should be encouraged to improve paddy and sugarcane yield, to conserve water and to reduce cost of production. There is a need for developing and disseminating varieties and practices to enhance the quality of traditional crops such as rice, groundnuts, cotton, maize and sorghum to fetch higher prices from *niche markets,* that is, make them high value crops (HVCs). For example, confectionary groundnuts, quality-protein maize, maize for poultry feed and ethanol and sorghum for beer have the potential to augment incomes in the state.

Dryland technology is another area to be focused upon for higher production. Watershed Technology should be implemented in the Sustainable Livelihoods Model. Further, making full use of biotechnology, taking into account bio-safety concerns, developing stress-resistant crops that respond well to threats of drought and pests is needed. Mixed cropping system should be encouraged in areas

where mono-cropping system is in practice especially in districts like Anantapur. Farm ponds should be encouraged to harvest rain water for recharging groundwater and to overcome moisture stress for the rain fed crops in dryland areas. Added to this, rationalizing of water use and improvement in rainwater productivity (Rs./ha/mm of water) holds the key in rain-fed agriculture. Soil health management is another important area that deserves attention. Soil fertility that can be enhanced through biomass recycling, tanks de-silting and recycling of silt for improving soil health has be undertaken. There is need for capitalizing on small water bodies for aquaculture in rain fed areas. In dry-land areas farm mechanization through custom hiring centres has to be explored. Importance should be given to oilseeds, pulses and coarse cereals based rain fed agriculture. Further, cultivation of paddy must be discouraged particularly in drought situations or should be issued with drought warning. Rainfed horticulture with supplemental drip irrigation and short rotation forestry can be given priority. Crop diversification and introduction of high value crops (medicinal and aromatic) may help in improving the economic scenario of farmers in dry land areas. As there is demand for organic products from Netherland, UK, Germany, Beligium, Sweeden, Switzerland, France, Italy, Spain, America, Canada, Saudi Arabia, UAE, Japan and Singapore, we have to utilize this opportunity in the 12$^{th}$ plan.

**4.4.1.4 Infrastructure**

In addition to the steps for increasing production, there is need for minimizing post-harvesting losses by strengthening required infrastructure. Developing Research and Development infrastructure facilities for seed production is also very essential. Placing infrastructure for realtime pest surveillance at micro and macro scales and informed advisery to farmers may form a key strategy for achieving desired results. Most importantly we need strong and dependable cold chain facility and sufficient refrigerated transport facility. To be more specific cold storage facilities should be developed at all international airports in the country. The concept of Value Added Centres (VACs) or Produce Consolidation Sheds (PCSs) as followed by Gujarat Agro Industries Ltd should be promoted to facilitate consolidation of farm produce at the district level. Developing railway sidings near storage silos and major mandis is also essential.

Irrigation is an important input for agricultural growth and has a positive relation with yield per hectare. Irrigation infrastructure, major, medium and minor irrigation systems should be strengthened to enhance agricultural production. In view of shrinking of tanks and canal irrigation sources and stabilize long standing returns to investment, there is need to conserve water and explore the possibility of diverting canal sources in neighboring districts to at least fill tanks.

**4.4.1.5 Extension Support**

Changing agricultural landscape and emerging agri-business scenario call for redesigning agricultural extension strategies to meet various needs. Pluralistic extension needs to be promoted and strengthened. The functional and operational linkages between KVK and ATMA should be reinforced. There is need for strengthening linkages between KVK & ATMA and KVKs and create a single widow delivery system. Effective partnership with private extension system will be the key for the success of agricultural extension. Emergence of agri-business extension is expanding its focus from production orientation to value chain orientation. Human resource development is a critical input for redesigning agricultural extension at all levels. Concept of model farmer as adopted in Andhra Pradesh is effective in rapid transfer of technology from farmer to farmer. Efforts have to be made to encourage youth to setup agri-clinics. Extension delivery needs to be strengthened in frontier areas like precision farming, climate resilient agriculture and market led agriculture. Special strategies are needed for difficult areas with disadvantaged farm youth and women. Mobile numbers of farmers are to be gathered and arrangements have to be made to communicate latest information to farmers through short messages on mobile phones. To sum up, there is need for wide spread use of new technologies, removal of commodity movement restriction and also allowing exports.

**4.4.2 Strategies for Improving High Value Commodities Production Structure**

In order to address the identified concerns the following strategies need attention:

**4.4.2.1 Institutional Support**

Institutional support is pivotal for improving production of high value commodities. Horticulture in the state needs a special boost since it is high volume high value trade but with highly perishable commodities. Encouraging agri-business for processing, export, and/or retail chains is needed for this . Commodity growers' associations/Production companies should be promoted at the farmer level to facilitate bulking, grading, and storing of produce and selling directly to processors through appropriate market linkages and also to facilitate farmers to adopt schemes offered by various government departments related to horticulture. Well-organized retail network spread across the state and strong farm–firm linkages through contract farming will go a long way in enhancing production. Hubs of processed commodities, for example mangoes for juice and pulp; grapes for juice and wine; maize for livestock feed and fuel; sorghum for livestock feed and fodder, fuel and beer; tomatoes for ketchup or sauce; poultry for meat and egg powder to the Gulf countries and the EU have to be encouraged.

**4.4.2.2 Technology Support**

Adoption of modern proven production technologies like nursery raising on raised beds and in plug trays under insect proof net house; cultivation of hybrids for greater productivity, ridge planting; earthing up in root crops to avoid greening and quality improvement; staking of tomato (trellising) to increase the marketable yield by 10 %; sprinkler irrigation for leafy vegetables and gourds; drip irrigation; Integrated Nutrient management using biofertilizers to reduces usage of chemical fertilizers and also pollution; foliar application of nutrients for effective utilisation and deficiency correction; Integrated Pest and disease management; off-season/ protected cultivation under shade net house and intercropping of vegetables in orchards during pre-bearing period are to be focused upon. Value addition to produce through organic cultivation of cashew, jaggary, chilly, soybean, turmeric and ginger in identified areas may be encouraged. Fruits are finding niches in rain fed and water-scarce areas, where watershed programs are operational. Among fruits, areas under mangoes, grapes, guavas, and papaya are significantly expanding. Watershed technology should be harnessed to facilitate crop diversification

**4.4.2.3 Infrastructural Support**

Agro processing units should be strengthened and more units need to be promoted to accelerate crop diversification towards high value commodities. Road connectivity should be given priority to connect High Value Commodity Growers to the markets. Greater private sector participation in developing infrastructure (like cold storage, refrigerated vans), and agri-business by offering incentives and reducing bureaucratic hurdles is the need of the hour. Robust horticulture data system having necessary capacity, capability and flexibility to deliver desired information, at the time and in the form it is required, so as to meet rapidly growing information needs in the emerging development context. There is needed for focusing government investment on logistic and infrastructure improvement, regulatory systems and trade promotion, and policy reform on easing regulations, monitoring legal aspects of trade and finance, alleviating social disruption and increasing vegetable consumption.

# 5. ALLIED AGRICULTURE

## 5.1 Livestock

Allied Agricultural sector - Livestock plays an important role in providing nutrition, food security and livelihood to the poor. Its development is based mostly on supply than on demand as present levels of consumption are low. However, demand also has to be taken into consideration when the supply is growing at a high rate. If the market conditions encourage private investment, there is no need of government intervention and the sub-sector can grow on its own. The livestock in Andhra Pradesh contributes around 5.6% of the state GSDP and 29.12% of its agricultural GSDP. Importantly, within the agriculture sector, livestock sector is more stable in terms of fluctuation in growth than the crop sector. Andhra Pradesh has emerged as the largest in terms of meat and egg production and the second largest in milk production. However the state is lagging behind in terms of productivity especially with respect to milch animals. Also there are issues associated with feed and fodder availability and requirement. If state can make efforts to improve in these aspects, the livestock sector in the state has great potential for further growth in future.

Analyses of past performance, fixing targets for future and the Perspective for the next ten years covering 12th and 13th Five Year Plans of Andhra Pradesh is presented in this section.

## 5.1.1 Performance in the 10th and 11th Five Year Plans

As growth rates computed for shorter duration are not dependable, they are computed for the nine year period of 10th and 11th Plans, using log-linear trend equations. These growth rates indicate that the livestock sector has grown at an annual rate of 6.1% as against 6.4% in the crop sector. Though the growth rate of the livestock sector is slightly lower, it is more stable than that of the crop sector. The index of instability of the livestock sector is only one-third of the crop sector.

**Table 5.1.1: Average Annual Growth Rates of Crop and Livestock Sectors**

| Sector | 10th Plan | 11th Plan | Combined | Instability Index |
|---|---|---|---|---|
| Crop Sector | 4.63 | 7.22 | 6.40 | 12.44 |
| Livestock | 6.55 | 8.13 | 6.10 | 4.26 |
| Crop & Livestock | 4.97 | 7.41 | 6.30 | 8.23 |
| Agriculture | 4.94 | 7.16 | 6.00 | 6.71 |
| GSDP | 8.97 | 7.93 | 8.40 | 2.36 |
| Share of Livestock in GSDP (%) | 6.25 | 5.55 | 5.87 | - |
| Share of Livestock in Agriculture (%) | 40.45 | 30.09 | 30.77 | - |

**Note**: 1.Growth Rates for the combined period are estimated from log-linear trend equations; 2. Index of instability is the standard deviation of annual growth rates for the combined period.

The growth rate of both sectors accelerated during the 11th Plan period, but the crop sector showed greater acceleration than the livestock sector. As a result, the share of the livestock sector in the total (crop and livestock sectors) declined from 40.5% in the 10th Plan to 30.1% in the 11th Plan.

**Figure 5.1.1: Average Annual Growth Rates (%)**
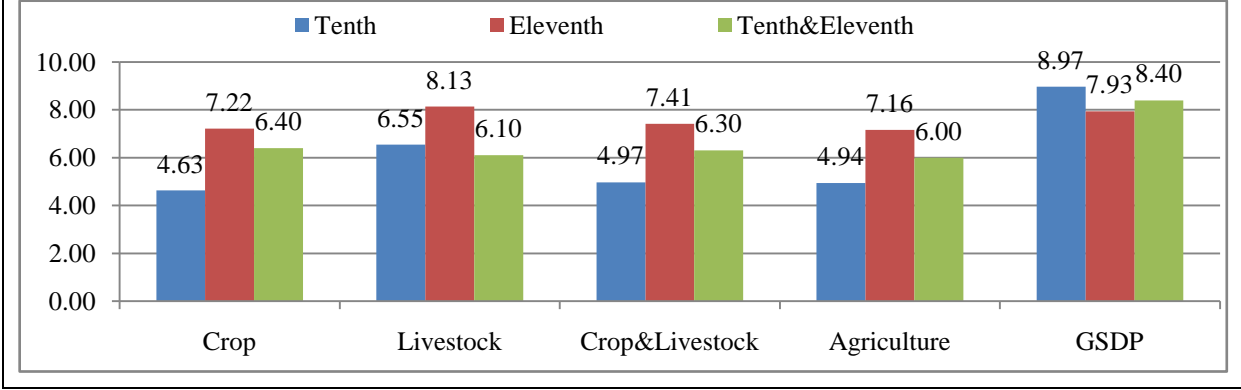


**Source**: DES.

Livestock sector consists of three sub-sectors of, milk, meat and eggs. The performance of these sectors in the eighties and nineties is also important because a sector cannot grow at a high rate if it has reached the saturation. The growth rate in the past three decades indicates that the poultry sector achieved a high growth even in the eighties. The production of eggs grew at 7.8 % per annum in the eighties as against an insignificant growth of meat production and a moderate growth of milk production at 4.5 % per annum. Thus, poultry sector was a growth engine for the livestock sector in the eighties.



Figure 5.1.2: Annual Growth Rates of Crops and Livestock Sectors
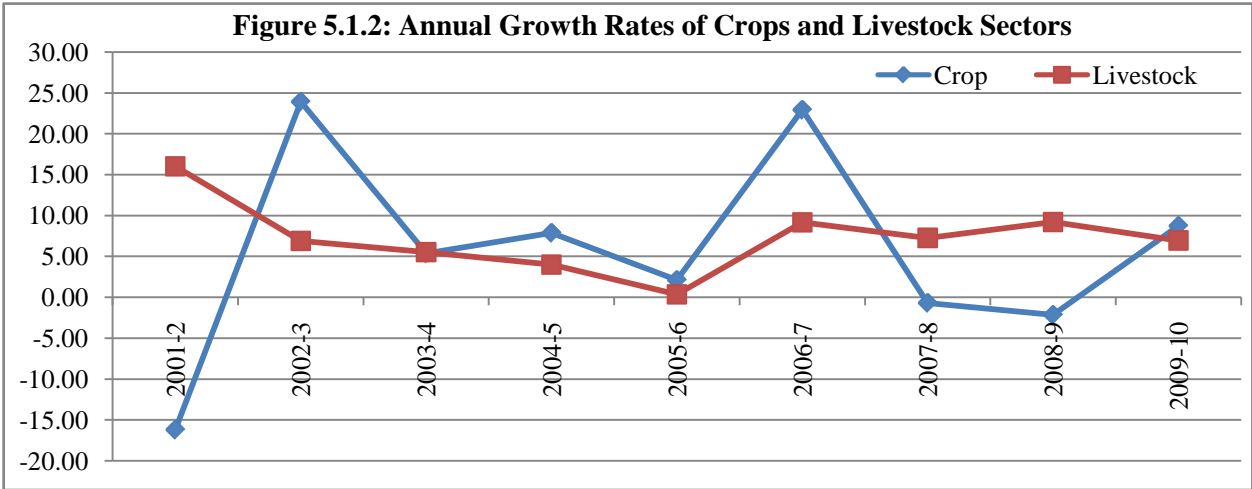
But the decade of nineties is quite distinct with all the three components growing at an extremely high rate. The growth rate of poultry accelerated to 10.2 % per annum and meat attained a growth rate of 9.3 %. Milk has also showed high acceleration with the growth rate rising from 4.5 % to 6.3 %.

Even in the present decade only milk has maintained a high and accelerated growth rate. Poultry sector subjected to steep deceleration, with a growth rate of 4.1 % per annum, appears to have reached saturation in which case maintaining this growth will be an effort in future. The meat sector has grown at 7.7 % and it will be difficult to maintain this high growth in future as the state ranks first in per capita availability of egg as well as meat.

**Table 5.1.2: Growth Rates of Milk, Meat and EGG**

| Period | Milk | Meat | Egg |
|---|---|---|---|
| 1979-80 to 1990-91 | 4.5 | 1.3[ns] | 7.8 |
| 1990-91 to 2000-01 | 6.3 | 9.3 | 10.2 |
| 2000-01 to 2009-10 | 6.7 | 7.7 | 4.1 |

Note: 1.Growth Rates for the combined period are estimated from log-linear trend equations.

ns= Statistically not significant

Per capita availability of livestock products increased significantly in the present decade, partly due to high growth of production and partly due to low population growth rate, especially since 1991. The population growth rate of the State declined from a high level of 2.20 % per annum in the 1980s to 1.37 % in the 1990s and 1.06 % in the present decade.



Figure 5.1.3 Growth Rates of Livestock Products
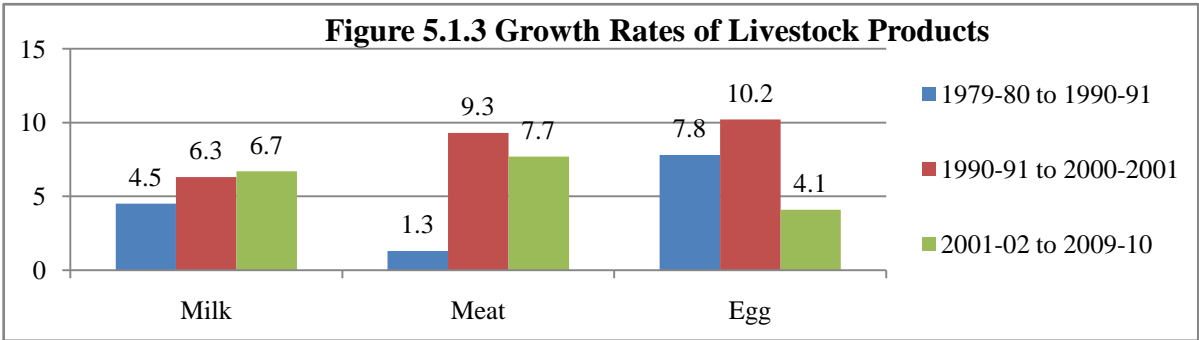
Per capita availability of milk increased three fold and reached 345 grams per day by 2009-10. The per capita availability of eggs increased from a low level of 38 per annum in 1981 to 234 in 2009. The meat sector also showed a similar high performance. The availability of meat increased from 126 grams to 683 grams per month. Thus, the per capita availability of poultry and meat products increased six and five times respectively, which is much higher than the increase in the milk sector.

**Table 5.1.3: Per Capita Availability of Livestock Products**

| Year | Milk (Grams/Day) | Eggs (No./Year) | Meat (Grams/Month) |
|---|---|---|---|
| 1981-82 | 109 | 38 | 126 |
| 1991-92 | 121 | 57 | 124 |
| 2001-02 | 209 | 175 | 364 |
| 2009-10 | 345 | 234 | 683 |

Note: Population growth rates are 2.20, 1.37 and 1.06 % per annum during the last three decades.



**Figure 5.1.4: Per Capita Availability of Livestock Products**
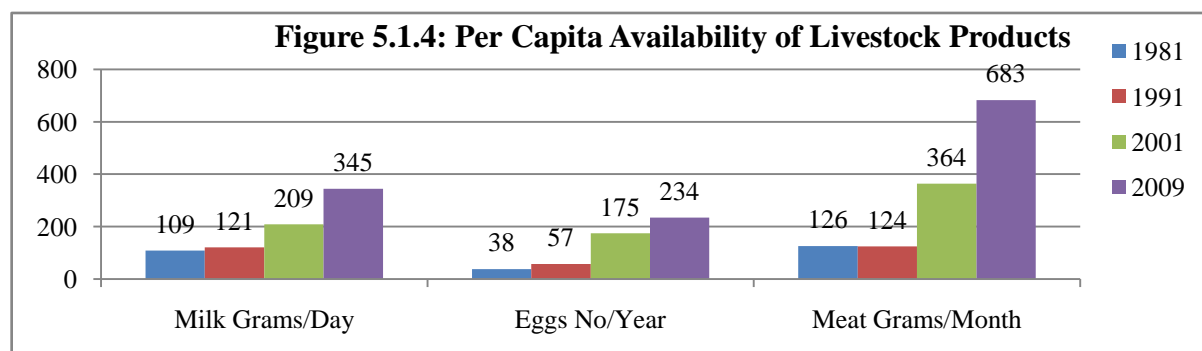
## 5.1.2 Perspective of Development in the 12th Five Year Plan

The State has to concentrate on the milk sector in the next ten years for several reasons. Per capita consumption of milk is not high even now. Secondly, the productivity level of milch animals is very low in the State. The yield rate in the state is not more than 4 litres per animal per day because of low improvement in the cross breeding (CB) programme. There is a great scope for improving the milk yields in the State. While the productivity of CB cow is higher than Haryana in the State, the proportion of CB cows is very low, pushing down the milk yield in the State. The State stands at a low position - 15th rank in bufffalo yield and 18th rank in the case of non-descript cow yield. As against the median yield of 4.706 litres per day in West Bengal and Gujarat, the State has a low yield of 3.928 litres per day. Even if the State reaches the median yield, there is great scope to increase milk production in the State.

**Table 5.1.4: Rank of Andhra Pradesh in the Production of Livestock Products**

| Product | Quantity | Rank of AP |
|---|---|---|
| Milk-2010-11 (Lakh MT) | 112.04 | 2 |
| Per Capita Availability (Grams/Day) | 345 | 8 |
| Meat-2010-11 (Lakh MT) | 7.47 | 1 |
| Per Capita Availability (Grams/Month) | 683 | 1 |
| Eggs-2010-11 (Nos. in Crores) | 2013 | 1 |
| Per Capita Availability (No./Year) | 234 | 1 |

**Table 5.1.5: Levels of Milk Yield by Type of Animal in AP in a Comparative Perspective**

| Species | Yield/Day | Rank of AP | State with Highest Yield | Highest Yield | Median States | Median Yield |
|---------|-----------|------------|-------------------------|---------------|---------------|--------------|
| N.D. Cow | 1.776 | 18 | Punjab | 6.013 | BIH & TN | 2.831 |
| C.B. Cow | 7.189 | 9 | Punjab | 10.409 | AP & HAR | 7.174 |
| Buffalo | 3.928 | 15 | Punjab | 8.504 | WB & GUJ | 4.706 |

Another source of growth is the change in the composition of milch animals. The proportion of CB cows in the breedable cows is only 25.92 % and can be increased substantially. Presently the proportion of CB cows is increasing by 1.68 % points every year. This has to be rasied to 3.0 % points a year. This can increase the proportion of CB cows to about 60 % in ten years, which represents the present average in Chittoor and Srikakulam.

**Table 5.1.6: Percentage of Cross Bred and Graded Females**

| Year | Cross-bred Adult Female Cattle (Lakhs) | Percentage of CBC | Graded Buffalo (Lakhs) | Percentage of Graded Buffalo | Overall Percentage of CB Cow and GR Buffalo |
|------|----------------------------------------|-------------------|------------------------|------------------------------|---------------------------------------------|
| 1993 | 2.23 | 7.36 | - | - | |
| 1999 | 3.19 | 10.94 | - | - | |
| 2003 | 5.62 | 19.22 | - | - | |
| 2007 | 9.20 | 25.92 | 15.83 | 42.7 | 39.51 |

In the case of buffaloes, the present ratio of graded is 42.7 % which can be raised to 2.0 % points per annum so that this proportion also reaches about 60 %. In the case of both the species, improvement in feeding is the major requirement as the conversion from local to crossbred animals will result in high feed demand. The availability of fodder for the growing livestock population in the state is a major concern.

### 5.1.3 Growth Targets

The growth targets are fixed first for poultry and meat sectors. It is presumed that the growth rate of poultry and meat sectors can be maintained at 4.0 % and 6.0 % per annum. It implies that poultry sector will not be subjected to further deceleration in growth and meat sector will not face severe deceleration in growth. Presently, the share of milk, meat and eggs in livestock output is 63.5%, 24.7% and 11.8 % respectively. The overall growth target for the livestock sector is fixed at 6.5 %, keeping in view the previous highest performance and the constraints on the development of poultry and meat sectors. In this situation, the milk sector has to grow at 7.16 % per annum.

**Table 5.1.7: Growth Targets for Sub-sectors of the Livestock Sector**

| Product | 1990s | 10<sup>th</sup> & 11<sup>th</sup> Plan | 12<sup>th</sup> Plan Target |
|---|---|---|---|
| Milk | 6.3 | 6.7 | 9.1 |
| Meat | 9.7 | 7.7 | 7.0 |
| Egg | 10.2 | 4.1 | 4.0 |
| Livestock Sector | -- | -- | 8.0 |

**Note**: Growth of other components like hides and skins and wool is ignored assuming that they will also grow at the same rate as the meat sector

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A second variant of high growth is also considered. The targeted growth of the livestock sector is fixed at 8.0 %, instead of 6.5 %. In this case, the growth rate of the meat sector is fixed at 7.0 % and that of the poultry sector at the same rate of 4.0 %. Then the milk sector has to grow at 9.1 % per annum. If proper interventions are made, it may be possible to raise the growth rate of the milk sector from the existing 6.7 % to 9.1 %.

A major concern in achieving the projected growth in livestock production in the state during the 12$^{th}$ plan is availability of fodder. The total fodder requirement for the estimated 3 crore livestock in the state is about 80 million tons (i.e. @ 7.5 Kgs per day per livestock unit). However, currently the state has fodder supply of only 24.3 million tones (21.6 million tones dry fodder and 2.7 million tones green fodder), thereby having a deficit of 55.7 million tones. Fodder supply may therefore emerge as the main constraint in livestock development in the state during the 12$^{th}$ plan period and in future. Similarly is the case of feeding poultry.

**5.1.4 Strategy**

A two-pronged strategy has to be adopted for achieving the targeted growth. The districts in the state can be divided into the following categories on the basis of the importance of cow and buffalo. Artificial insemination has to be strengthened in the areas of cows. In the areas of buffalo, even natural service can be suggested with quality bulls. In the districts with high use of animal power for agriculture, farmers may prefer indigenous breeds of higher milk yield rather than artificial insemination. There are nine districts with high use of animal power in agriculture. Livestock owners may prefer improved indigenous varieties rather than exotic varieties.

Fodder becomes a major constraint for the growth of the milk sector. It is desirable that green fodder may be developed on common and fallow lands. This would be possible if this programme converges

with NREGS. Already such measures are under implementation in the State and more emphasis is to be given to it in the 12th Plan period.

Development of meat sector requires concentration in the districts where the density of small ruminants is already high. It is found that five districts have high population of small ruminants exceeding 20 lakhs per district and another ten districts have more than 10 lakhs. The focus in these districts should be on the breed improvement of small ruminants.

**Table 5.1.8: Distribution of Districts by the Importance of Cow and Buffalo**

| Sno | Category | No. Districts | Names of Districts |
|---|---|---|---|
| 1 | Completely Cow (<200 buffaloes per 1000 cows) | 2 | SKL; CTR |
| 2 | Completely Buffalo (14000 - 28000 buff. / 1000 cows) | 3 | KRI; GNT; PSM |
| 3 | High Cow (200-1000 buff. / 1000 cows) | 2 | VZM; ADB |
| 4 | High Buffalo (2000 - 7000 buff./ 1000 cows) | 10 | EG; WG; NLR; KDP; KRL; HYD; NZB; KRM; WRL; NLG |
| 5 | Balanced (1000-1800 buff. / 1000 cows) | 6 | VSP; ATP; MBR; RR; MDK; KHM |

Note: State Average: 1981 adult female buffaloes per 1000 adult female cows

**Table 5.1.9: Districts Classified by Percentage of CB/Graded among Adult Female Bovines**

| S.No. | CBC / GRB in Adult Females (%) | No. Districts | Names of Districts |
|---|---|---|---|
| 1 | Less than 10 | 5 | MBR; NZB; ADB; KNR; WRL |
| 2 | 10 – 20 | 6 | NLG; KHM; MDK; KDP; NLR; ATP |
| 3 | 30 – 40 | 2 | PSM; RR |
| 4 | 40 – 50 | 7 | SKL; VZM; VSP; EG; WG; GNT; KRL |
| 5 | > 69 | 3 | KRI; CTR; HYD |

Note: State Average: 28.2 %

**Table 5.1.10: Districts Classified by Density of Work Animals**

| S.No. | Pairs of Work Animals per 100 ha of Net Area | No. of Districts | Names of the Districts |
|---|---|---|---|
| 1 | Less than 12 | 7 | EG; WG; KRI$; GNT; PSM; NLR; KDP |
| 2 | 15 – 17 | 3 | CTR; ATP; KRL |
| 3 | 25 – 27 | 3 | NLG; MBR; VZM |
| 4 | 31 – 37 | 6 | KHM; NZB; ADB; MDK; RR; VSP |
| 5 | Greater than 40 | 3 | SKL; KNR; WRL* |

Note: State Average: 22 pairs per 100 hectares of net area sown
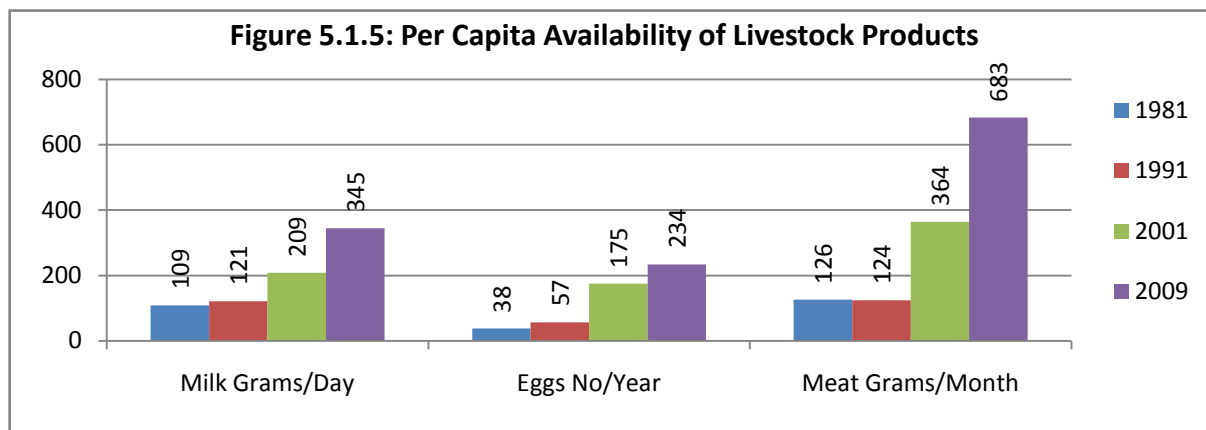* Highest; $ lowest

**Table 5.1.11: Districts Classified by Size of Small Ruminant Population**

| S.No. | No. of Small Ruminants (lakhs) | No. of Districts | Names of the Districts |
|---|---|---|---|
| 1 | Less than 10 | 8 | SKL; VZM; VSP; EG; WG; KRI; RR; HYD |
| 2 | 10 – 20 | 10 | GNT; PSM; NLR; CTR; KDP; KRL; MDK; NZB; ADB; KHM |

| | | | |
|---|---|---|---|
| 3 | 20 – 25 | 3 | KRN; WRL; NLG |
| 4 | More than 40 | 2 | ATP; MBR |

State total: 3.51 lakhs



Figure 5.1.5: Per Capita Availability of Livestock Products

## 5.2 Growth Potential and Sustainability of Andhra Pradesh Fisheries

The basic objective of this section is to provide background information for developing an approach towards the sustainable development of fisheries during the 12th five year plan of Andhra Pradesh. A sustainability perspective in the approach that envisages setting a goal to producing fish for generations in a reasonably steady, sustainable way from living aquatic resources is envisaged. Fishery is one of the sub sectors of the primary sector, 'Agriculture and Allied Activities', and consists of both marine and inland fisheries that can be further classified as capture and culture fishery. A planned approach to this sector is essential because of its growth potential and its role in generating employment, livelihoods and ensuring nutritional security to the poor. A planned approach helps us utilise fishery in a sustainable manner by reducing over exploitation and imperfections in fish markets.

Andhra Pradesh has 974 kilometres of coastal line with a relatively narrow continental shelf of 33,227 km which produces a wide variety of fish and shrimps by using different crafts and gears and accounts for 2.71 % of the GSDP and 14.12 % of the agriculture GSDP at constant prices 2011-12. During the 11th five year plan period fish and prawn production increased from 9.41 lakh tons in 2006-07 to 15.60 tons in first four years which is 65.78 % increases. The government estimates shows that it will grow further in 2011-12 and reach 16.50 tons. This is a clear indication of the growth potential of Andhra Pradesh Fisheries. The main contributor to the overall growth of fisheries is fresh water aquaculture which showed a growth of 6.62 lakh tons to 12.27 lakh tones during the same period. As far as the demand side is concerned, AP has a large inland market for fresh fish in Delhi, West Bengal, Orissa, Jharkhand, Bihar, Chhattisgarh, Uttar Pradesh and Madhya Pradesh. The state contributes

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approximately 35 % of the total Indian fish export. The present position of AP in inland and international market reveals the market potential of fish and fishery products. In general the growth of culture fishery is very important to maintain the overall future growth of AP fisheries.

In capture fisheries, the growth potential of marine sector is relatively less compared to aquaculture which is evident from the catch data. The catch data shows that marine production has increased from 2.41 lakh tones in 2006-07 to 2.90 lakh tons by 2010-11. It is also projected that marine contribution will further grow to 3.01 tons in 2011-12. But the biological assessment (maximum sustainable yield) shows that the marine sector can produce a maximum of 4 lakh tones in a year sustainably which means that the sector can grow further. From the livelihoods and employment perspective, a larger section of the fisher men (5.10 lakh fishermen and their families) depend on marine fishery for their livelihoods. The current data shows that majority of them are engaged in small scale fisheries using traditional fishing crafts (14562) and motorised fishing crafts (8946). They also face poverty and lack social security. As a result, an approach to improve their welfare is essential that can be achieved through motorisation of traditional crafts, ensuring their fishing rights and by reducing their risks at sea. Nevertheless, from the sustainable point of view, it is also important to keep the number of mechanised boats at a stable level.

At present AP has 1186 mechanised fishing vessels which utilise a large part of the total fishing grounds. It is therefore, not wise to increase the number of mechanised boats further, but motorisation of traditional crafts can be encouraged to an extent. Secondly, it is also important to modernise existing infrastructural facilities, for example, landing centres (total 267 fish landing centres) harbours, improved post-harvest technologies and communication facilities. The fisher men's safety at sea also needs to be improved by introducing modern navigational and lifesaving equipment, communication equipment etc. Promoting insurance helps them in averting risk to some extent. Finally, existing relief programmes during the 45 days fishing ban needs to be continued and improved. From the sustainability point of view certain programmes, like, subsidy on oil for mechanised boats can be continued with rationalisation. There is also a need to diversify marine fisheries from inshore to offshore to reduce fishing pressure.

The reservoir and tank fisheries also contribute towards capture fisheries in the state. The state is having a total of 102 reservoirs (7 large, 26 medium and 69 small reservoirs) and 20000 tanks, that contributes almost 1 lakh tones of fish in a year. Tank based fishery activities also provide livelihood opportunities for fishing communities. In addition, fishing provides employment opportunities for local communities, in particular for those with fishing skills. Realising the yield gap of reservoir and tank fishery should be an important objective of investment in this sector. The present estimates show

that there is a scope for improving the current productivity of tank and reservoir fishery to cent percent. The average productivity of tank fishery is estimated at 750 kgs per hectare water spread area while actual potential is 1500 kgs. Current productivity of, 30 kg per ha in water spread area as compared to the actual potential of 150 kg per hectare has been observed in reservoirs. Therefore, during the present plan more attention can be given to reservoir and tank fisheries to improve their productivity. It is also important to pay attention to leasing policies in favour of poor fisherman so that fishing communities will get more benefits. Capacity building, decentralised seed production, creation of infrastructure at larger reservoirs and tanks and retail market chains will also help the sector to grow further.

Culture fisheries of Andhra Pradesh can be divided into Fresh Water and Brackish Water Aquaculture. The state stands first in brackish and fresh water aquaculture and today is one of the progressive states in India. The fresh water aquaculture fish from Andhra Pradesh is now marketed in almost every state of the country and in neighbouring countries like Bangladesh, Bhutan and Nepal. Krishna, East and West Godavari districts are the hub of fresh water fish farming. It is generally accepted that in culture fisheries the yield gaps are significant in AP and need to be filed in order to realise its full potential. Present estimates show that AP produces on an average 3 tons per ha fish while the potential is 5 tons per ha. This shows the large potential in the sector for improving production and productivity. It is also estimated that the potential area for aquaculture in the state is 75000 ha while the present production comes from 19300 ha of land. Therefore, extension of productive area can be taken as an important strategy of the present plan to increase production.  It is important to avoid risks such as outbreak of diseases like white spot syndrome which Cultured species of shrimp the *P.monodon* faced through supply of quality seeds and use of scientific practices. The present plan also should give importance to the development of quality seeds uniformly across the aquaculture areas so that farmers will get easy access to this critical input. Setting up of hatcheries, brood stock developments, revival of ponds are also important to improve production and productivity of culture fisheries.

The Indian shrimp industry including Andhra Pradesh until recently, was entirely built around the production of P.monodon. But several Asian countries like Thailand, China, Indonesia and Vietnam – have started introducing new shrimp species that are not native to Asia imported from Mexico. In South America Liptonemes Vannamei, or White shrimp, proved to be much more productive than the Asian Black Tiger shrimp. The higher productivity that was three times higher than Black Tiger shrimp results in greater profitability to shrimp farmers. Vannamei shrimp not only grew faster and could be cultured in higher densities, but were found to be less disease prone. This is mainly due to the development of technology of hatching shrimp seeds that are phatagon free – which do not carry the phatogen that is sensible to several shrimp diseases. The risk of culturing L.Vannamei is much lower

than Black Tiger. Thus, both for farmers and for exporters the introduction of L.Vannamei offers promising business opportunities. At present the Indian government has approved introduction of L. Vannamei under strict control of the Coastal Aquaculture Authority. The present plan should study the experience of farmers who adopted these species by conducting research studies and extend its culturing to larger areas based on the results of the studies.

Finally, the plan needs to adopt strategies to realize the high growth potential of aquaculture sector by giving priorities to welfare programmes and sustainability measures to marines sector because of the large dependency of small scale fisher men on marine sector for livelihood and employment. From the sustainability point of view it is important to frame policies for restricting mechanised fleet size and licensing to open seas.

## 5.3 Forestry Issues in Andhra Pradesh

Andhra Pradesh (AP) is the fourth largest state in terms of geographical area (which has a population of 84.7 million) and the second largest in terms of forest cover in the country. It has 6.38 million hectares of forest land, which constitutes 23% of the state's geographical area, and 8.24% of the total Indian forest area. The recorded forest area in the state is spread over 63,814 sq km (2,75,068 sq km of its geographical area) consisting of about 50,478 sq km of Reserved Forest (RF), 12,365 sq km of Protected Forest (PF) and about 971 sq km of Unclassified Forest(UF).

However, the actual forest and tree cover in the state is 63,814 sq. km, which is about 23.19% of the state's geographical area and 7.1% of the country's geographical area. Of the total actual forest and tree cover, about 25,827 sq km is categorized as dense forest, which is about 2,779 sq km more compared to the assessment of 1997, while the extent of open forest cover reduced from about 19,859 sq km in 1997 to about 18,810 sq km in 2001. Together, these categories constitute about 16.2% of the geographical area of the state. In addition to the recorded forest cover, the state has about 205,673 sq km of Culturable Non-Forest Area (CNFA), which has tree density of about 11.2 trees per hectare (FSI, 2001). About 62% of the RFA is in tribal areas, and around 60% in the Scheduled V Tribal Area has been declared as RF.  According to 25.11.1978 GO extended AP Forest Act, "All lands in the SAs containing trees, shrubs and coppice growth shall be forest". About 3,695 Gram Panchayats in AP have forest interface covered by 2,032,303 acres of land as per the report of Tribal Welfare Department.

Around 65% of the forest area in AP is spread over eight predominantly tribal districts in the northern part of the state. These areas are amongst the least developed in AP. Historically, tribal communities

have depended on forests for their livelihoods, both for cultivation and forest product collection. Many tribals engage in cultivation in upland forests, called podu. Podu cultivation involves the clearance of small patches of hill forests for subsistence cultivation (e.g., various crops including cereals, sorghum and millets).

### 5.3.1 Forest-Livelihood Links

NTFPs are not only an important source of income for many rural households (Reddy *et al.*, 2004) but also generate significant revenue for the state. The annual revenue from tendu leaves traded by the Andhra Pradesh Forest Development Corporation and other NTFPs traded by the Girijan Cooperative Corporation is estimated to be Rs 620 million. In terms of financial value, bamboo, tendu leaves, mahua, and tamarind are the most important NTFPs. Together, these account for over 75% of the total value of NTFPs in the state. Bamboo forests are spread over approximately 10,000 square kilometres.

The total annual production of bamboo is estimated to be 300,000 metric tonnes out of which about 200,000 metric tonnes is consumed by the paper and pulp industry and the remaining 100,000 metric tonnes by the domestic sector.

Andhra Pradesh is the fourth largest producer of tendu leaves in the country[4] and accounts for 10% of the national output. Tendu leaves' collection generates about eight million person days of employment every year for which about Rs 400 million is paid as wages. In addition, about 50 million person days of employment is generated for rolling *beedis*.

Mahua trees occur on both forest and private lands. In 2005-06, 13,706 quintals of mahua flowers (worth Rs 8.4 million) and 6,188 quintals of mahua seeds were procured by GCC, the official procurement agency. The bulk of mahua flowers and seeds, however, are directly consumed by households.

Andhra Pradesh produces about 700,000 quintals of tamarind, out of which the bulk comes from the farm sector. The Scheduled Tribes collect only about 40,000 quintals. Sal seed is not an important NTFP in Andhra Pradesh.

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[4] After Madhya Pradesh, Orissa, and Maharashtra.

### 5.3.2 Value Addition of NTFPs

An attempt needs to be made to capture as much value addition as possible at the level of primary collectors. The NTFP supply chains are unduly long and primary collectors get only a fraction of the price paid by the end-consumers. For example, collectors in Andhra Pradesh get only about 10% of the price paid by end-consumers in major cities. The current product base is narrow and there is a need to look for various alternative uses of NTFPs to improve collectors' returns and reduce future uncertainty (e.g. in case of tendu leaves). While there is scope for value addition in all NTFPs, bamboo in particular seems to have a vast untapped potential. It is estimated that the current value addition in India is only 7% compared to 23% in China and 180% in the United Kingdom (APFD, 2006). Bamboo could in fact serve as a trigger for economic growth in several parts of the country. Another promising area is medicinal plants. However, large-scale enhancement in value addition would not be possible without improvement in the rural infrastructure, which is the major bottleneck in many areas. Similarly, policy and procedural bottlenecks at the collector, producer, and enterprise level also need to be removed.

For example, it is estimated that the annual production potential of tamarind from Andhra Pradesh forests is over 200,000 metric tonnes. However, actual annual sale by the government agencies (FD and APFDC) in the past three years has been just over a quarter of this potential.

### 5.3.3 The Role of Girijan Co-operative Corporation (GCC) in NTFP Trade

Girijan Co-operative Corporation (GCC), 1956, was set up in AP, to give monopoly to the state over NTFP under a law called the AP Scheduled Areas Minor Forest Produce (Regulation of Trade) Regulation, 1979. These regulations impose restrictions on the purchase, sale, curing, processing, storage and transport of any NTFP. GCC is the monopoly agent for purchase of 35 NTFP varieties in the Scheduled Areas of the state. The prime objective of the GCC is to procure NTFP from tribals and market it to their best advantage. Because of a shift in the policy of the government, profits to the GCC are being considered more important than benefits to the tribals. Although there are 35 items in the procurement list of GCC Ltd., it procures a limited number of commodities and at very low prices compared to the market rates. It has the right to fix prices for the products it procures. It generally fixes prices at the wholesale rates which are not fair to the tribals, whose time, labour and risks taken in collecting NTFP are not sufficiently compensated. The tribals officially do not have the right to sell their produce to private traders, who pay higher prices. In fact, the tribals find the price so low and unprofitable for them that, they often cheat the GCC and sell the NTFP in the weekly markets organized in centrally located villages, or at mandal headquarters. However, according to records, GCC uses appropriate weights for their produce and the tribals are happy.

### 5.3.4 Joint Forest Management/Community Forest Management

The period between 1983 and1991 witnessed implementation of a massive social forestry scheme (CIDA-funded project) throughout the state, which aimed at plantation of fast-growing wood species in private and village wastelands and woodlots to provide more resources for domestic access and reduce the strain on forests. The social forestry schemes of the FD had attempted to relieve pressure on Reserved and Protected Forests, and to meet the subsistence requirements of the rural communities. But due to the non-availability of community lands for plantation (as a result of encroachment and privatisation of revenue wastelands) and lack of co-ordination/rapport with village communities and Panchayats, the schemes were only partially successful. Evidence suggests that farmers with small landholdings did not participate in these schemes, while bigger farmers benefited most.

After the social forestry scheme, realizing the importance of people's participation in forest management, the Joint Forest Management (JFM) approach was implemented by the Government of AP in 1992, in which all the fringe forest villagers were made partners in forest management with legal entitlement to the usufructs. People living on fringes of forests were encouraged to form Vana Samarakshana Samithis (VSS) to protect and rejuvenate degraded forest areas. After one decade, AP Government modified the JFM to Community Forest Management (CFM), promulgated in 2002. About 24,000 hectares of forest land under encroachment has been rejuvenated through the VSS.

Many studies on the JFM/CFM indicate that there has been an improvement in forest conditions and benefits that improved livelihood to local people. However, the truth is that local people have not been empowered, and the benefits have not been equitably distributed.

While nearly Rs. 10,000 million is being spent under the JFM/CFM programmes, the results are not commensurate with the money spent. This project was heavily criticized by Adivasi and support organisations for causing compulsory evictions of Adivasi families, who lost their shifting cultivation fields (known locally as podu) to the FD and suffered severe restrictions on their use of the forest. Worse still, many affected Adivasi families did not receive any compensation whatsoever for the loss of their livelihood and cultural resources.

Community Forest Management launched on the 1st November 2002 by Andhra Pradesh with the objective of 'poverty alleviation through improved forest management with community participation' was a significant departure from other traditional forestry projects which focused on afforestation or reforestation. The AP Community Forest Management Project seeks to link forest conservation and forest based livelihoods, and focuses on institutionalizing learning experiences and innovative ideas.

There have been a number of new initiatives that have emerged in the course of Project implementation that are being internalized by the communities and implementing agencies. Significant among these are initiative of institution strengthening by identifying and focusing on user groups and common enterprise groups among VSSs to address social and economic equity, business planning approach to develop mechanisms for reinvestment of incomes generated by VSSs from forest management to ensure sustainable forest management by these communities without depending on Government for financial support and enabling a definite shift in the pattern of dependence of forest dependent communities from wage to non-wage income sources from forestry operations through development and promotion of value addition and forest product based enterprises with adequate backward and forward linkages. These are in addition to a number of technical innovations in forest management techniques in nursery and planting operations, introduction of Bamboo as an undercrop in teak forests in areas where it traditionally did not occur, intensive soil and moisture conservation measures on a watershed approach to treat forests to a saturation level, preferential treatment to naturally occurring NTFP species to rejuvenate their growth and boost their yields, fire management coupling with soil conservation through shallow trenches and many more.

### 5.3.5 CFM and PESA

The State of Andhra Pradesh envisages a limited role for Panchayati Raj Institutions (PRIs) in forestry and accordingly, minimal powers have been allocated to PRIs through both JFM resolutions and Panchayat laws. While the state has devolved the decision-making process and moved from JFM to CFM, the PRIs are not involved in discharging any forest-related responsibilities. It is interesting to note that in Orissa control and management of 68 NTFPs was transferred to PRIs in 2000. The panchayati samithi has been authorized to set procurement price for these NTFPs, which in turn, has to be ratified by Gram Sabhas. All the NTFP traders operating within the jurisdiction of the Gram Panchayat have to register with it and pay a registration fee (FGLG, India, 2007).

Though the state has adopted the Panchayat Extension to Scheduled Areas Act (PESA), the enabling rules, which are mandatory for exercising this power, came into effect only recently. Furthermore, the Andhra Pradesh Scheduled Areas MFP (Regulation of Trade) Regulation, 1979, is applicable in Scheduled Areas, which allows GCC Ltd., Vishakhapatnam, to act as the sole agent for the purpose of purchase and trade of NTFP on behalf of the government. This is contradictory to provisions of PESA, which vests the control of NTFP with Grama Sabha in preference to any other institution/organization.

It is important to create an enabling environment and enhance PRIs' regulatory powers and capacity (including adequate human resource) for devolution to be meaningful. In many cases, conflict between

the role of PRIs and Forest Protection Committees created under the JFM programme also needs to be resolved. The need to address these issues has become even more urgent due to the passage of the new forest rights law (Recognition FRA 2006).

**5.3.5 Forest Right Act-2006 and its progress in AP:**

Forest Right Act – 2006 became operational in AP from 2008. This is a new and long awaited reform that proposes to correct historical injustice done to forest dependent communities. It confers both individual and community rights on  forest community. The progress on this front as on 2010 was that out of 6,381,400 ha forest estate,  3,22,955 individual (9,49,518 acre / 384,420 ha), 6,903 community (10,12,844 acre/ 410,058 ha) claims were received. About 19,62,362 acres / 794, 479 ha community & private claims were approved which forms **12.4% of forest estate.** Of the total 329,858 submitted claims  98% have been processed.  A surprisingly high number of 45.3% claims have been rejected.
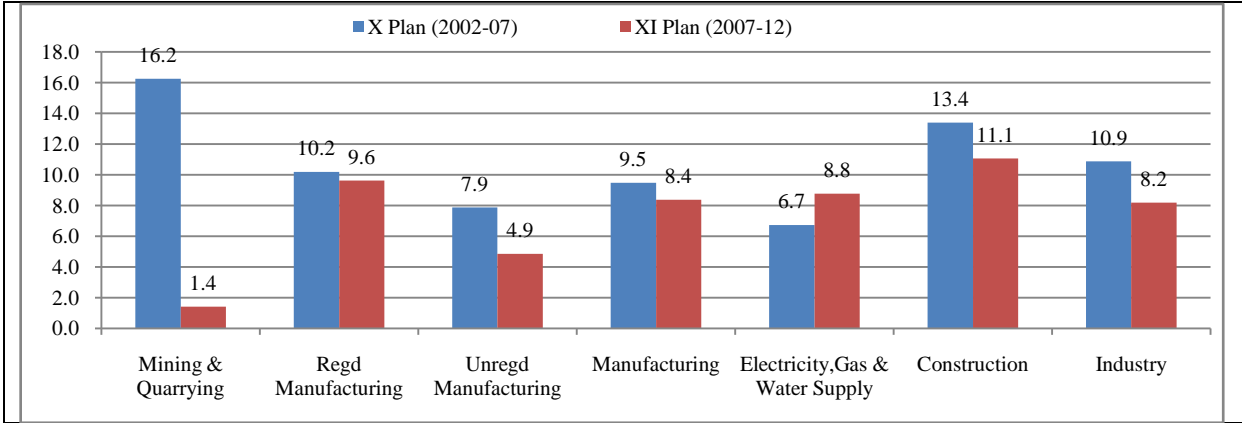
# 6. Industry

## 6.1 Industry

### 6.1.1 Growth of Industry

While the GSDP from industry in the state grew at the rate of 10.9% during the Tenth Plan it was substantially lower at 8% during the Eleventh Five Year Plan. The growth rate for manufacturing sector in the Eleventh Plan was targeted at 10-11%, but the actual performance was around 8% (Figure 6.1.1). Share of the manufacturing sector in State Domestic Product of Andhra Pradesh is 12% while its share in GDP at all India level is 15% during 2011-12. The figure also clearly shows that except electricity, gas and water supply, all the other sectors have registered decreasing growth rates of SDP during the Eleventh Five Year Plan compared to the Tenth Five Year Plan.

**Figure 6.1.1: Average Annual Growth Rates (%) of GSDP from Industry for Andhra Pradesh during Tenth and Eleventh Five Year Plans (2004-05 Prices)**



**Note**: Industry including all the sub-sectors.
**Source**: DES.

Within the industry sector, construction maintained a steady and sustained growth, growing at a rate of 9.95 %. Mining and quarrying, witnessed a huge slump during 11th Plan (Figure 6.1.1). However, manufacturing sector accounts for nearly 50% of the industrial output in the state and more than 10% of GSDP has recorded lower growth rates during this period. The slowdown in industrial growth in the post-liberalization period is accounted by the deceleration in the growth of registered manufacturing sector. This sector has to grow at a higher pace if the industry were to propel the overall growth momentum and employment.

**Table 6.1.1: Investment and Employment during 11<sup>th</sup> Five Year Plan**

| Period | Investment (Rs. Crore) | Employment | Number of proposals |
|---|---|---|---|
| 2006-07 | 6402 | 62212 | 2635 |
| 2007-08 | 8371 | 100939 | 4436 |
| 2008-09 | 8285 | 117287 | 4838 |
| 2009-10 | 17032 | 169714 | 9258 |
| 2010-11 | 22516 | 219055 | 6871 |
| 2011-12 (upto Jan – 2012) | 24439 | 201598 | 11800 |

*Source: Economic Survey, Govt. of Andhra Pradesh, 2011-12*

A close look at the investment and employment shows that huge investments have taken place during the 11<sup>th</sup> Plan (Table 6.1.1).

Further, it is informed that as per ASSOCHAM (2012) study, investments attracted till 2011 end are as follows:

**Table 6.1.2: State-wise Investments**

| States | Investments (Rs. lakh crore) |
|---|---|
| Gujarat | 16.28 |
| Maharashtra | 14.14 |
| Andhra Pradesh | 12.09 |
| Odhisha | 12.09 |
| Karnataka | 9.85 |

Andhra Pradesh investments break-up is given in the following table:

**Table 6.1.3: Break-up of investments in Andhra Pradesh**

| Sector | Investment (Rs crore) | Per Cent |
|---|---|---|
| Electricity | 3,92,925.00 | 32.5 |
| Manufacturing | 2,62,353.00 | 21.7 |
| Services | 2,39,382.00 | 19.8 |
| Irrigation | 1,40,244.00 | 11.6 |
| Real Estate | 1,40,244.00 | 11.6 |
| Mining | 3,926.83 | 2.8 |
| Total Investments | 12,09,000.83 | |

*Source: ASSOCHAM study, 2012*

**Table 6.1.4: Plan expenditure on industry in AP**

| Plan period | Expenditure on industry and minerals | Total Plan expenditure |
|---|---|---|
| Seventh Plan | 284.92 | 5978.88 |
| Eighth Plan | 540.57 | 13600.60 |
| Ninth Plan | 811.85 | 30398.23 |
| Tenth Plan | 1855.11 | 46611.83 |
| Eleventh Plan (upto Dec 2010) | 1169.67 | 68601.18 |

*Source: Annual Plans, Various Years and Eleventh Five Year Plan of Government of AP*

During the Tenth Plan, while the expenditure on industry and minerals was Rs 1855 crore out of a total expenditure of Rs 46612 crore, in the Eleventh Plan (upto Dec 2010) it was Rs 1170 crore out of a total expenditure of Rs 68601 crore (Table 6.1.4). This decline in the expenditure on industry and minerals in total expenditure shows the policy change of reduced government role giving way to an increased role of private sector in the process of industrialization.

### 6.1.2 Industrial Entrepreneur Memorandum

Industrial Single Window Clearance Act in 2002 was enacted for speedy processing and issue of various approvals/clearances/permissions required for setting up of industrial undertakings. Since the beginning of this Act, 81,279 clearances were issued to 48,449 units with a proposed investment of Rs3, 39,464 crore and an employment potential of 1154913 as on 30-9-2010 (Socio-Economic Survey, 2011) in AP. The status of implementation of Industrial Entrepreneur Memorandum (IEM) as on 30th October, 2010 after the introduction of Industrial Policy in 1991 regarding large scale industries, is shown in the following table:

**Table 6.1.5: Status of Implementation of IEMs for the Large Scale Industries (as on 30-9-2010)**

| Status | No. of proposals | Investment Proposed (Rs. Crore) | Proposed employment |
|---|---|---|---|
| Gone into production | 3012 | 63483 | 455129 |
| Under implementation | 505 | 92334 | 126734 |
| Initial stages | 1579 | 278869 | 290869 |
| Dropped | 1814 | 112218 | 299464 |
| Total | 6910 | 546904 | 1172196 |

*Source: Department of Industries, Government of Andhra Pradesh*

Out of the total 6910 IEMs for the large scale industries, only half of them have gone into production while nearly one third of the total IEMs have been dropped (Table 6.1.5). Regarding Micro, Small, Medium Enterprises Development (MSMED) Act, 2006, Government of India unveiled a policy suited for MSME sector with the prime objective of achieving 15% annual growth rate and increasing employment opportunities. About 165911 MSMEs with an investment of Rs 14448 crore and proposed employment of 1663118 were established in AP up to March, 2010 after the passing of the Act.

**6.1.3 Performance of Manufacturing Sector**

Share of registered and unregistered manufacturing sectors in SDP shows a declining trend during the last two decades compared to eighties (Figure 6.1.2). The decline in the share of registered manufacturing sector in SDP is more during the Ninth Plan (1997-02) and continued to remain so during Tenth (2002-07) and Eleventh Plans (2007- 2010). This decline has larger implications on the labour productivities of this sector. Unless the manufacturing sector grows it becomes impossible to meet the target of creating an additional employment of one million during the 12th Five Year Plan.

**Figure 6.1.2: %age shares of Manufacturing, Registered and Unregistered sectors in SDP of Andhra Pradesh (1981-82 to 2006-07) (2004-05 Prices)**
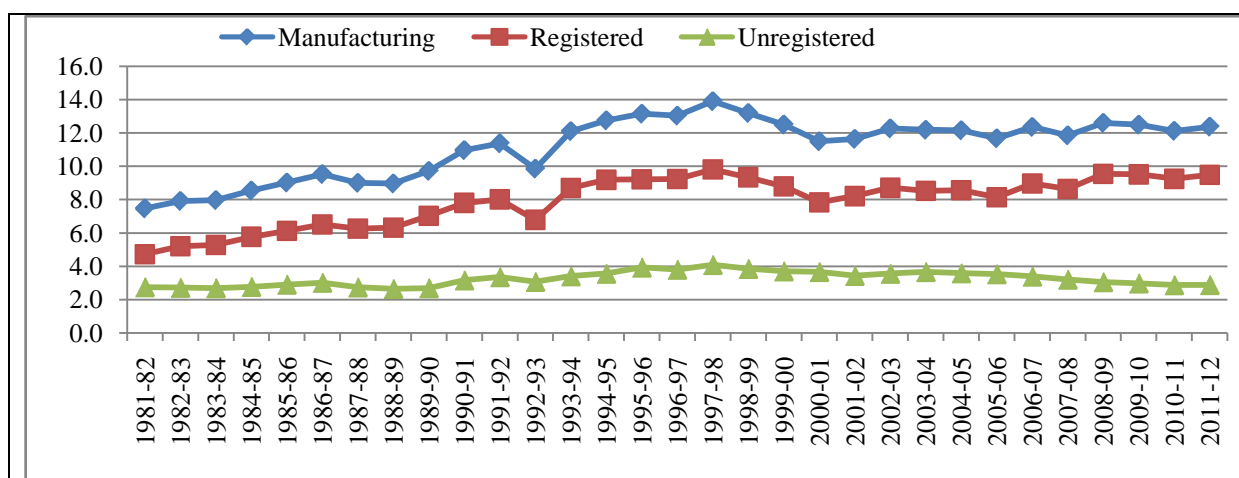


*Source: DES.*

**6.1.3.1 Registered Manufacturing Sector**

Food, tobacco products, minerals and metals, textiles, chemicals and manufacture of equipment are important industry groups in terms of their contribution to number of units, net value added, fixed capital and number of employees.  Though half of the industrial units are agriculture based, non-agro based industries account for 80.3 % of net value added and 70.9 % of fixed capital during 2007-08 (Table 6.1.6). This is because of the existence of large scale public sector units in the State.

The structure of registered manufacturing sector has not changed much in the State during 1998-99 - 2007-08.  Share of employment has increased in all sectors except for tobacco. However, share value added of all agro-based units except for wood and printing, in total value added declined in 2007-08. Among non-agro based units, the share of value added of chemicals, electrical goods and machinery units in total valued added declined during 2007-08. The share of minerals and metals in value added increased by more than 13 percentage points during this period (Table 6.1.6).

**Table 6.1.6: Share of Industry Group in the Registered Manufacturing Sector of Andhra Pradesh: 1998-99 and 2006-07**

| NIC Code | Industry Group | Units | | Employment | | Value Added | | Fixed Capital | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1998-99 | 2007-08 | 1998-99 | 2007-08 | 1998-99 | 2007-08 | 1998-99 | 2007-08 |
| 15 | Food & Beverages | 43.00 | 40.06 | 18.59 | 20.45 | 16.99 | 8.91 | 10.78 | 10.82 |
| 16 | Tobacco | 4.23 | 2.73 | 39.58 | 26.69 | 9.05 | 3.23 | 0.60 | 1.09 |
| 17 | Textiles | 3.57 | 2.95 | 5.60 | 8.30 | 5.24 | 3.12 | 7.87 | 7.44 |
| 18 | Wearing Apparel, Dressing and Dyeing of Fur | 0.33 | 0.39 | 0.48 | 0.94 | 0.20 | 0.15 | 0.04 | 0.27 |
| 19 | Tanning and dressing of leather, handbags, luggage, footwear | 0.51 | 0.50 | 0.25 | 0.54 | 0.37 | 0.05 | 0.06 | 0.27 |
| 20 | Wood and products of wood except furniture | 0.98 | 1.07 | 0.19 | 0.33 | 0.11 | 0.18 | 0.06 | 0.13 |
| 21 | Paper and Paper Products | 2.16 | 2.71 | 1.92 | 2.73 | 2.90 | 2.05 | 6.12 | 6.92 |
| 22 | Publishing, printing, reproduction of recorded media | 1.22 | 2.22 | 0.95 | 1.37 | 1.77 | 2.03 | 1.50 | 2.12 |
| 23 | Coke, refined petroleum, nuclear fuel | 0.36 | 0.29 | 0.37 | 0.32 | 2.35 | 8.18 | 1.81 | 6.73 |
| 24 | Chemicals and Chemical Products | 5.99 | 6.15 | 5.58 | 8.62 | 24.04 | 14.23 | 17.99 | 16.87 |
| 25 | Non-metallic mineral products | 4.11 | 5.03 | 4.62 | 2.69 | 2.89 | 3.91 | 1.97 | 1.68 |
| 26 | Other non-metallic products | 16.99 | 20.19 | 5.41 | 7.78 | 10.37 | 19.98 | 14.77 | 21.09 |
| 27 | Basic metals | 2.95 | 3.03 | 5.19 | 4.36 | 3.56 | 18.80 | 29.49 | 15.50 |
| 28 | Fabricated metal products except machinery and equipment | 5.01 | 4.96 | 1.51 | 3.54 | 1.14 | 2.93 | 1.00 | 1.79 |
| 29 | Machinery and Equipment | 3.49 | 3.41 | 2.95 | 2.95 | 5.31 | 3.21 | 1.53 | 2.61 |
| 30 | Electrical machinery and apparatus n.e.c. | 0.03 | 0.04 | 0.05 | 0.08 | 0.06 | 0.04 | 0.01 | 0.03 |
| 31 | Electrical machinery and apparatus | 1.91 | 2.05 | 2.84 | 3.66 | 10.34 | 4.87 | 1.94 | 2.71 |
| 32 | Radio, television and communication equipment and apparatus | 0.66 | 0.43 | 1.10 | 1.95 | 1.50 | 2.20 | 0.44 | 0.67 |
| 33 | Medical, precision and optical instruments, watches and clocks | 0.27 | 0.17 | 0.52 | 0.19 | 0.26 | 0.27 | 0.50 | 0.12 |
| 34 | motor vehicles, trailers and semi-trailers | 0.83 | 0.61 | 0.89 | 0.87 | 0.18 | 0.75 | 0.77 | 0.56 |
| 35 | other transport equipment | 0.46 | 0.20 | 1.07 | 1.09 | 1.19 | 0.65 | 0.64 | 0.35 |
| 36 | Manufacture of furniture | 0.93 | 0.67 | 0.35 | 0.53 | 0.16 | 0.27 | 0.09 | 0.25 |
| 37 | Recycling | | 0.17 | | 0.03 | | 0.01 | | 0.00 |
| | **Manufacturing Sector** | **100** | **100** | **100** | **100** | **100** | **100** | **100** | **100** |
| | Agro-based | **56.00** | **52.61** | **67.56** | **61.35** | **36.64** | **19.71** | **27.04** | **29.04** |
| | Non-agro-based | **44.00** | **47.39** | **32.44** | **38.65** | **63.36** | **80.29** | **72.96** | **70.96** |

*Source: Annual Survey of Industries, Various Issues.*

Value added of basic metal industry grew by nearly 15 percentage points in 2007-08 over 1998-99. While the value added of non-metallic mineral industry and chemical industry grew in 2007-08 over 1998-99, that of tobacco and leather industries have shown deceleration in their growth of output (Table 6.1.7). Employment elasticity with respect to output growth during 1998-99 to 2007-08 is 1.04 in textile units, 0.94 in chemical industry, 0.85 in electrical machinery units and 0.82 in paper products. It is 0.50 for printing and publishing units. Important industries in terms of number of units such as food and beverages and non-metallic mineral products have shown low employment elasticity of 0.37 and 0.32 respectively. Rubber and plastic industries also have shown low employment elasticity of 0.18 (Table 6.1.7).

**Table 6.1.7: Growth of Value Added and Employment in the Registered Manufacturing Sector in AP: 1998-99 to 2007-08**

| NIC Code | Description of Industry | Growth of GVA | Growth of Employment | Employment Elasticity |
|---|---|---|---|---|
| 15 | Food & Beverages | 6.0 | 2.2 | 0.37 |
| 16 | Tobacco | -1.8* | -2.8 | 1.56 |
| 17 | Textiles | 5.6 | 5.8 | 1.04 |
| 18 | Wearing Apparel, Dressing and Dyeing of Fur | 18.8 | 15.9 | 0.85 |
| 19 | Tanning and dressing of leather, handbags, luggage, footwear | -7.2* | 4.0* | -0.56 |
| 20 | Wood and products of wood except furniture | 12.8 | 4.8 | 0.38 |
| 21 | Paper and Paper Products | 5.7 | 4.7 | 0.82 |
| 22 | Publishing, printing, reproduction of recorded media | 10.9 | 5.5 | 0.50 |
| 23 | Coke, refined petroleum, nuclear fuel | 31.3 | 4.9* | 0.16 |
| 24 | Chemicals and Chemical Products | 5.4* | 5.1 | 0.94 |
| 25 | Non-metallic mineral products | 11.8 | 2.1* | 0.18 |
| 26 | Other non-metallic products | 13.4 | 4.3* | 0.32 |
| 27 | Basic metals | 26.7 | 0.1* | 0.00 |
| 28 | Fabricated metal products except machinery and equipment | 14.4 | 9.0 | 0.63 |
| 29 | Machinery and Equipment | 5.5* | 0.9* | 0.16 |
| 30 | Electrical machinery and apparatus n.e.c. | 4.5* | 4.1* | 0.91 |
| 31 | Electrical machimery and apparatus | 5.3 | 4.5 | 0.85 |
| 32 | Radio, television and communication equipment and apparatus | 15 | 5.6 | 0.37 |
| 33 | Medical, precision and optical instruments, watches and clocks | 13.8 | -4.9* | -0.36 |
| 34 | motor vehicles, trailers and semi-trailers | 10.7* | 1.0* | 0.09 |
| 35 | other transport equipment | 10.4 | 3.8 | 0.37 |
| 36 | Manufacture of furniture | 14.5 | 8.8 | 0.61 |
| 37 | Recycling | 27.3 | 21.3 | 0.78 |
| | Manufacturing Sector | 10.6 | 1.4 | 0.13 |

Note: * indicates that growth rates are not statistically significant
*Source: calculations based on data from ASI, various issues*

## 6.1.4 Value of Exports

In an economy, income accrued through exports indicates the performance of the industry. A close look at figure 6.1.3 reveals that IT industry contributes more than 45 % to total exports, followed by the drug and pharmaceutical industry. IT, drugs-pharmaceuticals-chemicals and engineering goods have shown progress both in their growth rate of exports and their shares in total exports. Andhra Pradesh known for its handloom sector shows very poor performance in exports. Similar is the case with the leather industry. Andhra Pradesh endowed with a rich variety of minerals however has dismal amount (figure 6.1.3) earned through export of minerals. Mineral industries have shown a negative growth of exports during this period. Though exports from agro & forest based and marine industries grew at 9.4 % during the last decade, their share in the total value of exports is gradually declining. Exports from handicrafts industry are growing at a high rate of 18 % and their share remained more or less at the same level throughout the decade. If the government could focus on creating more avenues for exports by creating better infrastructure through port and air connectivity, manufacturing sector in the state can grow to the desired extent.

**Figure 6.1.3 : Share of Production Sectors in the Total Value of Exports in Andhra Pradesh**
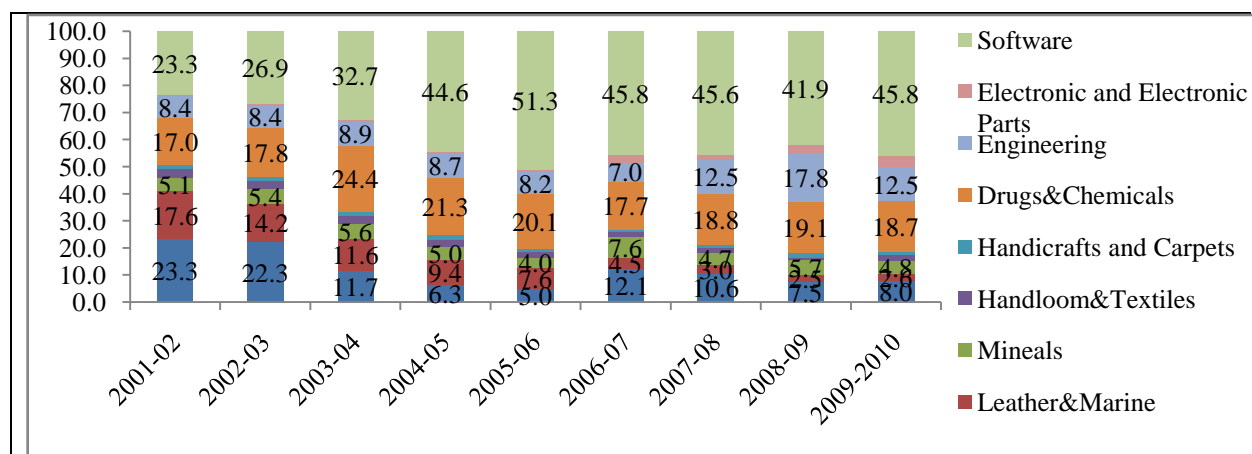


Source: Computed.

In terms of size of investment and growth of output the key sectors are listed and their importance at all-India level is given in the Table 6.1.8. All the industries mentioned below have huge potential to grow in the state.

**Table 6.1.8: Key Industrial Sectors of Growth**

| Industry | Current Size in AP (Rs. Crore) | Projected size of industry in 2015 (Rs. Crore) | Drivers of Growth |
|---|---|---|---|
| Drugs and Pharma | 17400 | 55000 | Accounts for about $1/3^{rd}$ of the bulk drugs and pharmaceuticals produced in India |
| Textiles | 10750 | 41000 | Leading producer of cotton |
| Engineering | 11000 | 38000 | Strong presence of engineering industry with large number of civil and defence research establishments |
| Agro and Food Processing | 9300 | 22300 | Leading producer of many fruits and vegetables |
| Mines and Minerals | 7800 | 21000 | $2^{nd}$ largest storehouse of mineral resources in India and around 48 minerals are available |
| Chemicals and Fetilisers | 8400 | 17000 | Ranked $3^{rd}$ in India in the production of chemicals |
| Paper | 2400 | 4700 | Leading producer of paper in India |
| Biotechnology | 560 | 4100 | Growing industry |

Source: CII.

### 6.1.5 Role of Micro-Small Medium Enterprises (MSMEs)

To achieve the given target of 9-9.5 % for the industry during the 12th Five Year Plan, there should be special focus for development of MSME's in the state by providing host of incentives. MSMEs, in particular, have a vital role in expanding production in a regionally balanced manner and for generating widely dispersed off-farm employment. MSME play an important role in the economy in creating more employment potential, balanced regional development, structural diversification of industries and creation of clusters apart from inter-industry linkages. Here, we need to stress that clusters to be given more importance as they enhance the productivity of MSMEs. Clusters let small local activities to make more efficient use of underutilized resources producing income that they cannot otherwise avail of while operating in seclusion. Out of the six clusters proposed by the

Government of Andhra Pradesh two clusters, namely, Pharma cluster at Hyderabad and Auto component cluster at Vijayawada have already been approved by the central government. Four more clusters - Marine Food Processing at Bheemavaram, Powerloom at Siricilla, Precision and Engineering tools at Rangareddy, Leather cluster at Hyderabad need to be given permission by the Government of India. Once these approvals come, the above mentioned MSME clusters could not only provide employment potential but also lead to emergence of new industrial growth centres apart from the already existing growth centres at Visakhapatnam, Hyderabad, Rangareddy and Medak.

Overall growth of MSEs in AP reveals that during 1995-2009, number of micro and small units have grown at a compounded annual growth rate of 2.4 %, while the fixed investment grew at a rate of 14.2 % and employment grew at a compounded growth rate of 3.2 %. When we consider the industry group-wise registered MSEs in AP, we find that the highest percentage of units is registered under food processing, beverages and tobacco products sector. This also is the sector with the highest share of investment which provides the highest share of employment (table 6.1.9).

**Table 6.1.9: Industry Group-wise Registered MSEs in AP (Percentage): 2009**

| Industry Group | No. of units | Fixed Investment | Employment |
|---|---|---|---|
| Food Processing, Beverages and tobacco | 23.2 | 21.8 | 24.5 |
| Cotton textiles | 2.0 | 2.5 | 3.2 |
| Wood Products | 8.1 | 1.1 | 4.6 |
| Paper products | 6.5 | 5.9 | 4.9 |
| Leather and leather products | 2.2 | 0.4 | 1.1 |
| Rubber, plastic and petroleum products | 5.1 | 8.3 | 4.5 |
| Chemical and allied products | 10.3 | 13.4 | 17.0 |
| Basic metal industries | 1.7 | 4.4 | 2.9 |
| Metal products | 9.8 | 8.8 | 8.6 |
| Machinery and equipment | 7.4 | 5.5 | 5.8 |
| Transport equipment | 1.4 | 0.7 | 1.3 |
| Miscellaneous | 2.2 | 1.6 | 1.9 |
| Repairs and services | 9.2 | 2.4 | 4.8 |
| Others | 2.8 | 5.6 | 3.3 |

*Source: Commissionerate of Industries in AP, Hyderabad*

## 6.1.6 Priority Sectors

The Commissionerate of Industries, Government of AP has given employment and investment projections for the 12<sup>th</sup> Five Year Plan (Table 6.1.10). Further, the Industrial Investment Promotion Policy 2010-15 envisages an Employment Target of 5 lakhs per year (2 lakhs direct and 3 lakhs indirect).

**Table 6.1.10: Employment and Investment Projections for the 12<sup>th</sup> Five Year Plan**

| Year | Large Industries | | | MSMEs | | |
|---|---|---|---|---|---|---|
| | Nos | Investment in Crs | Employment | Nos | Investment in Crs | Employment |
| 2011-12 | 100 | 18302 | 36604 | 10000 | 5500 | 165000 |
| 2012-13 | 121 | 20132 | 40264 | 11000 | 6050 | 151250 |
| 2013-14 | 133 | 22145 | 44291 | 12100 | 6655 | 166375 |
| 2014-15 | 146 | 24360 | 48720 | 13000 | 7321 | 183013 |
| 2015-16 | 160 | 26796 | 53592 | 14300 | 8053 | 201314 |
| Total | **660** | **111736** | **223471** | **60,400** | **33578** | **866951** |

*Source: Commissionerate of Industries in AP, Hyderabad*

Given the above scenario, the priority sectors identified on the basis of elasticity of employment with respect to value added for creating large employment are textile units, chemical industry, electrical machinery, paper products and printing and publishing industry. The sectors which can create employment under MSMEs are textiles, wearing apparel, food and beverages and tobacco. These units contribute around 70 % of total employment of MSME sector

In order to generate high rate of growth of manufacturing sector, the priority sector identified by the Commissionerate of Industry are basic metals, non-metallic mineral industry and chemical industry. The agro-based sectors that can have great impact on the growth of MSMEs in the State in terms of the number of units and employment share are grain mill products, distilling, recycling and blending of spirits, production of meat and soft drinks, textiles, wearing apparel and tobacco units.

## 6.1.7 Major Challenges and Strategies to be adopted

As land and infrastructure are the major constraints that entrepreneurs face the first and foremost strategy is to develop industrial infrastructure in an integrated manner in major locations, connecting locations with both rail and road much before the actual process of industrialization takes place. ,. Better infrastructure facilities can also be provided through public-private partnerships. The provision of incentives to hasten the process of industrialization in the state would be the next concern. These incentives should be directed towards the SSI/SME units which might take the form of subsidy on capital equipment, exemption from VAT, land at cheaper rates, power subsidy and provision for R&D support.

Connectivity of industrial areas with surrounding markets plays a crucial role in enhancing the performance of the industry. Government should take measures in this direction by creating adequate rail, road and port connectivity. Laying of roads, development of separate freight corridor through railway support, development of areas in around the Machilipatnam and Krishnapatnam ports will provide both forward and backward linkages for the industrial sector. Rail connectivity between

Karimnagar and Nizamabad (granite industry), between Jaggaiahpet and Mellacheruvu (cement), between Bhadrachalam and Sattupalli (coal belt) will create more opportunities for local industries. Similarly, port connectivity of Krishnapatnam and Machilipatnam can encourage exports and also provide opportunities for formation of industrial clusters in these areas.

To ensure balanced development and to avoid congestion in major cities/towns, basic infrastructure could be developed in Tier II & III cities and towns. Further, the State aims at attracting global investment in setting up of large industrial enterprises in Andhra Pradesh so that ancillary industries can be developed. Development of sector specific Industrial Parks with appropriate infrastructure in line with the requirement of the sector would go a long way in encouraging MSMEs.

Yet another issue that can be probed for developing the manufacturing sector in AP is to make use of the natural gas resources that are available in abundance in the state. State grid is formed by connecting trunk pipelines through spur pipelines. Industrial parks, major industries and cities are being covered under State grid. The proposed trunk-lines Kakinada-Visakhaptnam-Srikakulam, Ennore-Nellore trunk pipe line, Tumkur-Anantapur trunk pipe line will provide captive Power Generation facility for each Industrial Park either based on Natural Gas or any other renewable source of energy to make every park self sufficient to meet its energy requirements.

The main thrust for industries in the 12th Five Year Plan could be to develop growth engines through

- Development of MSME

- Creation of industrial clusters

- Strengthen the agro-based potential by focusing more on the horticulture, poultry and dairy industries

- Creation of better infrastructure facilities, providing land at cheaper rates

- Power subsidy

- Better facilities in the industrial estates

- Setting up of natural gas trunk pipe-lines through state grid

- Creation of quality infrastructure in the Industrial Clusters, Industrial Estates, SEZs with a provision of Rs.100.00 Crores  State budget every year (Commissionerate of Industries)

- Promotion of National Manufacturing Investment Zones (NMIZ) and Industrial Corridors to capitalize the locally available resources and strengths like availability of Natural Gas and Ports, Road network, Rail linkages for accelerating growth of manufacturing industries

- Allocation of separate funds for the development of priority industries

### 6.1.8 Special Economic Zones

The initiatives to provide infrastructure should be supplemented by efforts to promote infrastructure in local areas such as Special Economic Zones. The SEZ programme has generated a good response. Government of Andhra Pradesh came up with a Policy framework for Special Economic Zones (SEZs) in the State in April 2002, soon after the Government of India introduced the guidelines for SEZs in March 2000. After the Government of India passed the SEZ Act in 2005, the State Government proposed a separate SEZ Act for the State for industrial development. The projected directed employment is 8.5 lakhs and the total projected investment is to the order of Rs 1,05,447 crores.

**Table 6.1.11: Number of SEZs in Andhra Pradesh and other Developed States
(as on 31-3-2010)**

| State | Formal Approvals | In-Principle Approvals | Notified | Total |
|---|---|---|---|---|
| Andhra Pradesh | 109 | 5 | 75 | 180 |
| Maharashtra | 104 | 14 | 63 | 181 |
| Tamil Nadu | 71 | 5 | 57 | 133 |
| Karnataka | 58 | 1 | 36 | 95 |
| Haryana | 46 | 3 | 35 | 84 |
| Gujarat | 45 | 5 | 29 | 79 |
| **India** | **585** | **42** | **381** | **1008** |

*Source: India SEZ Report*

Andhra Pradesh stands in first position among the developed states of the country in terms of number of SEZs. APIIC and APIIC assisted SEZs occupy 43 % of the total while the share of private developers is 41 %. Out of 75 SEZs notified in the State, 44 belong to the IT sector and the remaining units are spread across areas like textiles, pharmaceuticals, bio-technology, gems and jewelry and food-processing. The total number of operational SEZs in the state is 27.

**Important Issues**

*Issues of Land Acquisition and Loss of Livelihoods***:** It has been pointed out in a study that there is forcible acquisition of multi-cropping lands in some areas and acquisition of assignment lands and other government lands from small and marginal farmers. The official data on land acquisition for SEZs is inconsistent.

*Regional Distribution:* Majority of SEZs are located in Rangareddy, Visakhapatnam and East Godavari districts. Backwardness of a region does not appear to be a basis for selection of location and approval of SEZ.

*Compensation and Rehabilitation of People in SEZ areas:* The implementation of measures announced under Rehabilitation and Resettlement Policy is weak

*Environmental and Health Impact of SEZs:* SEZ Act 2005 is completely silent on environmental concerns. Apart from the above, there can be large loss of revenue on account of tax concessions for exports of goods and services that are already being exported without such concessions. There is a lack of level playing field between the manufacturing units within SEZs and those in the Domestic Tariff Area. These concerns need to be addressed and adequate safeguards put in place.

## 6.2 The Information and Communication Technology (ICT) sector

The Information and Communication Technology (ICT) sector has been performing consistently well in the last two decades in the state. Andhra Pradesh has emerged as a State that provides the right climate for the growth of IT business and is now one of the most preferred destinations in the Country.

The IT sector in India and Andhra Pradesh is mostly export-oriented sector. The value of IT exports from the state reached to Rs. 35000 crores by 2010-11. Andhra Pradesh contributes about 13.9% to national IT exports. The IT sector recorded about 49% of the total exports from all sectors in the State. Andhra Pradesh is ranked 4th in IT performance in the Country (GoAP). The software exports grew at over 100 % per year during 1990s and over 40% per year during the later years. The share of the US and Canada was 52 % in 2008-09 while the share of Europe has increased from 20 to 26 % in the same time. The share of Asia-Pacific countries continues to be low at 4 %. This provides a huge scope for diversification in this region.

By 2010-11, IT sector created gainful direct employment to about 2.80 lakhs educated youth of the State. It is estimated by NASSCOM (National Association of Software & Service Companies) that every direct job in IT creates four indirect jobs in other sectors, thus resulting in cyclical growth & employment generation in the State.

### Table 6.2: Growth of Information Technology (IT) Exports and Employment in Andhra Pradesh

| Year | Exports (Rs. Crores) | Growth (%) | No. of Employees (Cumulative) | Growth (%) |
|---|---|---|---|---|
| 1997-98 | 284 | | 8700 | |
| 1998-99 | 574 | 102.1 | 12000 | 37.9 |
| 1999-00 | 1,059 | 84.5 | 25,500 | 112.5 |
| 2000-01 | 1,917 | 81.0 | 48,700 | 91.0 |
| 2001-02 | 2,907 | 51.6 | 64,000 | 31.4 |
| 2002-03 | 3,668 | 26.2 | 71,445 | 11.6 |
| 2003-04 | 5,025 | 37.0 | 85,945 | 20.3 |
| 2004-05 | 8,270 | 64.6 | 1,26,920 | 47.7 |
| 2005-06 | 12,521 | 51.4 | 1,51,789 | 19.6 |
| 2006-07 | 18,582 | 48.4 | 1,87,450 | 23.5 |
| 2007-08 | 26,122 | 40.6 | 2,39,000 | 27.5 |
| 2008-09 | 32,509 | 24.5 | 2,51,786 | 5.3 |
| 2009-10 | 33,482 | 3.0 | 2,64,375 | 5.0 |
| 2010-11 | 35,022 | 4.6 | 2,79,438 | 5.7 |

**Source**: Software Technology Parks of India, Hyderabad (STPIH).

The current ICT policy aims at achieving an annual growth rate of over 17 % in software exports and creating additional direct employment of 1.5 lakh by 2015. There are 57 IT SEZs of which 43 are notified in the state but only 18 are operational. The built-up space in SEZs (IT/ITES) in AP is 447,747 lakh sq.mts and the space allotted is 191, 734 sq.mts. There is still a huge balance of 256, 013 lakh sq.mts as unutilized space.

The Information and Communication Technology (ICT) sector is heavily concentrated around Hyderabad, and is unable to move to Tier-II & Tier-III cities (except Vizag).

While there is a huge turn-out of English-speaking engineering and management graduates every year, the quality of manpower continues to be a matter of concern. This issue needs to be addressed seriously.

### Tier II Locations

Sustained efforts are need to motivate IT majors to move to Tier II and III cities: Vizag, Vijayawada, Warangal, Tirupati, Kakinada (where STPI centers already exist), Guntur, Nalgonda, Kadapa etc. It is going to be a challenge to improve infrastructure in these cities (except Vizag) to make them attractive for IT companies and employees.

### Tier III Locations

These are identified in any district other than HMDA area and Tier-II locations. The IT sector and IT Enabled Services sector including BPOs has to penetrate into these tier-III locations.

## 6.3 Tourism

Tourism has been one of the highest priority, and also high performing, sectors in the state during the last one and half decade. The state has a number of holy pilgrim centres, attractive palaces, museums, ports, rivers, beaches and hill stations. Andhra Pradesh with more than 600 tourist locations attracts the largest number of tourists in India. More than 7 million visitors visit the state every year (GoAP, 2012).

The Andhra Pradesh Tourism Development Corporation (APTDC), a State Government undertaking incorporated in the year 1976 with a focus on the creation of tourism infrastructure and products, continues to register significant growth since 1999-2000. APTDC continues to strive for promotion of new tourism packages such as Eco-Tourism, Beach Tourism and Cruise Tourism. 6 new eco-tourism destinations have been promoted as novel initiatives under community based eco-tourism.

Tour packages of the Tourism Department have become popular with the public as several places have been developed as tourist attractions in the state. In 2009 while Andhra Pradesh with 24.2% ranked 1st in domestic tourist visits, with 5.8% foreign tourists it was ranked one among the top ten states / union territories in foreign tourists. Tourism contributes substantially (directly/indirectly) to the state GSDP. One of the earlier goals for the state is reaching a target of 35 % domestic tourist arrivals and attracting at least 10 % of international tourists by the year 2020.

**Table 6.3.1: Tourist Inflow and Revenue in Andhra Pradesh**

| Year | Tourists | | Revenue | |
|------|----------|----------|-------------|------------|
| | Nos (Lakhs) | Growth (%) | (Rs.Crores) | Growth (%) |
| 2004-05 | 24.96 | | 59.18 | |
| 2005-06 | 43.83 | 75.6 | 76.46 | 29.2 |
| 2006-07 | 53.54 | 22.2 | 89.5 | 17.1 |
| 2007-08 | 62.47 | 16.7 | 100.89 | 12.7 |
| 2008-09 | 73.79 | 18.1 | 109 | 8.0 |
| 2009-10 | 77.48 | 5.0 | 116.7 | 7.1 |
| 2010-11 | 41.63 | -46.3 | 124.68 | 6.8 |
| 2011-12 (up to Sep 2011) | 19.08 | - | 59.41 | - |

**Source**: Tourism Development Corporation.

Recently, the Tourism Department of Government of Andhra Pradesh bagged 6 awards under various categories of excellence in Tourism & Hospitality sector. The State has a rich tourist potential, which if exploited can make it an irresistible tourist destination. The State has been divided into 6 major tourist zones: Hyderabad, Visakhapatnam, Warangal, Nagarjunasagar, Vijayawada and Tirupati. Some of the investment areas in tourism are - Amusement Parks, Boating Cruises, Food Courts, Golf courses, Hotels, Infrastructure, Resorts & Spa's, Shopping Centers, Tours & Travel Operators where the government has been offering a broad spectrum of incentives to investors.

"Medical Tourism" has been picking up in the state especially Hyderabad. Advantages of Hyderabad in this sector are –
- Well qualified and internationally trained medical personnel
- Cheaper hospitalisation costs (compared to those in foreign countries) which are attractive to foreign patients
- Short waiting time for treatment
- Large number and range of hotels, and
- Well-connected air traffic

The state thus has a tremendous potential to leverage this sector to contribute to economic growth and regional development.

# 7. Energy

Energy requirement in any development process is phenomenal and availability of technologies for developing different sources of energy makes the difference in the development process. Andhra Pradesh one of the leading states in India making efforts in this respect. Nevertheless the state still falls short of supplying/meeting the increasing demand for energy.

## 7.1 Power Sector

Power/electricity in Andhra Pradesh is an important sector that gained policy attention and priority in resource allocation between 1950s -1970s. The state has emerged as a key player in the country's power sector and stands first in generation of hydroelectric power among Indian states. Most of the power generation in the state is through thermal and hydro power plants. In recent times the state is promoting clean technologies such as wind, solar and bio-mass in power generation. Most of the power generation and distribution units in the state are in the public sector. The state is also promoting merchant power plant through PPP models and encouraging captive power plants in various industrial units for their self-consumption. In terms of performance, the state's power sector emerged as one of the best performing ones in India.

The Andhra Pradesh State Electricity Board (APSEB) was unbundled into Andhra Pradesh Generation Corporation Limited (APGENCO), Andhra Pradesh Transmission Corporation Limited (APTRANSCO) and four distribution companies by the Electricity Reform Act of 1998. The four distribution companies are Central Power Distribution Company of Andhra Pradesh Limited (APCPDCL) which  caters to the needs of Anantapur, Kurnool, Mahbubnagar, Nalgonda, Medak, Rangareddy and Hyderabad; ii) Southern Power Distribution Company of Andhra Pradesh Limited (APSPDCL) caters to  the needs of Krishna, Guntur, Prakasam, Nellore, Chittor and Cuddapah; iii) North Power Distribution Company of Andhra Pradesh Limited (APNPDCL) caters to the needs of Warngal, Karimnagar, Khammam, Nizamabad and Adilabad and iv) Eastern Power Distribution Company of Andhra Pradesh Limited (APEPDCL) caters to the needs of East Godavri (E Godavari), West Godavari (W Godavari), Vishakaptnam, Vizianagaram and Srikakulam. The reasons for unbundling of the APSEB are due to dwindling finances of APSEB and the need to find additional resources for capacity addition.

### *Demand pattern*

Demand for electricity in the State increased from 29402.21 MU in 2002 to 53335.13 in 2009 registering an annual compound growth rate of 8.9 %. The highest annual compound growth rate in

electricity consumption was found in industrial sector (19.7%) followed by commercial (non-domestic) (11.5%) and domestic sector (8.0%).

Electricity consumption in the agricultural sector grew at the rate of 4.9 % per annum. Differential growth rate in electricity consumption by different sectors has implications for the consumption pattern of electricity among them. The low growth rate of electricity consumption by agriculture compared to the rest of the sectors and all sectors implies that share of electricity consumption by agricultural sector has declined during the period under consideration. This has implications on the growth of electricity subsidy provided by the government. The growth of electricity subsidy provided to agricultural sector by the Government is likely to decline[5] as other sectors are likely to cross subsidies more.

**Table 7.1: Pattern of Electricity Consumption in Andhra Pradesh: 2001-02 to 2008-09**
**(Percentage)**

| Year | Domestic | Non-Domestic | Agriculture | Industrial | Railways | Others | Total (MU) |
|---|---|---|---|---|---|---|---|
| 2001-02 | 22.89 | 4.78 | 41.53 | 14.91 | 3.28 | 12.61 | 29402.21 |
| 2002-03 | 22.18 | 4.98 | 39.31 | 17.27 | 3.41 | 12.85 | 31319.30 |
| 2003-04 | 21.12 | 4.87 | 37.39 | 20.15 | 3.31 | 13.15 | 34084.09 |
| 2004-05 | 20.71 | 4.87 | 36.18 | 22.33 | 3.12 | 12.79 | 37617.65 |
| 2005-06 | 22.49 | 5.44 | 35.82 | 26.07 | 3.25 | 6.92 | 37617.65 |
| 2006-07 | 20.46 | 5.12 | 35.31 | 25.70 | 2.85 | 10.55 | 44850.21 |
| 2007-08 | 21.45 | 5.56 | 31.04 | 28.65 | 2.92 | 10.37 | 47914.46 |
| 2008-09 | 21.57 | 5.66 | 31.95 | 28.91 | 1.79 | 10.12 | 53335.13 |
| CGR(%) | 7.96 | 11.54 | 4.87 | 19.58 | -0.12 | 5.51 | 8.88 |

**Source**: DES.

*Generation*

The installed capacity in AP increased from 9055.9 MW in 2002 to 14625.52 in 2010 registering an annual compound growth rate of 6.2 %. The share of state sector is dominant but declining. The share of state sector has declined from 65.6 % to 55.3 % (Table 7.2). However, the share of central sector has increased from 16.6 % to 20.8 % during the same period. The share of private sector is around 15 percent throughout the period.

**Table 7.2: Progress in Installed capacity in Power Sector: Andhra Pradesh (Percentage)**

| Year | State Sector | | | | Joint sector | Share from | Private sector | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | Hydel | Thermal | Wind | Total | Gas | Central | Gas | Others | (MW) |
| 2001-02 | 32.93 | 32.60 | 0.02 | 65.56 | 3.00 | 16.56 | 10.15 | 4.73 | 9055.90 |
| 2002-03 | 33.23 | 28.68 | 0.02 | 61.93 | 2.63 | 20.39 | 9.67 | 5.37 | 10328.83 |

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[5] Power subsidies to agricultural sector are cross subsidy and direct subsidy. Cross subsidies arise when some sectors/ people pay more than the cost of supplying to them and the difference is transferred to the desired sectors / sections of the population. Direct subsidies are paid by the government for the difference between the price determined by the market/agency and the price determined by the government. Direct subsidies can be seen in the Budget Documents under the relevant head. As the electricity tariff rates for high growth consuming sectors are more than the cost of supplying to them, cross subsidies are going to be more.

| 2003-04 | 33.53 | 27.79 | 0.02 | 61.34 | 2.54 | 20.69 | 9.34 | 6.09 | 10695.56 |
|---|---|---|---|---|---|---|---|---|---|
| 2004-05 | 32.29 | 26.95 | 0.02 | 59.26 | 2.45 | 23.15 | 8.99 | 6.15 | 11105.71 |
| 2005-06 | 32.16 | 26.57 | 0.02 | 58.75 | 2.44 | 23.47 | 8.94 | 6.41 | 11151.19 |
| 2006-07 | 29.90 | 26.45 | 0.02 | 56.36 | 2.27 | 23.80 | 11.39 | 6.19 | 11996.31 |
| 2007-08 | 29.28 | 27.32 | 0.02 | 56.62 | 2.20 | 23.93 | 11.04 | 6.22 | 12381.59 |
| 2008-09 | 29.49 | 27.22 | 0.02 | 56.72 | 2.19 | 23.84 | 11.00 | 6.25 | 12427.25 |
| 2009-10 | 25.32 | 29.96 | 0.01 | 55.30 | 1.86 | 20.84 | 9.34 | 6.06 | 14625.52 |

**Source**: DES.

Power generation in Andhra Pradesh has increased from 47937 MU in 2003 to 74612 MU in 2010 registering an annual compound growth rate of 6.5 % (Table 7.3). The highest growth rate in generation is achieved by Central & MAPP (10.2%), followed by private sector (10.1%). The growth of state sector (APGENCO) in generation has grown only by 1.6 %.

**Table 7.3: Pattern of Power Generation in Andhra Pradesh (2002-03 to 2009-10)**

| Year | Unit | Energy State Sector | | | Gas | Wind | Private Sector | Central & MAPP | Others | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Hydel | Thermal | Total | | | | | | |
| 2002-03 | MU | 3337 | 23033 | 26369 | 2030 | | 8169 | 11575 | -207 | 47937 |
| | % | 6.96 | 48.05 | 55.01 | 4.23 | | 17.04 | 24.15 | -0.43 | 100.00 |
| 2003-04* | MU | 2941 | 20401 | 23342 | 2109 | 1 | 8636 | 13011 | 344 | 47444 |
| | % | 6.20 | 43.00 | 49.20 | 4.45 | | 18.20 | 27.42 | 0.73 | 100.00 |
| 2004-05 | MU | 5265 | 21145 | 26410 | 1908 | 2 | 8849 | 13774 | 180 | 51123 |
| | % | 10.30 | 41.36 | 51.66 | 3.73 | 0.0 | 17.31 | 26.94 | 0.35 | 100.00 |
| 2005-06 | MU | 7873 | 18718 | 26591 | 1753 | | 7730 | 15971 | 530 | 52575 |
| | % | 14.97 | 35.60 | 50.58 | 3.33 | | 14.70 | 30.38 | 1.01 | 100.00 |
| 2006-07 | MU | 9247 | 19994 | 29241 | 1445 | | 7730 | 19487 | 167 | 58070 |
| | % | 15.92 | 34.43 | 50.35 | 2.49 | | 13.31 | 33.56 | 0.29 | 100.00 |
| 2007-08 | MU | 9510 | 21452 | 30961 | 1101 | | 9004 | 19822 | 357 | 61245 |
| | % | 15.53 | 35.03 | 50.55 | 1.80 | | 14.70 | 32.36 | 0.58 | 100.00 |
| 2008-09 | MU | 7703 | 23294 | 30997 | 1441 | 0.0 | 8885 | 25316 | 748 | 67387 |
| | % | 11.43 | 34.57 | 46.00 | 2.14 | 0.0 | 13.19 | 37.57 | 1.11 | 100.00 |
| 2009-10 | MU | 5450 | 24101 | 29552 | 2087 | 0.0 | 16026 | 22851 | 4096 | 74612 |
| | % | 7.31 | 32.30 | 39.61 | 2.80 | 0.0 | 21.48 | 30.63 | 5.49 | 100.00 |
| ACGR | % | 7.26 | 0.65 | 1.64 | 0.40 | | 10.11 | 10.20 | -253.23 | 6.52 |

**Note**: *ex-bus from 2003-04 onwards.

**Source**:  DES.


*Performance of DISCOMS*

Performance of DISCOMS may be analysed in terms of distribution losses, profits and dependence on Government in terms of subsidies and grants to meet the obligations imposed by the Government.

The distribution losses of all the DISCOMS have been declining since 2005-06. During the period 2005-06 to 2010-11 the distributional losses of the APEPDCL is lowest among all the DISCOMS. For example it reduced from 13.0 % in 2006 to 8.9 % in 2011. However, the decline in the distributional losses is greater for APNPDCL (5.3 percentage points decline), followed by APSPDCL (4.7 percentage points decline), APEPDCL (4.1 percentage points decline) and APCPDL (3.8 percentage points decline).

Net surplus of all the DISCOMs is positive from 2006 to 2010. However, the dependence on Government for grants and subsidies is not declining. On the contrary the share of grants and subsidies in total revenue of the companies has increased from 11.7 % in 2006 to 17.0 % in 2008 and further increased to 27.5 %. The percentage of dependency on grants / subsidies is very high for NPDCL, followed by SPDCL. A Major part of the subsidies are for agricultural sector. Hence it is important to examine the share of agricultural power consumption in total power consumption of respective companies. The share of power consumption by agricultural sector in total power consumption of the respective companies indicate that in 2011 it was highest in APNPDCL (44.5%), followed by APCPDCL (27.9%), APSPDCL (27.8%) and APEPDCL (18.2%). This is true for all years (from 2006 to 2011). Thus there appears to be high correlation between power percentage of power consumption by agricultural sector and percentage of grants and subsidies in total revenue. Another important observation to be noted is that the share of power consumption by agricultural sector is declining across all companies.

*Demand Projections*

Projections made using the trend method for Domestic, Commercial, Agriculture, Industry sectors are given in Table 6.4. Others category is estimated on the average of last two years ratio and the ratio being the aggregate of the above sectors to that of others sectors. Adding all these will give us total demand. To this T&D losses are added. T&D losses are assumed to be to the extent of 17.2 %.

**Table 7.4: Electricity Requirement during 12<sup>th</sup> Plan (Mkwh)**

| Year | Domestic | Non-domestic | Agriculture | Industry | Others | Total demand | Total Power with T&D |
|------|----------|--------------|-------------|----------|--------|--------------|----------------------|
| 2011-12 | 13867 | 4044 | 18852 | 28126 | 9324 | 74224 | 89691 |
| 2012-13 | 14987 | 4508 | 19753 | 33692 | 10481 | 83432 | 100818 |
| 2013-14 | 16198 | 5025 | 20696 | 40360 | 11823 | 94114 | 113725 |
| 2014-15 | 17506 | 5601 | 21684 | 48347 | 13383 | 106536 | 128736 |
| 2015-16 | 18920 | 6243 | 22720 | 57916 | 15202 | 121016 | 146233 |
| 2016-17 | 20448 | 6960 | 23805 | 69378 | 17328 | 137934 | 166676 |

Source: Estimates.

Total requirement is arrived by adding &D losses and total demand. Sector wise demand projections are as follows:

- Domestic demand is likely to grow at an annual compound growth rate (ACGR) of 8.07%. By 2016-17 the demand is likely to be 20448 M kwh.
- Commercial demand is likely to grow at ACGR of 11.47%. By 2016-17 the demand is likely to be 7768 Mkwh.

- Demand by agriculture sector is to growth at ACGR of 4.78%. By 2016-17 the demand is likely to be 23805 Mkwh. If irrigation projects are taken up extensively by lift irrigation the demand is going to be much higher.

- Demand by industry is to grow at ACGR of 19.79%. By 2016-17 the demand is likely to be 69378.

- Total demand is to grow at the ACGR of 13.19%. By 2016-17 the demand is likely to be 13794 Mkwh

- The aggregate requirement by 2016-17 is 1572.42 Mkwh.

## 7.2 Fuel for Lighting and Cooking at the Household Level

At household level energy requirement is mostly for cooking and lighting. Andhra Pradesh is one of few Indian states, where almost all villages are electrified. However this does not mean that each hamlet in the village is electrified or that all households in the electrified village/hamlet have electricity connection. The data shows that by 2005 about 94 % of the habitations/hamlets in the state were electrified (figure 7.1).

**Figure 7.1: Distribution of Household by Type of Fuel for Cooking and Lighting**
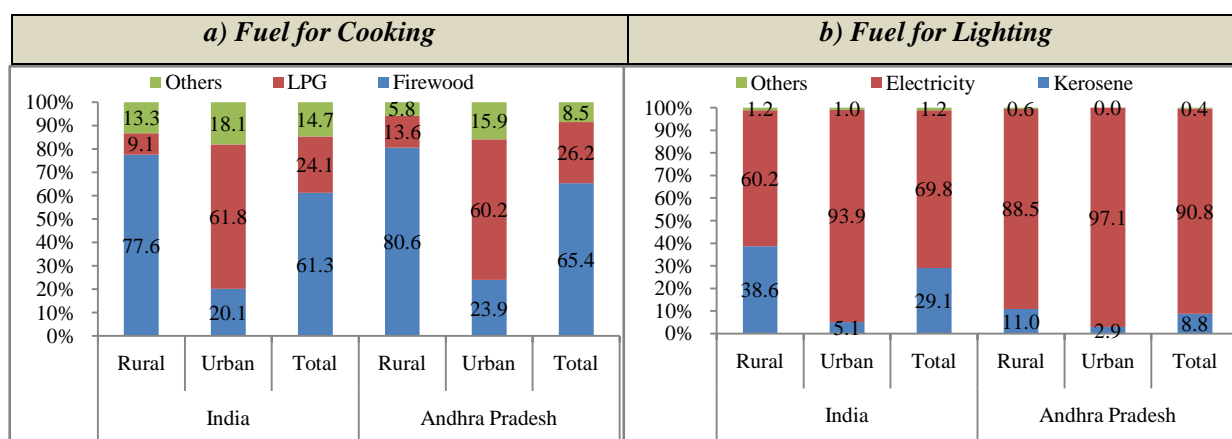


**Source**: NSS 64th Round (2007-08) Consumer Expenditure (Sch. 1.0)

About 91% of the households in Andhra Pradesh use electricity as the primary fuel for lighting, with most of them located in rural Andhra Pradesh. Although the state ranks above the national average, in terms of electricity usage there are still about 9% of households which are are yet to receive electricity for the lighting.

For cooking, still more than two-thirds of the household in the state depend on firewood and other traditional fuels. The dependency on firewood and other traditional fuels for cooking is very high in rural areas of the state. While LPG is considered as a better option, less than one-fourth of rural households and less than two-thirds of the households in urban areas use LPG for cooking.

## 7.3 Renewable Energy Systems

Given the increasing demand for energy at household levels as well as agricultural and industrial purposes, the demand can be met by exploring and developing renewable energy system along with developing non-renewable energy systems. The renewable energy systems are environmental friendly.

Under the Renewable Energy Programme there are initiatives for development of different types of renewable energy systems and devices. In this regard there are 4.6 lakh biogas plants installed in the state. Other initiatives like biomass gasifiers especially for industrial purposes, waste to energy initiatives, solar photovoltaic system, small hydro power, aerogen systems wind power and bio-power system are also developed.

**Table 7.5: Cumulative Achievements of Decentralised/Off-Grid Renewable Energy Systems/Devices under Various Renewable Energy Programmes in AP**

| Sno | Renewable Energy System | | A P | India | % of AP |
|---|---|---|---|---|---|
| 1 | 2 | | 3 | 4 | 5 |
| 1 | Biogas Plants (Nos.) | | 457938 | 4253624 | 10.8 |
| 2 | Biomass Gasifiers (KW) | Rural | - | 13287 | - |
| | | Industrial | 16681 | 107949 | 15.5 |
| 3 | Waste to Energy (KW) | | 4.95 | 46.72 | 10.6 |
| 4 | Solar Photovoltaic System | Street Lighting System (Nos) | 35799 | 797344 | 4.5 |
| | | Home Lighting System (Nos) | 1957 | 603307 | 0.3 |
| | | Solar Lanterns (Nos.) | 3914 | 119634 | 3.3 |
| | | Power Plant (KWp) | 213.3 | 2922.11 | 7.3 |
| 5 | Solar Photovoltaic Pumps (Nos.) | | 613 | 7334 | 8.4 |
| 6 | Water Pumping Wind Mills (Nos.) | | 6 | 1352 | 0.4 |
| 7 | Aerogen/Hybrid Systems (Kilowatt) | | 16 | 1072.65 | 1.5 |
| 8 | Solar Cookers (Nos.) | | 13395 | 663501 | 2.0 |
| 9 | Remote Village Electrification | Villages (Nos.) | - | 5348 | - |
| | | Hamlets (Nos.) | - | 1408 | - |
| 10 | Small Hydro Power (MW) | | 187 | 2735 | 6.8 |
| 11 | Wind Power (MW) | | 136 | 11807 | 1.2 |
| 12 | Bio-Power | Bio mass (MW) | 363 | 2200 | 16.5 |
| | | Waste to Energy (MW) | 36 | 65 | 54.9 |
| 13 | Solar Power (MWp) | | 0 | 10 | 1.0 |
| | Total Capacity (MW) | | 722 | 16817 | 4.3 |

**Note**: as on 2009.

**Source**: www.Indiastat.com

However, the development of the renewable energy systems in the state is still in infancy. Future attention needs to be focused upon the vast coastal areas in the state that can be resource base for developing tidal energy system.

## 7.4 The 12th Plan Approach

The challenge ahead of Energy sector during the 12th Plan is meeting the growing energy demand in the state. There is already a substantial gap between demand and supply in the electricity/power sector. In rural areas power-cuts are norm of the day with the the number of hours power supplied is lesser than the number hours with power cuts. This affects the growth and development rural industry that includes all the tiny, small and large scale industries located in rural areas.

**Key Challenges**

➢ Meeting growing energy demand for cooking purpose at the household level

- ➢ Meeting growing demand for electricity/power for different purposes – domestic/commercial/agriculture and industrial.

- ➢ Perpetual Supply – uninterrupted 24 hour supply of electricity even in rural areas

- ➢ Reduction of Transmission and Distribution losses

- ➢ Arresting pilferages

- ➢ Improving Energy Efficiency

**Strategies**

In order to meet the increasing demand for energy in the state in the forth-coming 12th plan period the following strategies are feasible.

- ➢ Mobilisation of large scale investment in energy sector

- ➢ Expansion of Installed Capacity of state in the PPP mode

- ➢ Promoting Renewable Energy Systems

- ➢ Developing Alternative Energy Resource Systems – Gas, Wind, Solar and Tidal Energy Systems

- ➢ Developing and promoting technologies that improves plant load factor (PLF)

- ➢ State being Gas-hub of India, Gas-based energy systems can be developed

- ➢ Promoting Clean Technologies while developing these alternative energy systems

- ➢ Promoting Small Scale Solar Energy Systems at the Village level

- ➢ Promoting Captive Power Plants for Industries

- ➢ Encouraging Industries with Captive Power Plants to adopt nearby villages to meet their energy demands

- ➢ Promoting standards and labeling of energy efficient equipment and appliances in both the household and in non-household sectors – agriculture and industry

# 8. Transport

Transport system in any economy is considered as a lifeline that inter-links different geographical locations and economic and business activities and facilitates mobility of people, goods and services. Inadequate transportation constrains growth of an economy. Physical connectivity between people in different geographical locations within the state through different modes (road, rail, air and navigation) expands the size of the markets, interlinks economic activities, increases employment opportunities and mobility of the people. Transport connectivity facilitates growth of business and thereby the growth of the economy. It also facilitates information sharing and creates opportunities to improve capabilities of people.

## 8.1 Geography and Density

The total geographical area of the state is 2,75,000 Sq. Kms ( or 2,76,00,000 hectares) with 28 thousand revenue villages (of which 26.6 thousands are inhabited ones) and 210 towns/cities within the geographical boundary of the state. Most of the revenue villages have at least one or more hamlets in its fold. The total number of habitations including revenue villages and their hamlets/habitations in the state are 66528. It means, each revenue village, on an average, has 2.5 hamlet/habitations. For each 100 Sq Km of geographical area of the state the average number of habitations spread over is 24. Each habitation, on an average, has an area of 413 hectares. Given the geographical distance between different villages, in the absence of physical infrastructure facilitating connectivity across villages people living in these villages will be isolated..

**Table 8.1: Density of Population in AP and India**

| Sno | Parameter/indicator | Year | AP | India | % of AP |
|---|---|---|---|---|---|
| *1* | *2* | *3* | *4* | *5* | *6* |
| 1 | Geographical Area (GA – Sq Kms) | 2001 | 275045 | 3287240 | 8.4 |
| 2 | % of Forest Area | 2001 | 15.0% | 21.02% | |
| 3 | Total Population | 2001 | 76.2 M | 1028.6 M | 7.4 |
| 4 | Density of Population | 2001 | 277 | 361 | |

**Note**: % of AP is to India; M - Millions.
**Source**: Census of India.

Connectivity of people living in different places/geographies/villages within the state and connectivity of people living in the state with those people living outside the state including neighbouring states as well as those in the distant places / geographies / states / countries is therefore important in development process.

## 8.2 Road Connectivity

The total length of roads in Andhra Pradesh in the year 1956-57 was 17086 Kms (consisting of 338 Kms of cement concrete, 5016 Kms of Blacktop, 10939 Kms of metalled and 793 Kms of unmetalled roads). It increased to 198365 Kms by the year 2008-09, registering a phenomenal increase of (1100 %) 11 times increase, during the decadal period between 1956-57 and 2008-09. Of the total length of road available in the state 45% is laid with blacktop or asphalt, 15% is metalled, 38% is unmetalled and just 2% is of cement and concrete. During the last two decades there has been a significant improvement in road infrastructure.

**Table 8.2: Road Length (Kms) in Andhra Pradesh by the Type**

| Year | Cement Concrete | Blacktop or Asphalt | Metalled (W.B.M.) | Un-Metalled (Murram) | Total Length of Roads |
|------|------|------|------|------|------|
| *1* | *2* | *3* | *4* | *5* | *6* |
| 1956-57 | 338 | 5016 | 10939 | 793 | 17086 |
| 1999-2000 | 338 | 54876 | 46247 | 63956 | 165417 |
| 2004-05 | 1967 | 73908 | 39309 | 71851 | 187035 |
| 2008-09 | 3663 | 89254 | 29537 | 75911 | 198365 |

Note: 1. In Kilometers; 2. Including National highways, PWD (R&B) and Panchayati raj roads; 3. Reference date as on 31st March.

**Source**: 1. DES (2009); 2. Engineer-in-Chief (R&B), Admn. & NH, Roads and Buildings Department, Andhra Pradesh; 3. Chief Engineer (PR), RIAD, Andhra Pradesh.

Although state has only 4646 km distance of (just 2% of its total road length) national highways that passes through the state, it is a significant link that connects the state with its neighbouring states and rest of India. The state has 5 national highways that covers 4646 km distance in the state and connects AP with other major cities like Bangalore, Chennai, Mumbai and Kolkata.

**Figure 8.1: Distribution of Roads in Andhra Pradesh by Type and Agency that Maintained, 2009**
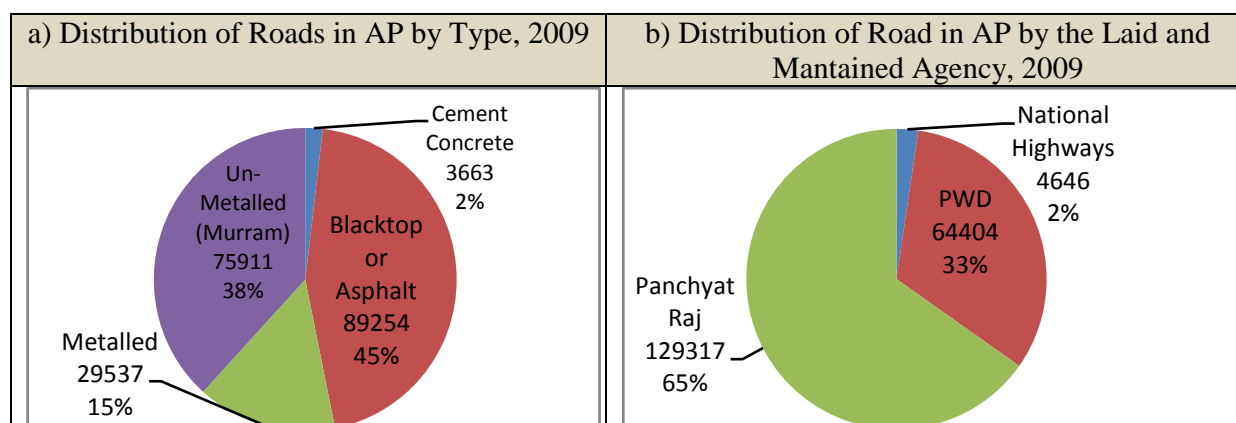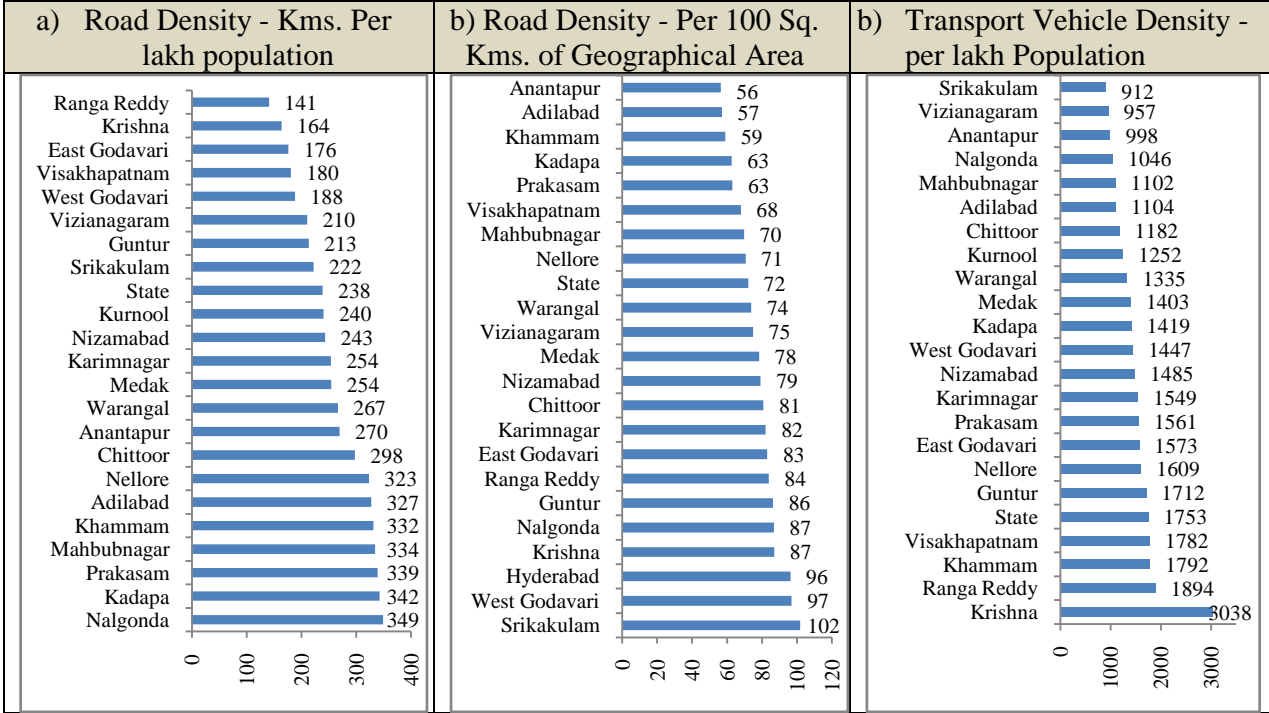


**Source**: Directorate of Economics and Statistics, Hyderabad.

If the total length of road network available in the state is standardised in terms of its catchment and coverage, it was 6.21 Kms per 100 Sq. Kms of the States' geographical area and 0.55 Kms per 1000 population in 1956-57. The total length of these roads has increased to about 65.45 Kms per 100 sq kms of geographical area and 2.36 kms per 1000 population by 2008-09. It indicates a phenomenal improvement during the period. However, it does not mean the road network available in the state is substantial enough to meet business requirements in the state as it needs further expansion.

Moreover, there are several regional disparities. Across districts the road density in terms of length of road (Kms) available per lakh population varies between the highest 349 Kms to that of the lowest 141 Kms. The road density is the highest in Nalgonda district (excluding Hyderabad) followed by Kadapa, Prakasam, Mahabubnagar and Khammam districts; and lowest in Rangareddy district followed by Krishna, East Godavari, Visakhapatnam and West Godavari districts.

**Figure 8.2: Road and Vehicle Density across District of Andhra Pradesh, 2009**

The road density in terms of length of road (Kms) available per 100 Sq Kms of geographical area (GA) across districts has shown a different order. It varied between the highest of 142 Kms to that of 56 Kms which is the lowest. Excluding Hyderabad, the road density based on GA is the highest in Srikakulam district followed by West Godavari, Krishna, Nalgonda and Guntur districts; and the lowest in Anantapur followed by Adilabad, Khammam, Kadapa and Prakasam districts.

The transport vehicle density indicates that there are 1753 transport vehicles (including goods and people) available per lakh population in the state. It is important to note that there are only 27 stage carriages (public and private buses) per lakh population. These stage carriages are regularly operated transport vehicles for carrying people. On the other hand privately owned (at individual level) vehicle density indicates that there are 729 motor cars/jeeps/omni buses and 6687 two wheelers per lakh population. There are six Ambulances per lakh population for meeting medical emergencies of people in the state.

**Table 8.3: Transportation and Other Vehicle Density in Andhra Pradesh, 2009**

| Sno | Type of Transportation Vehicles | Number | Per Lakh Pop. |
|---|---|---|---|
| *1* | *2* | *3* | *4* |
| **I** | **Transport** | | |
| 1 | Stage Carriages | 22282 | 27 |
| 2 | Contract Carriages | 59966 | 72 |
| 3 | Goods Vehicles (Heavy+ Medium +Light+ Three Wheelers) | 472830 | 568 |
| 4 | Tractors &Trailers | 214940 | 258 |
| 5 | Total School Buses & Private Service Vehicles | 22356 | 27 |
| 6 | Total Transport Vehicles (1 to 5) | 1458392 | 1753 |
| **B** | **Others: Non-transport** | | |
| 7 | Motor Cars, Jeeps & Omni Bus | 606036 | 729 |
| 8 | Two Wheelers | 5562201 | 6687 |
| 9 | Ambulances | 5363 | 6 |

**Note**: For calculating per lakh population, the projected population of RGI for the year 2009 is considered.
**Source**: DES (2009)

The transport vehicle density varies between the highest 3000 vehicles per lakh population to the lowest 912 across districts. The transport vehicle density is the highest in Krishna excluding Hyderabad followed by Rangareddy, Khammam, and Visakhapatnam; and the density is the lowest in Srikakulam followed by Vizianagaram, Anantapur, Nalgonda and Mahabubnagar.

**Table 8.4: Working of APSRTC**

| Year | Average Number of Buses in Use | Route (Kms) | Buses Operated (in lakh kms.) | No. of Passengers Carried (in lakhs) |
|---|---|---|---|---|
| *1* | *2* | *3* | *4* | *5* |
| 2002-03 | 19157 | 900000 | 22358 | 40993 |
| 2008-09 | 20375 | 996000 | 26749 | 51107 |

**Note**: 1. Col. 2 = Corporation Buses + Hired Buses; 3. Sum Total of the length of all the routes in operation.
**Source**: 1. DES (2009); 2. Managing Director, A.P.S.R.T.C. Hyderabad

Andhra Pradesh State Road Transport Corporation is the single largest public transport system for carrying people in the state. It is also one of the best transport systems running across states in India. The Corporation ran about 20 thousand buses all over the state with the coverage route of about 10 lakh Kms during 2008-09. These 20 thousand buses are operated around 26749 lakh kms and carried 51107 lakh passengers during the same year. If we consider the estimated population of the state as

830 lakh (or 8.3 crores) and the 51107 lakhs (or 511 crore) passenger carried by the APSRTC during 2008-09, it can be derived that each person of the state alighted APSRTC buses, on average, 62 times during a year.

While the State has achieved remarkable performance over a period of time in terms of physical connectivity through road network and transportation, exclusion of villages from road network and transportation undermines its overall achievement.

**Table 8.5: Percentage of Villages without Transport and Road Facility in Andhra Pradesh**

| | Facility | 1991 | 2001 | *Change* |
|---|---|---|---|---|
| 1 | Transport Facility | 53.4 | 28.8 | 14.6 |
| 2 | Approach Road: **Pucca** | 59.0 | 28.4 | 20.6 |

**Note**: Change is difference between 1991 and 2001.
**Source**: Census: Village Directory, 1991&2001

While updated data is not available for 2011 Census yet, the 2001 Census information shows that more than one-four of the villages in the state are without pucca approach road and without any public transportation facility.

## 8.3 Rail Connectivity

The grand railway line connecting northernmost and southernmost points of Indian subcontinent Jammu-Delhi-Kanyakumar line, passes through Andhra Pradesh. Railway line connecting Eastern India and Southern states, Kolkata-Kanyakumar line also passes through the state. The railway line in the state connects it with its neighboring states of Orissa, Maharastra, Karnataka and Tamil Nadu. All the districts in the state have been connected with railway line/network. Most of the narrow gauge and meter gauge line in the state have been converted to broad gauge.

Andhra Pradesh had a total length of 4550 Kms of railway lines (including all types – broad, meter and narrow gauge) in the year 1956-57 which gradually increased to 4998 Kms by 2008-09. There are several other new additional proposed lines in the pipeline.

## 8.4 Air Connectivity

The state of Andhra Pradesh has relatively better air connectivity with major cities in India as well as across the world. The state has the first Greenfield Airport of the country at Hyderabad and which is ranked as the 5th best airport in the world. The other functional airports in the state are Visakhapatnam, Vijayawada, Rajahmundry and Tirupati. Besides, the Government is planning construction of airports in eight other places: Guntur, Ongole, Nellore, Warangal, Kadapa, Tadepalligudem, Kurnool and Ramagundam.

**Table 8.6: The Movement of Domestic Aircrafts, Passengers and Cargo - Average Per Day in Functional Airports of Andhra Pradesh, 2008-09**

| Sno | Airport | Aircrafts | Passenger | Cargo |
|---|---|---|---|---|
| *1* | *2* | *3* | *4* | *5* |
| 1 | Hyderabad | 188 (33) | 12736 (4293) | 71 (81) |
| 2 | Rajahmundry | 25 | 339 | 0 |
| 3 | Tirupathi | 10 | 425 | 0.07 |
| 4 | Vijayawada | 6 | 175 | 0 |
| 5 | Vizag | 42 | 1641 | 2 |

**Note**: 1. Figures in parenthesis are related to international; 2. Aircrafts and passengers are in numbers and Cargo is in tonnes.

**Source**: 1. CSO (2010) *Infrastructure Statistics*, MoSPI, GOI, 2. DGCA, M/o Civil Aviation, GOI.

Of all the functional airports in the state the movement of aircrafts and traffic handled is the highest at the Hyderabad Airport. On an average the Hyderabad airport handles 188 domestic aircraft movement and 13 thousand domestic passenger and 71 tonnes of cargo, per day.

The Hyderabad Airport has shown remarkable growth in terms of traffic handled (both the passengers and freight) during recent years. The domestic aircraft movements have increased three times between 2003-04 and 2007-08 and international aircraft movements doubled during the same period. Similarly the number of passengers embarked and disembarked also showed a three times increase in the domestic sector and two times increase in the international sector.

### 8.5 Port Connectivity

While Andhra Pradesh has the second largest coastline 970 Km, next only to Gujarat (1600 Km) it is yet to harness its vast coastline advantage. Unlike Gujarat (having 42 ports) the state of Andhra Pradesh is having a very few ports in its coastline. Visakhapatnam is the major port in Andhra Pradesh and one of the largest and busiest major ports in India. It is one of the 13 major ports in the country administered by Port Trust of India.

The other major port projects that the state is about to complete under PPP mode are Krishnapatnam, Gangavarm, Nizampatnam and Kakinada. The state is the first one in terms of development of ports in the private sector. The Kakinada port comprises of Anchorage Port, Kakinada Deep Water Port and Kakinada Fishing Harbour. The Kakinada Deep Water Port is located between Visakhapatnam and Chennai Ports and has the opportunity to handle a mix of bulk, liquid, break bulk, containers, project cargoes and service offshore oil and gas exploration activities of K-G Basin. Krishnapatnam, located at 24 Km distance from Nellore, has handled 8 million tonne of cargo in its first 8 months operations. Gangavaram Port has been developed as all weather, multipurpose and deepest port in India with a depth up to 21 meters capable of handling Super Cape size vessels of up to 200000 DWT.

The state is also having minor ports at Machilipatnam, Mutyalampalem, Bhavanapadu, Kalingapatnam, Bhimunipatnam, Narsapur and Vodarevu which have a potential of being developed as major ports in the state.

## 8.6 The 12<sup>th</sup> Plan Approach

Weak road and rail network that is insufficient to meet growth requirements of the state economy is the major concern in transport sector. The infrastructure investment in transport is mostly concentrated in and around urban growth centres. Many villages in rural Andhra Pradesh still do not have access to pucca road network. The growth of rural economy (including agriculture and industrial activities) is constrained by inadequate road network and transportation facilities. Even in urban areas, lack of adequate public transportation has increased urban congestion. Moreover, repairs and maintenance of existing road network is also a major concern. Another major problem is overlapping of public institutions/agencies involved in laying roads and their maintenance.

Regarding rail network, although the state has a very good network it is not sufficient to meet the requirements of the state economy. There are many proposed/planned railway lines which have not yet taken-off. It is hoped that they will be grounded at least in the 12<sup>th</sup> plan period. .

In spite of the state having a large coastline, it is not utilized properly compared to Gujarat which has a shorter coastline. Performance of Gujarat in terms of number of ports and the kind port based economic activities are very impressive unlike Andhra Pradesh.

*Strategies*

  ➢ Further Expansion of Road Network especially into rural and remote areas

  ➢ Widening existing Roads connecting important industrial/business centres/areas within the state

  ➢ Established system of repairs and maintenance of existing roads

  ➢ Improving public transportation system

  ➢ Expansion of rail network by completing proposed rail lines

  ➢ Developing major and minor Ports for utilising coastline advantage

  ➢ Development of Air ports in different parts of the state

  ➢ Public-Private Partnership (PPP) approach.

# 9. Health

Health is an important issue that needs targeted policy intervention in Andhra Pradesh. The state has registered a remarkable decline in fertility that resulted in faster decline in growth of population is due to the efforts of family planning initiatives. Andhra Pradesh has emerged as one of those states with the lowest fertility rate and second lowest rate of growth in population. However, its performance in other health indicators such as infant mortality, malnutrition, HIV/AIDS is not impressive. Though the performance of the state seen over its past record appears better, its performance is average compared to other States in India.

Even as Andhra Pradesh is emerging as one of the destinations of "Health Tourism" owing to emerging private entrepreneurship in health care sector the health status of its population is not impressive. The growing private health care sector in the state is not affordable to large sections of the economically poor and middle class population of the state. Therefore there is need for improving and strengthening public health care system in Andhra Pradesh.

## 9.1 Health Care Status in Andhra Pradesh

Infant/child mortality rate that reflects the health status, socio-economic development and quality of life considered crucial issues of human development, of a country/state/region is an important health parameter. In this respect Andhra Pradesh has shown a good performance over its past. The IMR in the state in recent period had declined to less than half of that of its base level i.e., from 106 in the early 1970s to 46 in 2010. The trend shows that during the last four decades the rate of reduction in IMR in the state was 2.2% per annum. The rate of reduction (3.2% per annum) was sharpest in the recent period (2001-10) and minimal (0.7% per annum) during the 1990s. Recent IMR estimate (46 in 2010) implies that for every seven minutes there is one infant death in the state. Andhra Pradesh however, lags behind compared to other states especially southern states in India.

Another important indicator that reflects health status in general and health of women in particular is maternal mortality rate (MMR). The SRS estimates indicate that MMR in the state has shown a sharp decline since 1990s. It declined from 417 (maternal deaths per lakh live births) in the early 1990s (1992-93) to 195 in the early 2000s (2001-2003) and further declined to 134 by 2007-09, indicating a sharp improvement over a period in terms of safe motherhood. The recent estimate of MMR (134) indicates that out of an estimated 15 lakh births a year around 2300 mothers die in a year. The state's MMR is fourth lowest after Kerala, Tamil Nadu and Maharashtra. Nevertheless current MMR

indicates there is still a large gap that has to be covered to achieve the goal of universalisation of safe motherhood.
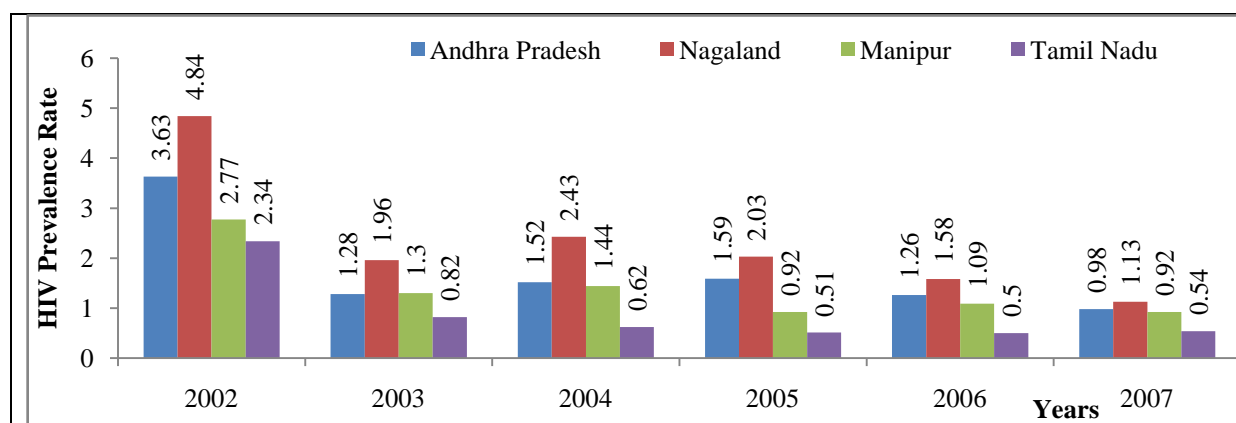
Antennal care, place of delivery and post-natal care of mothers are critical for safe motherhood. About 95% of mothers had antenatal care (ANC) in 2005-06 indicating that most mothers in Andhra Pradesh appear to be taking antenatal care. However, the quality of antenatal care in terms of timing of the first visit and number of visits are important issues. In this respect only 69% of mothers in the state during 2005-06 had their first ANC visit within the first three months of their pregnancy (first trimester) and about 86% of the mother had three or more ANC check-ups/visits in the state. With respect to safe delivery, only two-thirds of the deliveries in the state during 2005-06 are registered as institutional deliveries – i.e. deliveries in any health facility which is equipped with handling deliveries. Although there has been a significant improvement in terms of percentage of institutional deliveries between 1998-99 and 2005-06, still one-third of the child births in the state are taking place in non-institutional environments.

The third most important health issue is malnutrition of children and women. Around one-third under five children in the state were underweight and under-nourished in 2005-06. About 43% of the children in the state are classified as stunted and 12% of them are classified as wasted. Around three-fourth of children in the state are found to be anaemic. The state had witnessed a marginal reduction – a 4 percentage points decline in the level of under-nutrition between 1998-99 and 2005-06. Andhra Pradesh contributes around 3% of underweight children at the national level. The nutritional status among women in the state shows that more than one-third of them have below 18.5 BMI (Body Mass Index) which indicates under-nutrition. Between 1998-99 and 2005-06, there was a marginal decline (about 4% decline) in the percentage of women having BMI below 18.5. Increasing incidence of anaemia is an alarming concern in the state wherein almost half of the women in the reproductive age group (15-49) in the state were anaemic in 1998-99 which increased to two-third by 2005-06.

Integrated Child Development Services is an important national level programme implemented to address malnutrition of children and lactating women. There are about 90 thousands Anganwadi centres which function as grass root level implementing agency in Andhra Pradesh. Yet its impact on under-nutrition among women and children is not evident either in Andhra Pradesh or in India as a whole.

Another equally important issue of concern is the prevalence of HIV/AIDS in the state. The HIV prevalence among ANC attendees in Andhra Pradesh is still highest among all the states (Figure 9.2). Prevalence of HIV in pregnant women in the age group 15-24 years and 25-49 years has come down in the state.

**Figure 9.2: HIV Prevalence among High Risk States - HIV Prevalence among ANC attendees (15-24 Yrs)**

Between 2002 and 2007, the decline in HIV prevalence recorded in the age group 15-25 years was 69.5 % in Andhra Pradesh. During the same period, the decline observed in the age group 25 – 49 years was more than 75 %. According to APSACS (2011), currently the state HIV mean prevalence is 0.77 %. However, the prevalence rate is higher than the state average in Kadapa, Karimnagar, East Godavari, Krishna, Mahabubnagar, Nizamabad and Warangal districts. Particularly HIV prevalence is very high in some pockets of the state. The high prevalence sites are Kadapa (above 4 %) and Ramachandrapuram, Guntur, Jagatyal and Anakapalle (close to 2 %). More focus is needed on districts and sites where HIV prevalence is very high. Special attention is needed to contain the HIV prevalence in Andhra Pradesh.

*National Rural Health Mission (NRHM)*

The National Rural Health Mission launched in 2005 aimed at strengthening healthcare infrastructure in rural areas. The Government of India has set seven measurable targets for the Eleventh Plan. These targets are (i) Infant Mortality Rate (IMR), (ii) Maternal Mortality Ratio (MMR), (iii) Total Fertility Rate (TFR), (iv) Under-nurition among children, (v) Anaemia among women and girls, (vi) Provision of clean drinking water for all and (vii) raising child sex ratio in the 0-6 years age group.

**Table 9.1: Progress and Targets for Select Health Indicators**

| Indicator | Year | Progress and Targets |
|---|---|---|
| Infant Mortality Rate | 2002 | 62 |
| | 2010 | 46 |
| | 2020 – Target | 10 |
| Maternal Mortality Rate | 1997 | 220 |

100

| | 2007-09 | 134 |
|---|---|---|
| | 2020 – Target | 50 |
| Total Fertility Rate | 1992-93 | 2.29 |
| | 2005-06 | 1.79 |
| | 2020 - Target | 1.5 |
| Child Malnutrition | 1992-93 | 42.9 |
| | 2009 | 29.8 |
| Full Vaccination | 1992-93 | 72.3 |
| | 2009 | 68.0 |
| Safe Deliveries | 1992-93 | 77.8 |
| | 2009 | 95.6 |

**Source**: NRHM, Andhra Pradesh

The performance of the State in some of the above indicators is better than all-India and other major states excepting states like Kerala, Punjab and Tamil Nadu. The infant mortality rate in AP is 46 (2010) against the all-India of 50. The maternal mortality rate is 134 for the State compared to the 212 for the country during 2007-09. The total fertility rate was 1.79 for the State compared to 2.68 for the country according to 2005-06 data. 30 % of children in the State are malnourished compared to the 40 % at the national level. The performance of the State in full vaccination and safe deliveries is 68.0 and 95.6 % respectively and is better than all-India figures. However, the fact that there are regional variations and that this performance is not in line with the growth of economy as a whole is a cause of concern.

**Figure 9.1: Iinfant Mortality Rate (IMR) in Districts - IMR in 1998 - 2000 (Estimates by IIHFW 2006-07) and IMR 2006-07 (RCH - II Baseline Survey)**
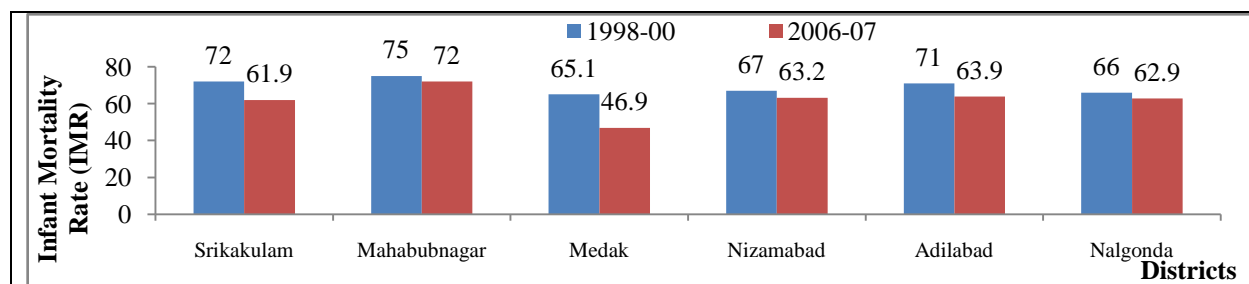


Note:

**Source**: IIHFW and RCH.

Though IMR and MMR figures in the State are less than the national rates, these are still far behind the goals set for the state. Appropriate measures have to be taken particularly in districts/mandals where the rates are still very high. The IMR (IMR was 54 in 2007) was higher than the state average in Srikakulam, Mahabubnagar, Medak, Nizamabad, Adilabad and Nalgonda. These districts are covered with forests and have a number of inaccessible locations. Improving road connectivity along with health facilities will be essential to bring about improvement.

**9.2 Health Care Facilities**

The health status of people in general and women and child health in particular depends upon the availability of and access to health care services. A minimum level of physical infrastructure is needed to provide public health services, and increase access to health services.

There were 349 general hospitals with 36168 beds, 262 dispensaries and 7415 doctors (including 743 contract doctors) to serve the 8.47 crore population of the state in Andhra Pradesh., There are on an average 4 hospitals and 3 dispensaries per ten-lakh population, and 45 beds and 10 doctors per one lakh population. This is inadequate in terms of availability of health facilities and provision of adequate health care to the population.

Moreover, people located in rural areas continue to be the most disadvantaged in terms of access to health care facilities. There are 1570 PHCs, 12522 PHSC and 164 CHCs, serving around 60 million rural population in Andhra Pradesh. The availability of Primary Health Centre/Sub-Centre and Community Health Centre (PHCs, PHSCs and CHCs) in AP is relatively better than the all-India average and many states in India. Nevertheless their functioning is dismal in rural areas. It was observed in field studies that while primary health centres exist, medical personnel are not available. Absenteeism among available doctors is also common in primary health centers.

People in rural areas, can access primary health care easily during medical emergencies, if the health workers (ANM and ASHAs) reside in the villages. Only 10 % ANMs stay in official residence in AP. The situation is better in other Southern states as almost 30% ANMs reside in official residence. Government should encourage ANMs to stay in villages by providing quarters to them.

As elsewhere in India, there is high reliance on health/medical care provided by the private sector in Andhra Pradesh also. However, private sector too is characterized by wide variations in terms of services and the cost of health care. On the one hand, there are a few private hospitals with world class facilities which remain beyond the reach of most people. On the other hand, there are a number of private health care facilities, especially in urban settlements, which are within the reach of common man but offer inferior services by under-qualified practitioners.

Universal public health care based on progressive tax system is more equitable than financing health care from household spending. However, inadequate public funding of health care and inadequate and poor quality of health care facilities force people to access private medical services, paying for them

from their personal resources. The Consumer Expenditure Survey estimates that nearly 6% of total household expenditure in the state is spent on medical care (both institutional and non-institutional), which is in fact higher than the all-India average. During the Eleventh Plan (2007-8 to 2011-12) the public expenditure on health as Percentage of GDP was 0.23%.

A substantial amount about Rs 925 crores – which is nearly one-quarter of the health budget was allocated in 2009-10 for the Arogyashre scheme. Government has not been focusing on augmenting health infrastructure in the State. Bed strength in hospitals for the last 5 years was stagnant at around 35,000. But in all other southern states, many new beds were added in the hospitals (Figure 9.3). While in other non-high focus states like Gujarat, Maharastra, Tamilnadu and Karnataka, many specialists and doctors were recruited, AP had no recruitments of specialists and doctors in secondary and tertiary health care facilities.. IIPS study also pointed out that there is a shortage of specialists and doctors in AP with less than 17% CHCs having a General Surgeon, Physician, or a Gynecologist (IIPS, 2010).

**Figure 9.3: Bed Strength in Hospitals of AP, Karnataka, Tamilnadu and Kerala**
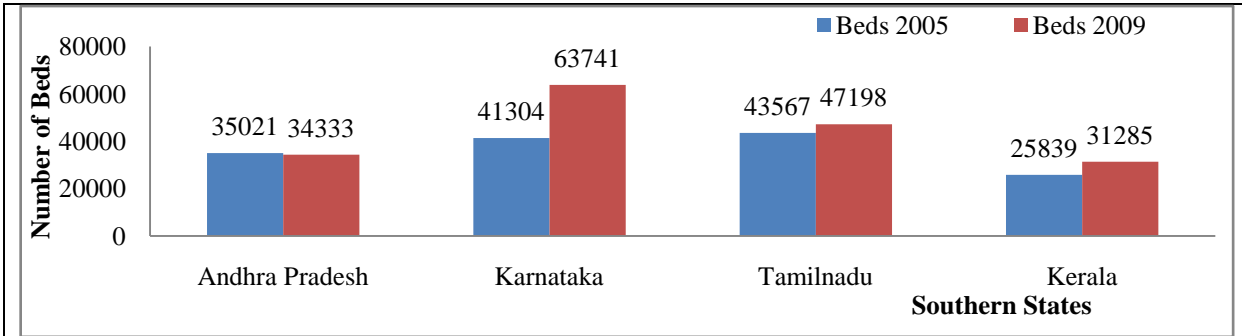


Note:

**Source**: Statistical Abstract India.

It is clear from the Figure 9.3 that the health infrastructure in terms of bed strength in Andhra Pradesh is substantially lower compared to fellow southern state.

There are two noteworthy initiatives specific to Andhra Pradesh in health sector. The state pioneered promotion of Public Private Partnership (PPP) in health care (Arogyashree and fee reimbursement for medical students of both private and government colleges). Andhra Pradesh has also pioneered mobile emergency pre-hospital health care services. The Emergency Management Research Institute (EMRI) manages the mobile emergency health services, popularly known as 108 services which provides emergency health services by giving timely aid to  accident victims and other related emergencies.

It is estimated that there would have been about 34,451 more deaths in 2009 in the absence of EMRI services. The NCRB data indicate total deaths of 27,955 during 2009 which is 23% less than estimated figures. The data for 2008 was to the tune of 28,911 deaths as against an estimate of 31753, which showed a decline of 10%. While there was an increasing trend in deaths recorded until 2007 Deaths recorded by NCRB are showing a progressive decline of more than 2% since 2007. Reduction in deaths due to injury needed effective pre-hospital care that was provided by EMRI. It is strongly desirable to sustain and further expand these services by improving road connectivity.

## 9.3 An Approach to 12<sup>th</sup> Plan

Access and affordability are the major cause of concern in general health of the population in general and the women and child health in particular in Andhra Pradesh. Since efforts in reducing these long pending concerns have not been satisfactory, these issues continue to remain as the key policy concerns of the state even in the 12<sup>th</sup> Plan period.

Health infrastructure needs to be augmented (increase bed strength and improve the quality of existing beds). Interestingly, the bed occupancy in AP was much higher (69%) than TN and Karnataka. Government hospitals should be equipped appropriately to attract Arogyashree health insurance scheme patients.

Compared to other north Indian states, Andhra Pradesh produces more medical professionals every year which represents about more than 60 % of the medical seats available in South Indian states. State should take this as an opportunity and bring fresh medical professionals into primary health care by offering attractive incentives. The advantage of health professionals that AP has can be utilized for promoting quality health tourism in Andhra Pradesh.

While rural health statistics on PHCs and Sub Centres are available on regular basis, it is not available on Secondary and tertiary level health facilities. A strong MIS is needed for proper management of health resources.

While most of the PHCs and CHCs had registered Rogi Kalyan Samithis (RKS), only 40 % of Gram Panchayats still have to form VHSCs. PRIs and CBOs should get involved in Health Committees which provide capacity building through regular refresher training programmes.

Three types of delays that can affect a woman's chances of surviving an obstetric emergency have been identified. Types I and II delays are in deciding to seek care when danger signs appear and delay in reaching a health facility. These delays are mainly caused due to some social factors – lack of

resources, poor infrastructure, dearth of appropriate facilities, woman's low status, and family decision about child birth. Type III delay is determining phase in accessing EmOC – in this delay a woman's life can be saved if timely medical attention is made available in case of complicated pregnancy. Perhaps due to the facts cited above, only 81 % of the deliveries (as per the IIPS study) of the last child took place in a medical institution. The situation was much better in Kerala (97 %) and Tamilnadu (91 %) where majority of the deliveries took place in medical institutions. In Andhra Pradesh, on the other hand only about 38 % home deliveries were attended by health personnel.

A substantial proportion of household expenditure is spent on outpatient care. Informal health care providers are the mainstay of health advice and provision of basic care in rural and urban slums. The quality of primary health care services should be improved so that all people avail these services. Often there is a mismatch in availability of health man power and health infrastructure. To address these anomalies and for better management of the resources, health management professionals should be deployed at all levels.

The pioneering promotion of (PPP) in health care (Arogyashree and fee reimbursement for medical students of both private and government colleges) can be augmented by transfering selected health facilities to private sector (including reputed NGOs) depending on local situations
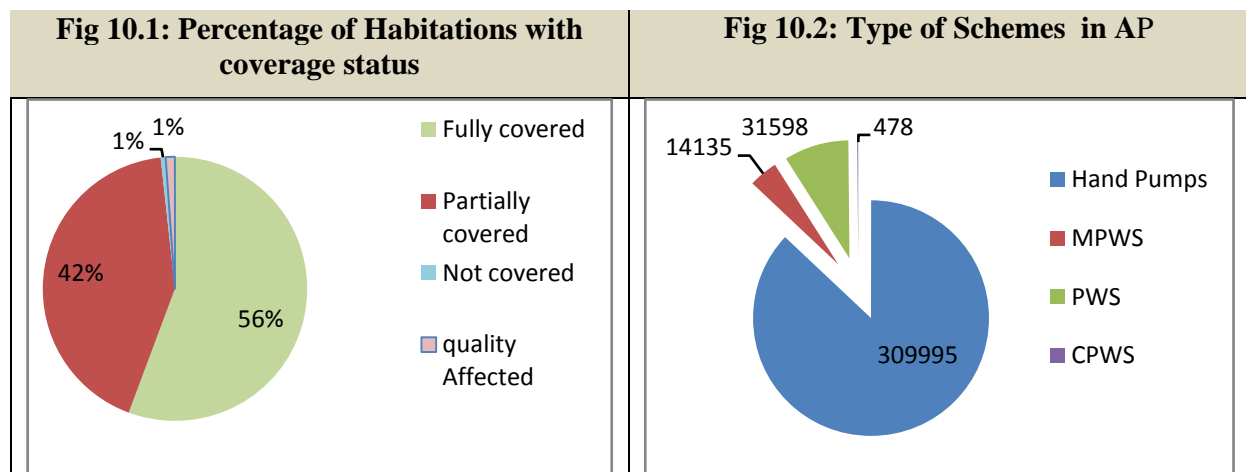
It is strongly desirable to sustain Emergency pre-hospital care which is an important part of health care system by improving road infrastructure and replacing old ambulances with new ones. Finally, the state needs to strengthen Anganwadi Centers (AWCs) while implementing ICDS to address under-nutrition among women and children.

# 10. Rural Drinking Water and Sanitation

## 10.1 Introduction

Lack of safe and secure drinking water continues to be a major policy concern despite an estimated Rs. 1,105 billion spent on providing safe drinking water since first Five Year Plan,. Moreover, lack of access to safe drinking water imposes huge economic burden (estimated at US$600 million /year), as around 37.7 million Indians get affected by waterborne diseases annually, an estimated 1.5 million children die of diarrhea and 73 million working days are lost due to waterborne disease each year (Khurana & Sen 2008). A recent study conducted by the World Bank reports that health related economic impacts of inadequate sanitation which is put at, Rs.1.75 trillion, accounts for the largest category of impacts. Access time (productive time lost to access sanitation facilities/shared toilets/open defecation ) at 487 billion rupees and drinking water related impacts estimated at 191 billion rupees are the other two main losses (WSP, 2011).Though safe water and sanitation are a priority agenda for the Government of India, budget allocations towards this sector is minimal compared to its requirement.

So far Rs 658.30 million were spent on provision of water supply & sanitation infrastructure since its inception and about 200 million rupees during the years 2004 to 2008 in the State. .

| Fig 10.1: Percentage of Habitations with coverage status | Fig 10.2: Type of Schemes in AP |
|---|---|



Source: www.indiawater.gov.in

Source: watersoft

Geographically AP is the 4th largest state in India with a population of 90 million spread over 2.75 lakh Sq kms. It has 72407 habitations as on 1.04.2011 having population of about 60 million. The status of water supply in the state as on 1st April 2011 is as follows. 38,575 habitations (56%) having a population of about 26 (43 %) million are fully covered; 33023 habitations (42%) having a population of about 32 (53 %) million are partially covered and 155 habitations having a population of

3,33,55 are not covered & 654 habitations having a population of 55,851 fall under quality affected habitation categories respectively (Figure 10.1). In terms of drinking water coverage AP ranks 19th among other states in India.

*10.1.1 Water Supply Schemes in Andhra Pradesh:*

Potable drinking water is provided to rural population through hand pumps (nearly 3.1 lakh), Mini Piped Water Supply Schemes (MPWS-14150), Piped Water Supply Schemes (PWS/SVS-31598) and Comprehensive Piped Water Supply Schemes (CPWS/MVS-478). About 38575 habitations out of 72407 are covered by Piped Water Supply schemes. (Figure 10.2)

**10.2 Water Supply Coverage Status in Andhra Pradesh**

The District wise Fully (40 LPCD-Liters Per Capita Per Day: National norm before the 2010 guidelines) and Partially (<40 LPCD) covered habitations varies across districts and the progress made by each district in terms of reaching the norms with their coverage status is shown in the figure 10.3.

**Fig 10.3: District wise Fully and Partial Coverage status**
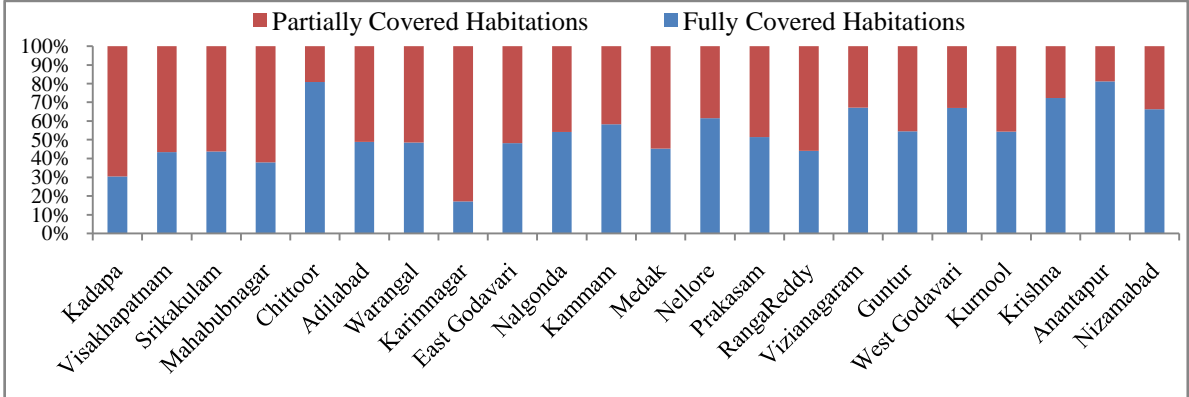


Source:www.indiawater.gov.in 2011

The above figure clearly indicates that Karimnagar, Kadapa, Visakhapatnam, Adilabad, Warangal, East Godavari, Mahaboobnagar, Srikakulum, Visakhapatnam , Medak and Ranga Reddy have not even covered 50% of the habitations in terms of full coverage status warranting all efforts to attain full safe drinking water facilities coverage in these habitations. Habitations which reach full coverage status often slip back in coverage. It is estimated that there is around 30% slippage from full coverage at any given point of time in India. Analysis from WASHCost study reveals that all households within full covered habitation do not receive 40 LPCD water with the poorest being the worst affected. Reasons for the inequity are varied economic, social and technical factors. WASH governance and support mechanisms require a major restructuring to ensure equitable service delivery.

*10.2.1 Quality affected and Not Covered Habitations:*

Even though coverage is increasing in a few places, ensuring standards of water quality has been a major issue. Exploitation of groundwater, pollution from agricultural and industrial waste, etc., are few factors responsible for deteriorating water quality. Increasing number of villages affected by flouride every year is an alarming issue and needs to be tackled on a war footing before adverse health impacts population. The number of habitations affected by quality and the non covered villages are given in the Fig 10.4.

**Fig 10.4: Quality affected and not covered habitations in Andhra Pradesh**
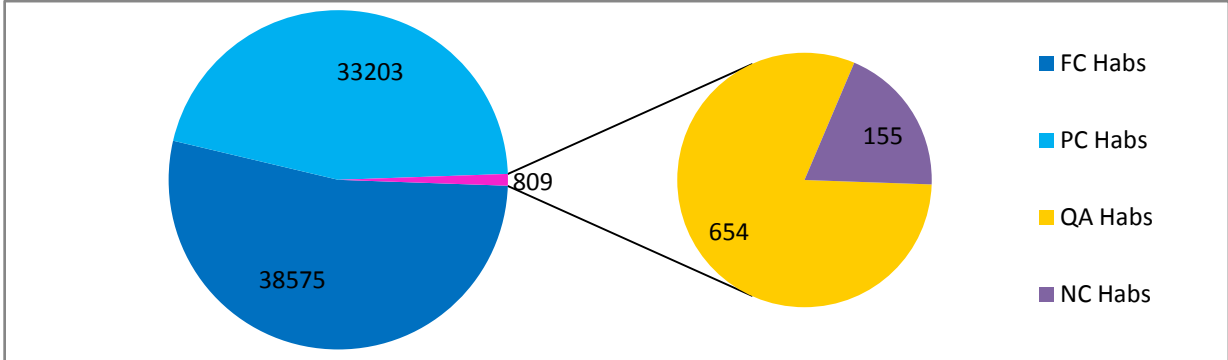


Source: watersoft 2011

## 10.2.2 District Wise Quality Affected and Not Covered Habitations

Prakasam (232) district followed by Nalgonda (108), Guntur (98), Karimnagar (43), Mahaboobnagar (42), and Krishna (32) districts (Fig. 5) have the highest numbers of Quality affected habitations.  In terms of population, Guntur district has the highest quality affected population (173244) followed by Prakasam (129453), Karimnagar (60723), Mahaboobnagar (60503), Nalgonda (52227) and Krishna (21844) districts.

**Fig 10.5: District Wise Quality Affected and Not Covered Habitations**
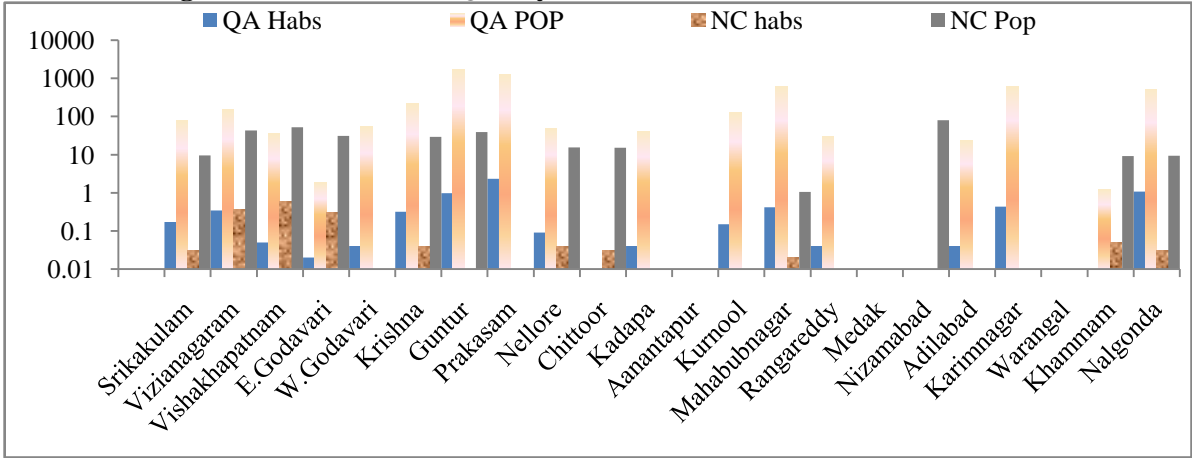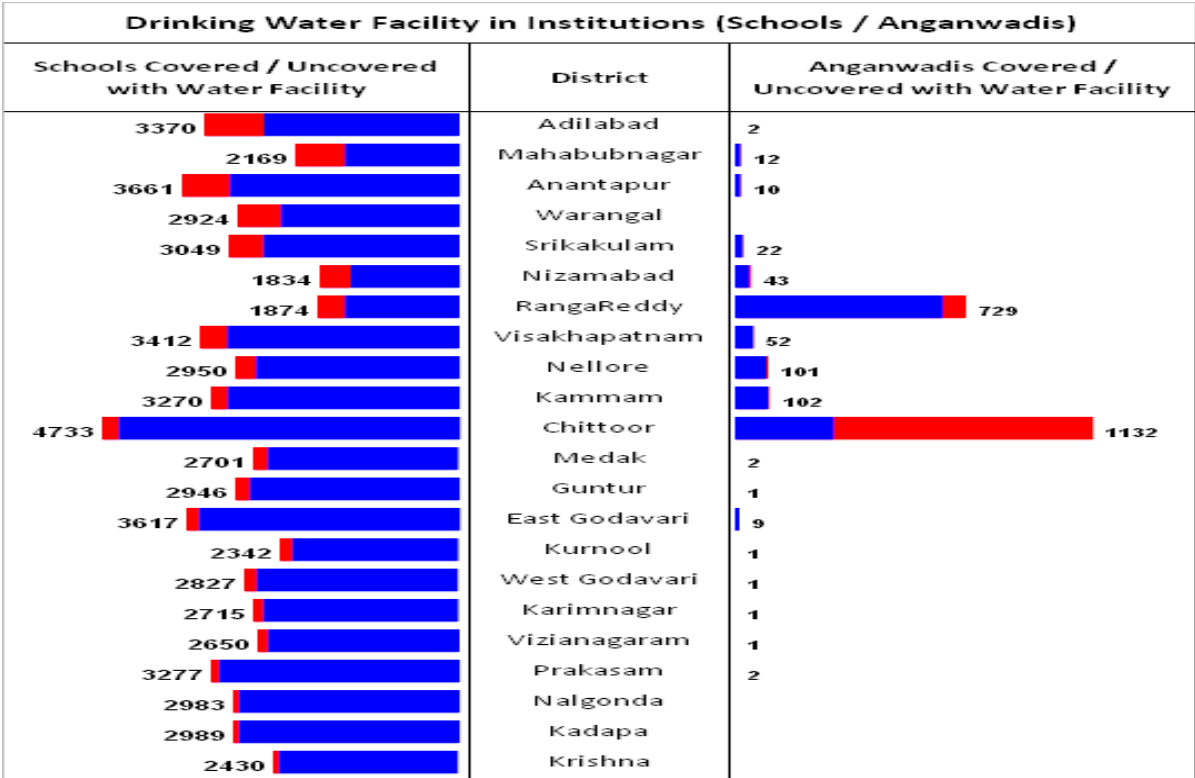


Source:  www.indiawater.gov.in  2011

Present status calls for an immediate action to tackle the issues of quality on a priority basis in these districts, while protecting water sources in other districts before the quality deteriorates.

### 10.2.3 Status of Drinking water facilities in schools and Anganwadi centers:

It is estimated that only 5,852 schools are provided with drinking water facilities out of 64,723 schools and only 1309 Anganwadies have drinking water facilities against 2237. The district wise details indicates ( Fig 6) that Adilabad, Mahaboobnagar, Ananthapur, Warangal and Srikakulum districts have to work hard to provide drinking water facilities in schools. Moreover, the targets set for drinking water facilities are poor and districts have failed to achieve even those meager targets.

**Fig 10.6:  District wise coverage of drinking water facilities in schools and Anganwadi Centres in Andhra Pradesh**



Source: www.indiawater.gov.in  2011

## 10.3 Sanitation Status in Andhra Pradesh

Total Sanitation Campaign (TSC) is the Flagship program that provides sanitation services in the department. The components include individual sanitary toilets, institutional toilets (Schools and Anganwadi Centers) and Rural Sanitary Marts (RSMs) and solid and liquid waste disposal in habitations. Though millions of rupees are spent to address the issue of sanitation, millions of people still defecate in open spaces causing environmental concerns and provide breeding ground for health disorders. Though there is a close link between water supply and sanitation, when it comes to implementation sanitation gets the least priority. Though sanitation requires more soft-ware inputs for

behavior change the focus is still on provision of toilets and not looking into demand generation and sustaining behavior change. Though incentives and rewards like Nirmal Gram Puraskar( NGP) awards are instituted the percolation of the concept of sanitation and its importance has not spread across villages.

*10.3.1 Coverage status of Individual Household Sanitary Toilets (IHHLs)*

Individual Sanitary toilets coverage status across districts reveals that anticipated progress has not been made and that given this rate of achievement, attaining the Millennium Development Goals is a myth. The Fig 10.7 shows that Srikakulum, Mahaboobnagar, Prakasam, Guntur, Nellore Kurnool and Karimnagar have not even reached 50 % of coverage status indicating that intensive efforts will be required to reach rural households. Further the WASHCost study also reveals that toilet usage figures are much below than coverage figures and that a slippage was observed in sanitation even in Nirmal Grama Puraskar villages. This suggests that the Government should focus more on demand driven approach than supply driven and that focus on behavior change should be the top priority rather than supplying material / infrastructural facilities. Progress across districts indicates that Prakasam, Kadapa, Nellore, Srikakulum, East Godavari, Khammam, Medak, Guntur, Mahaboobnagar, West Godavari , Karimnagar ,Kurnool and Adilabad districts have to focus efforts to provide facilities. Several Studies have pointed out that one of the key reasons for school dropout rate among girl students is lack of toilet facilities in schools.

**Fig 10.7:  Individual Household Latrines (IHHL) coverage across the districts in A P**
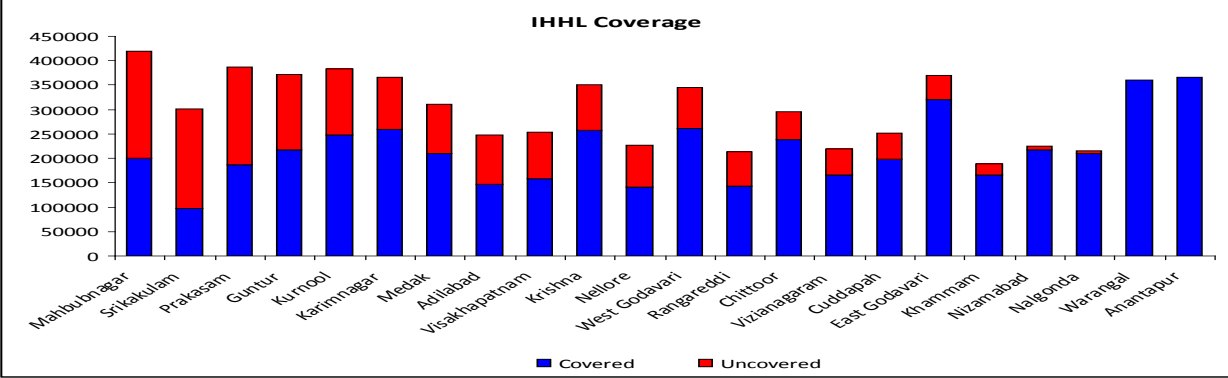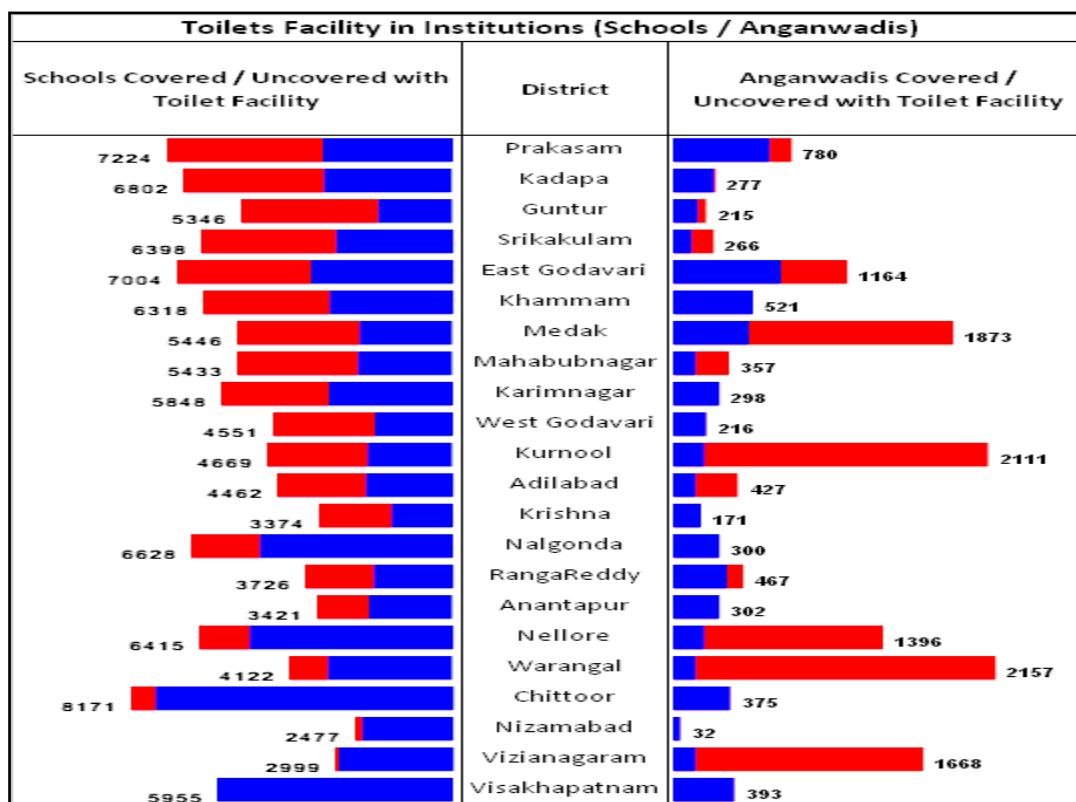


Source:  www.indiawater.gov.in    2011

*10.3.2 Coverage Status of Institutional toilets:*

Sanitation facilities created at school and Anganwadi centers are very poor in majority of the districts and a lot needs to be done to reach all schools and Anganwadi centers in the state. Fig 8 depicts that Prakasam, Kadapa, Guntur, Srikakulum, East Godavari, Khammam, Medak, Mahaboobnagar, Karimnagar, West Godavari, etc have not even reached the 50% coverage while other districts are

faring comparatively better. However, almost all districts need innovative and extensive strategies to cover schools and Anganwadies with separate toilets for boys and girls.
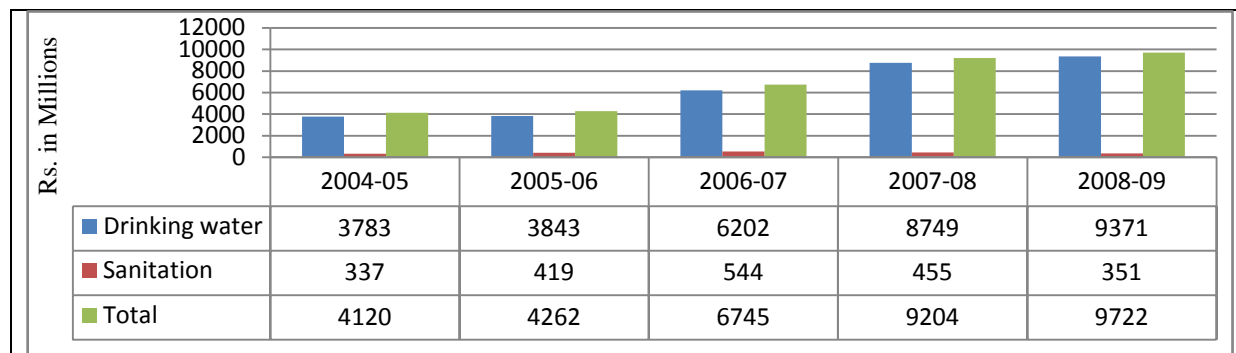
**Fig 10.8: District wise institutional toilet coverage status**

| Schools Covered / Uncovered with Toilet Facility | District | Anganwadis Covered / Uncovered with Toilet Facility |
|---|---|---|
| 7224 | Prakasam | 780 |
| 6802 | Kadapa | 277 |
| 5346 | Guntur | 215 |
| 6398 | Srikakulam | 266 |
| 7004 | East Godavari | 1164 |
| 6318 | Khammam | 521 |
| 5446 | Medak | 1873 |
| 5433 | Mahabubnagar | 357 |
| 5848 | Karimnagar | 298 |
| 4551 | West Godavari | 216 |
| 4669 | Kurnool | 2111 |
| 4462 | Adilabad | 427 |
| 3374 | Krishna | 171 |
| 6628 | Nalgonda | 300 |
| 3726 | RangaReddy | 467 |
| 3421 | Anantapur | 302 |
| 6415 | Nellore | 1396 |
| 4122 | Warangal | 2157 |
| 8171 | Chittoor | 375 |
| 2477 | Nizamabad | 32 |
| 2999 | Vizianagaram | 1668 |
| 5955 | Visakhapatnam | 393 |

**10.4 Budgetary Allocations for WASH (Water Sanitation and Hygiene) Sector in A P**

Budgetary allocations for WASH sector at the state level, especially sanitation, are complex and complicated. Funds for Rural sanitation programs are provided entirely from the central funds, while the state RWSS is expected to add 10 % of funds to the central funds from its budget. Moreover, there is no separate subhead for sanitation in the RWSS budget provisions. Even these limited allocations are not realized fully in most of the years.

**Fig 10.9: Budgetary Allocations for WASH in Andhra Pradesh**

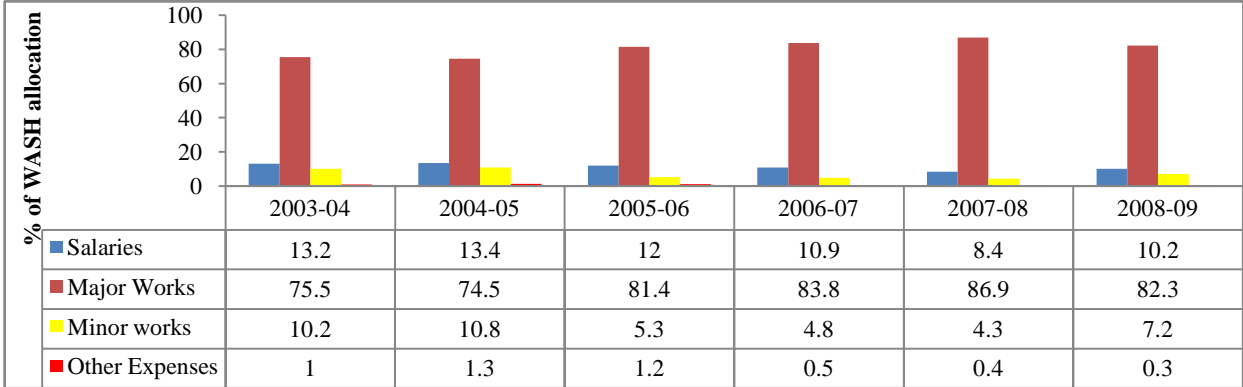| Rs. in Millions | 2004-05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 |
|---|---|---|---|---|---|
| Drinking water | 3783 | 3843 | 6202 | 8749 | 9371 |
| Sanitation | 337 | 419 | 544 | 455 | 351 |
| Total | 4120 | 4262 | 6745 | 9204 | 9722 |

Source: Adapted from Reddy& Kumar 2011.

As data on RWSS expenditure on sanitation are not readily available the 10 % norm is adopted for estimate. Budgetary allocations towards rural WASH sector have more than doubled during recent years (Figure 10.9). The increase in allocations is only in drinking water while allocations towards sanitation remained stagnant with just marginal increase in few years. In relative terms, the share of sanitation in the WASH sector has declined from 8 % in 2004-05 to 4 % in 2008-09. These allocations towards sanitation are too little to meet requirements of rural sanitation, where the costs come to about Rs. 10000 per household.

Analysis of allocations made in the sectors shows that majority of the funding is biased towards engineering which neglects the social or institutional components which are essential to sustain physical structures provided. Year wise allocations for salaries, major works, minor works and other expenditure from 2004 to 2009 are given below and represented in graphical form in Figure 10.10.

### Fig 10.10: Allocation towards different component during 2004 to 2009



| % of WASH allocation | 2003-04 | 2004-05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 |
|---|---|---|---|---|---|---|
| ■ Salaries | 13.2 | 13.4 | 12 | 10.9 | 8.4 | 10.2 |
| ■ Major Works | 75.5 | 74.5 | 81.4 | 83.8 | 86.9 | 82.3 |
| ■ Minor works | 10.2 | 10.8 | 5.3 | 4.8 | 4.3 | 7.2 |
| ■ Other Expenses | 1 | 1.3 | 1.2 | 0.5 | 0.4 | 0.3 |

Source: RWSS 2010

It can be inferred from the above figures that;

- More than 80 % of the allocations are allocated to infrastructure that focuses on access to infrastructure instead of ensuring service delivery
- Allocations towards minor works, covering mostly operation and maintenance costs, not only fluctuate (ranging between 11% and 4 %) but also reveal a declining trend
- Decrease in salaries indicate limited staff with extra-work overload and low or no focus on IEC and behaviour change

### 10.4.1 Financial Progress in the 11th Plan period:

It could be seen from the table below that the number of works taken up and year-wise expenditure for provision of drinking water facilities have both increased. Coverage of habitations has increased every year with more and more infrastructure being created at the habitation level. While this is a good sign improving coverage cannot ensure improved service delivery unless the operation and maintenance

and capital maintenance is also ensured. Further software components are very essential to strengthen capacities of individuals and communities responsible for ensuring service delivery.

**Table 10.1: Progress made in the 11ᵗʰ five year plan 2004-2010**

| S. No | Year | No of works/projects | Estimated cost | Expenditure | Habitations covered |
|---|---|---|---|---|---|
| 1 | 2004-05 | 4244 | 783.2 | 556.62 | 4129 |
| 2 | 2005-06 | 2382 | 602.65 | 503.63 | 3294 |
| 3 | 2006-07 | 12310 | 1751.61 | 544.1 | 5198 |
| 4 | 2007-08 | 13931 | 3285.96 | 498.75 | 5066 |
| 5 | 2008-09 | data not available | data not available | 950 | 6500 |
| 6 | 2009-10 | data not available | data not available | 910 | 6750 |
|  | Total | 32867 | 6423.42 | 3963.1 | 30937 |

Source: State Budget Documents.

## 10.5 Strategies for the 12ᵗʰ Plan

### 10.5.1 Need for more Allocations for WASH:

It is observed that budgetary allocations towards rural WASH sector are not only inadequate to meet requirements but are also declining in relative terms. Actual requirements are higher by 4 to 10 times. There is a need to reassess the real cost of providing sustainable WASH services on the lines suggested in the new guidelines, which would require a multi-fold increase in allocations. Adapting to the life-cycle cost approach in tune with the new comprehensive guidelines, and incorporating issues like resource protection, rehabilitation, water quality, support costs, etc., along with infrastructure costs, can help in estimating costs realistically and ensuring sustainability.

### 10.5.2 Year wise budget requirements for the 12ᵗʰ Plan period

Based on findings from WASHCost survey it is very critical to adopt a life cycle costing approach to allocate resources to reach remaining habitations and to bring partially covered habitations to fully covered habitations status. Table 10.2 provides a rough estimation of financial resources required to deliver water supply, ensure the quality, quantity with reliable sources and timings within accessible distance.

**Table 10.2: Year wise allocations required for water supply in the 12ᵗʰ plan (Rs. in Lakhs)**

| Year | For improving PC to FC | Amount required | NC to FC | Amount required | QA to FC | Amount required | O&M costs(estimated using life cycle costing approach and previous years expenditure) | Capital Maintenance/Rehabilitation costs (estimated using LCCA &previous years expenditure | Direct and Indirect support costs | Total Amount Required |
|---|---|---|---|---|---|---|---|---|---|---|
| 2011-12 | 6377 | 56118 | 445 | 4406 | 405 | 5792 | 30000 | 20000 | 6000 | 122316 |
| 2012-13 | 6377 | 56118 | -* | - | 405 | 5792 | 30000 | 20000 | 6000 | 117910 |
| 2013-14 | 6000 | 52800 | - | - | - | - | 30000 | 20000 | 6000 | 108800 |
| 2014-15 | 6000 | 52800 | - | - | - | - | 30000 | 20000 | 6000 | 108800 |
| 2015-16 | 6000 | 52800 | - | - | - | - | 30000 | 20000 | 6000 | 108800 |
| Total | 30754 | 270635 | 445 | 4406 | 810 | 11584 | 150000 | 100000 | 30000 | 566625 |

*The O&M costs are calculated @12% of the capital costs, Capital maintenance is calculated @10% of the capital costs, direct and indirect support costs are calculated using 2% costs of capital investments.*

### 10.5.3 Prioritize Sanitation:

It was pointed out that while sanitation sub-sector gets ridiculously low allocations and its actual expenditure is much lower. There is a need for wider recognition of the importance of sanitation at the policy level. The abysmally poor sanitation conditions do not augur well for a country, which takes pride in the fact that it is among the fastest growing economies. Unless there is a substantial shift in the policy towards sanitation in terms of allocations and planning, sanitation would continue to be a nagging problem resulting in huge economic losses through adverse health impacts. In this context, mainstreaming sanitation rather than treating it as a by-product of drinking water with appropriate policy and institutional initiatives would go a long way in addressing the problem.

### 10.5.4 Demand Driven approach:

The supply driven approach and supply of raw material for constructing toilets is to be discontinued with focus of Government shifting towards creating demand for toilets. Moreover, a monitoring system needs to be put in place to support behavior change process. The meager subsidy provision (which is not sufficient to construct a proper toilet) needs to be replaced with proper loan provision linking it through Self Help Groups. Target driven sanitation program must be discouraged and the concept of behavioral change with a focus on usage ought to be promoted.

### 10.5.5 Comprehensive O&M Plan:

There is an urgent need to create and put in place a comprehensive O&M plan and structure with a separate wing for sustainable O&M at all levels i.e. mandal, district and state to protect infrastructure and to ensure service delivery. It is equally important to build capacities of technicians and watermen at the village level to foresee effective O&M and to safeguard assets. It is essential to increase the O&M budgetary allocations to enable self-sustenance of the schemes and institutions. There is a need to rework the tariff structure to enable sustainable O&M and link it with CBOs and CSOs to address O&M issues. O& M strategy requires comprehensive guidelines on the roles and responsibilities of each organization/agency/CBO involved for fixing accountability. Another strategy could be to enable outsourcing of services by CBOs to recognized technical agency by the department with a clear service contract.  Decentralization and devolution of powers to the village Panchayats regarding functions, functionaries and funds, is a necessary condition for this.

*10.5.6 Development of Comprehensive village micro plan with holistic approach:*

An integrated and comprehensive micro plan at the village level developed in a participatory rather than a piece meal and ad-hoc manner, which duly considers all requirements of convergence by merging financial and human resources for promoting a self-sustaining development plan has to be created. Capacitating local Panchayats is again essential for formulating micro plans at the village level.

*10.5.7 Reforms*

All schemes must be implemented under a single policy in a reforms mode to promote ownership concept and ensure sustainability of assets created.

*10.5.8 Governance & Transparency and accountability:*

For ensuring proper service delivery and O&M, proper management and Governance systems are mandatory. As the present model of management by Panchayat has not been successful due to financial and technical constraints and there is a need to dencentralise powers and finances to the panchayat with effective systems of accountability. There is also a need to develop indicators (Input indicators/output indicators/process indicators) at various levels including bench marking for monitoring and for bringing out a mechanism to promote competitive spirit among the GPs

*10.5.9 Water Quality Monitoring:*

Most of the water supply schemes are based on Groundwater resources and about 3.5 lakh bore wells installed with Hand pumps. The competing demand for groundwater for various purposes has reduced well yields and deteriorated water quality especially increased incidence of fluoride, salinity, Nitrate, etc presence in water. Hence priority is to be given to address issues of quality with proper budgetary allocations especially to the districts like Parkas, Algona, Vizayanagaram and Srikakulum. A proper monitoring system to assess the quality of drinking water sources is to be made mandatory by filling up vacant staff positions and by proper supply of chemicals and equipment to regional and district water quality labs.

*10.5.10 Source Sustainability:*

One of the major reasons for slippage in access to safe drinking water is source sustainability. NREGS works can be dovetailed to protect the source in every habitation. Further focused attention is to be directed towards integrated water resource management for ensuring long term sustainability of drinking water sources.

*10.5.11 Groundwater pollution:*

Groundwater resources form a major source of drinking water in rural areas. Large number of drinking water sources is located on the stream bed or close vicinity of stream. Many of these resources are

getting polluted due to human interventions / activities. Further, because of the promotion of large number of toilets especially in the coastal alluvial belt, permeable soils and areas of large groundwater table fluctuations, groundwater is getting polluted. As such, there is an urgent need to protect it and the need for water quality monitoring at frequent intervals.

### *10.5.12 Protection of Surface water bodies (Tanks):*

While tanks serve as a major source of groundwater recharge structures, most of the water bodies are either encroached upon or deprived of proper maintenance. Villagers must protect this valuable source to enable equitable distribution of water.

### *10.5.13 Promotion of Artificial Recharge structures, conservation and effective implementation of WALTA:*

Water recharge and conservation structures are being taken up under different programs by various departments. These programs must be implemented in an integrated manner through convergence of actions and funds with a focus on recharging drinking water sources on priority basis.

### *10.5.14 Revision of norms for FC and PC*

Present norms for categorizing FC and PC habitations are based on infrastructure created vis-à-vis certain assumptions and do not address issues like equity and service access. Hence, fresh norms are needed for categorizing FC and PC and to address equity and service levels and for ensuring satisfaction of all groups including the down trodden and neglected.

# 11. Education and Skill Development

Education is a critical issue for the socio-economic progress of the individual and the nation. It is also a crucial aspect for equitable and sustainable development of human capital and human development from the rights perspective. Since the early 1990s the Government of India on lines of International movement towards Education for All (EFA) has also committed itself to Education for All (EFA). The EFA encompasses six goals of early childhood care and education, universal elementary education, adult literacy, adolescent and life skill education, gender equality and the quality of education. focus upon elementary education is also included in another global initiative, the Millenium Development Goals (MDGs) and India being a part of the initiative has committed itself to achieve these goals.

Andhra Pradesh committed to EFA and MDGs is making efforts to achieve these goals. At the elementary school level, which is the foundation of the pyramid in formal education system, the state under DPEP and Sarva Shiksha Abhiyan (SSA) has experienced a break-through during the last two decades. However, the goal of universalisation of elementary education is yet to be achieved. Moreover, now it is now being realised that in an emerging knowledge based economy a mere eight years of elementary education would be grossly ,inadequate in acquiring necessary skills that industry demands and to compete in the job market. This has stressed the need for universalisation of Secondary Education which is instituted as the key goal of Rashtriya Madhyamik Shiksha Abhiyan (RMSA) a scheme launched by Government of India in 2009. Andhra Pradesh has to make efforts to achieve this goal. Additionally, from an economic growth point of view focus and strengthening of higher and technical education is also equally important.

Prognosis for the 12th Plan appears to promising when we take stock of the strides made in the education sector in the 11th Plan. While substantial progress has been made in access, enrolment, retention, equity, and quality, in education, progress has been slow in achieving set goals with respect to elementary and secondary education.

In this regard, during the forthcoming 12th Plan period, the state can make rigorous efforts to achieve universalisation of quality elementary and secondary education and attain substantial progress in higher and technical education. Taking stock of the achievements and issues of concern in educational development in recent years the approach of the twelfth plan for education sector is detailed in the following section.

## 11.1. Pre-Schooling

It is observed that lack of universal pre-schooling and the consequent poor vocabulary and poor conceptual development of mind makes even enrolled children less active and alert in the class. (Erickson, 2007; Barnett, 2008). The fact that these children are unable to learn even by rote shows the

importance of pre-schooling. However, pre-schooling for children between three to five years age has not made as obligatory either at the State or at all India levels. Latest information based on NSS employment and unemployment survey (2009-10) shows that about 86% of 3 year olds and about 70% of 4 year olds in Andhra Pradesh do not attend any type of pre-schooling.Only 13.8% of the 3 years olds and one-fourth of 4 years old children are attending pre-schooling centres in the state.

**Figure 11.1.1: Attendance Rate (%) of Pre-school age (3-6 years) Children in Andhra Pradesh, 2009-10**
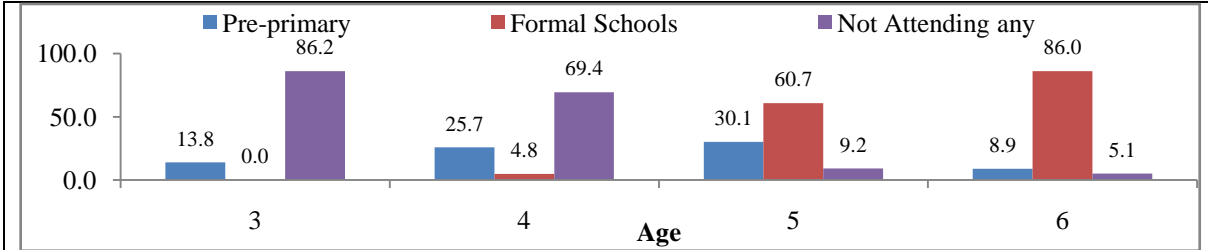


**Note**: 1. Rural and Urban combined; 2. Pre-primary including those attending nursery/kindergarten etc.
**Source**: Estimated using NSS 66th (2009-10) Round Employment and Unemployment Survey unit record data.

With respect to 5 year old children while above 90% of children attend either pre-schooling centres (30%) or formal schools (61%), the rest 9% are out of schools. The fact that only 5% of 4 year old and 61% of 5 year old attend formal schools could be burdensome for teachers as many of the primary classes in formal schools especially in the public sector are not equipped to deal with pre-primary schooling. These pre-primary age group children attending formal schools could be due to lack of pre-primary schooling centres in the state. This underlines the need for building up a system of pre-primary schooling especially in the public sector.

*Anganwadis* - the gross root level center implementing Integrated Child Development Scheme (ICDS) can become a possible option for pre-schooling. There are an estimated total number of 89,952[6] (74,516 in rural, 7,446 in Tribal and 7,990 in urban areas) sanctioned (as on August 2011)*Angawadi* Centres (AWCs) in Andhra Pradesh,. This means that given the total state population at 8.5 crore, one AWC is sanctioned for every 1000 population. The Annual Status of Education Report (ASER) 2010 shows that the attendance of 3 to 6 years old children in pre-schooling centres (either *Balawadi*, *Anganwadi*, or other privately managed Kindergarten (Nursery/LKG/UKG) centres) in rural Andhra Pradesh seems to be substantial.

However, about 28% of 3 years old rural children in the state have not attended any pre-school centres. And about 68% of the 5 years old (rural) children who are supposed be in pre-schooling system are attending formal schools. However, high attendance rate may not really be an indication of provision of non-formal pre-school education in these *Balwadis*/*Anganwadis*. As most of these centres

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[6] Information extracted from the source: http/www.ap.anganwadi.in.

are not necessarily equipped to provide pre-schooling education, the high attendance rate is mostly because they act as a center for distribution of nutritional food and children attend to get benefit from the supplementary nutrition programme.

There are two types of nutritional supplementation programmes in the state: in one programme these *Balawadis/Anganwadis* provide ready to eat (RTE) food wherein physical attendance of the beneficiary child is compulsory. In the other programme , nutritional food (carry home) is distribution on a weekly or monthly basis and where daily attendance of beneficiary child is not compulsory. In those *Balwadis/Anganwadis* centres in which daily presence of children is required it is not known as to how long the children who attend these centers are kept in the centers. In the latter types of *Anganwadis* the intended services of ICDS in terms of pre-school education may not be given to all those children registered in these centres.

To address this anamoly, a major initiative of integration of pre-schooling centres (*Balwadi/Anganwadi*) with primary school system is required at the state as well the national level. Pre-school education through ICDS which has not been addressed so far needs to be focused upon during the 12th Five Year Plan in the state.

## 11.2. Elementary

The state has experienced a break through during the last two decades under District Primary Education Programme (DPEP) and Sarva Shiksha Abhiyan (SSA) in  elementary level considered the foundation of formal education system, However, universalisation of elementary education is yet to be achieved.

**Figure 11.2.2: Access to Schooling in Andhra Pradesh – Percentage of Population by their Nearest Distance to School, 2007-08**
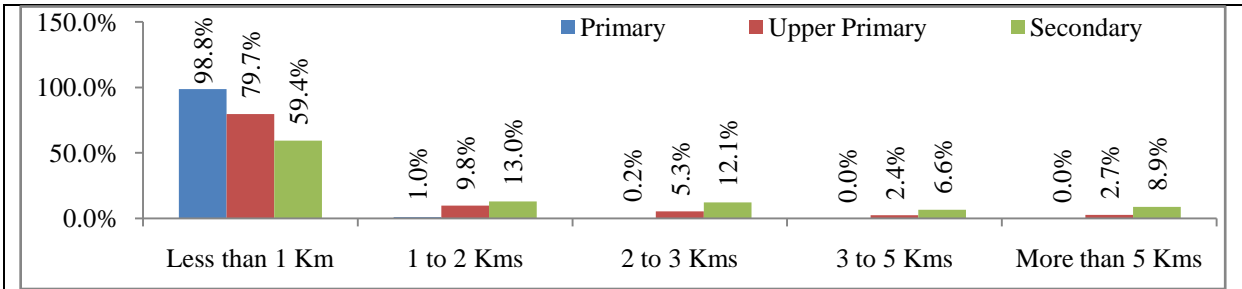


**Note**: Refers to Schools with primary, middle and secondary classes.

**Source**: Based on NSS 64th (2007-08) Round Survey on Literacy and Participation Education (Sch 25.0) unit record data.

There are about 84 thousand schools for the primary classes (up to V) and 33 thousand schools for the middle level schooling in the state. In other words, there are about 100 schools with primary classes and 40 schools with middle schooling classes (VI and VII) per lakh population. The ratio of middle

schools to the primary ones is around 1:2.5 (one middle school for three primary schools) and the ratio is within the limits of SSA norms. In terms of distance to schools with primary and upper primary classes, it is observed that 99% of the total population in the state had a school with primary classes within a distance of one kilometre and about 90% of the population covered with schools with middle schooling located within two kilometre distance. Availability of schools in the neighbourhood has improved and thereby access to schooling has been made easy during the last two decades, especially during the implementation of DPEP and SSA. A large number of primary schools in the state were established during this period.

**Table 11.2.1: Attendance Rates in Educational Institutions across Age Groups in Andhra Pradesh and India**

| Sno | Age Groups | Andhra Pradesh | | | All India | | |
|-----|-----------|---------|---------|---------|---------|---------|---------|
| | | 1995-96 | 2007-08 | 2009-10 | 1995-96 | 2007-08 | 2009-10 |
| *1* | *2* | *3* | *4* | *5* | *6* | *7* | *8* |
| 1 | 5 to 9 | 76.0 | 93.7 | 95.3 | 64.7 | 85.1 | 86.7 |
| 2 | 10 to 14 | 60.2 | 85.8 | 93.7 | 69.8 | 85.3 | 90.8 |
| 3 | 5 to 14 | 68.2 | 89.7 | 94.5 | 67.2 | 85.2 | 88.8 |
| 4 | 15 to 19 | 28.5 | 45.5 | 59.3 | 37.2 | 48.3 | 58.8 |
| 5 | 20 to 24 | 5.7 | 10.1 | 17.8 | 9.1 | 12.0 | 18.1 |
| 6 | 25 to 29 | 0.2 | 0.8 | 2.2 | 0.5 | 1.2 | 2.7 |

**Note**: 1. Attendance rate refers attendance in educational institutions such as schools, colleges, institutes, centres, research institutes.

**Source**: Using NSS 52nd (1995-96) and 64th (2007-08) Rounds Literacy and Participation in Education Survey (Sch. 25) and 66th (2009-10) Employment and Unemployment Survey unit record data.

There has been a dramatic improvement in the enrollment and attendance of 5-14 years age children in elementary classes and the enrolment rates (GER). However, Andhra Pradesh is yet to achieve universalising elementary education. It is estimated that there are still 3.3 lakh children in the 5-9 age group and 4.9 lakhs in the 10-14 age group which together come to 8.2 lakhs children in the 5-14 age group who are out of school during 2009-10.

Achieving 100% attendance from the current rates of 95% attendance is difficult, as the children who are out of school belong to the hard core group. These children include, urban street children, children from most remote areas, SC/ST and poorest of poor families and female children. With appropriate strategies universal elementary education can be realized during the 12th Five Year Plan itself.

Beyond enrolment, retention of enrolled children in first class till completion of primary and elementary education is important for the progress of school education. High dropout rate is affecting efficiency of elementary education system in the state. The grade-wise drop-out rates in the elementary classes is significantly higher (more than 5%) and its cumulative effect (based on apparent cohort method) is substantially large - about one-third of a cohort entered in class/grade I dropout before they reach final grade (VIII) of elementary education. About one-fifth of the cohort drops out

before completion of primary cycle. This high dropout before reaching last grades of primary and middle school affects completion rates. However, despite substantial dropouts in the state about 95% of 13-14 age group children in the state still manage to complete primary school and 83% of 15-16 years olds manage to complete their middle schooling. Appropriate strategies are required for improving retention rate at elementary school level in the state.

Equity and inclusiveness in education is another cause of concern in the education system. Although progress in reducing inequalities in attendance is commendable, gender difference in school attendances rates of 5-14 age children continue to persist. To address gender inequality in educational attainment gender sensitive schemes/programmes have been initiated to improve enrolment and retention of girl children and ensure equity in elementary education across social groups through DPEP and SSA. Latest District Information on School Education's (DISE) State Report Card shows that the share of children belonging to ST, SC, OBC social groups and Muslim religious minorities in total enrolment in elementary classes in the state is almost proportionate to the respective group's share in the total population of the state across social groups. However, despite proportional representation of gender, social and other minority groups in enrolment at elementary school level, there is variation in retention/dropout rate and completion rates.

Difference in primary and middle completion rates across social groups are marked in the state with female children (in the 13-14 age groups) falling under primary and female children (in the 15-16 age group) falling under middle completion - rates that were lower than their male counterparts. Similarly rural children have lower completion rates than their urban counterparts. Across social groups, children belonging to ST and SC communities are not faring well compared to other social groups.

Finally, the quality of schooling is also a cause of concern. Quality of schooling is an important factor for increasing the demand for schooling, enrolment and retention rates. Although progress in terms of quantitative expansion of elementary school education is considerable over the last two decades, the quality of schooling is still a cause of concern., Initiatives such as Children's Language Improvement Programme (CLIP) and Children's Learning Acceleration Programme for Sustainability (CLAPS) have been introduced in the state for improvement in the quality of eductaion. Radio lessons for formal primary and upper primary children (*Vindam Nerchukundam*) and out of school children, parents and community (*Vindam Chaduvukundam*) are being given regularly. Despite these initiatives quality schooling in elementary classes is still poor. The ASER 2011 Report shows that about 40% of Class V students in the state could not even read level (Standard) 2 texts. In numerical abilities, about 60% of Class V students in the state could not perform even divisions.

Having adequate number of Teachers, Classrooms and Infrastructure, Teachers' Training, Teaching and Learning Materials, Teaching method and Classroom learning are important factors for improving the quality of schooling. While efforts are being made for improving these factors they are in sufficient in meeting expected learning achievement.

APs 12th Plan approach can aim at universalisation of access to quality elementary education which is also the key goal of SSA. In the 12th plan period, the state can fulfill this goal by setting the following targets and strategies.

*Targets*

The 12th plan targets for elementary education in the state could be as follows

 ➢ All 6 to 14 year old children are in schools by the end of 12th plan (2017) – no child to be left out of school (100% attendance rate)

 ➢ Reaching 100% attendance rate from the current 95% is difficult as the children out of school belong to the hard core group. These children include, urban street children, children from most remote areas, SC/ST children and children from poorest of poor families and female children

 ➢ Realignment of elementary system from the current I-VII to I-VIII means that all middle schools will have classes upto class/Grade VIII

 ➢ Repetition rate in elementary classes to be reduced to negligible level – below 1%

 ➢ Dropout rate in elementary classes to be reduced to negligible level – below 1%.

 ➢ Transition rate between primary and middle schooling to be around 98% by the end of the 12th plan (2017)

 ➢ Representation of each social group in the state in total enrolment at elementary level to be proportionate to their share of population by 2017

 ➢ Alignment of enrolment at elementary level in age appropriate classes

 ➢ For Quality Schooling  - At least 75% of children in each class must be thorough with 75% of the syllabus/content of that standard by 2017

*Strategies*

In terms of access, although number of schools available for elementary classes in the state within in the normative distance appears to be adequate

 ➢ To improve enrolment

- Special enrolment drives and campaigns to be taken up
- Community specific initiatives to increase 100% attendance rate from the current 95% reaching the hard core group of children consisting of urban street children, children from most remote areas, SC/ST children, poorest of poor families and female children AIE and EGS centers or formal schools can reach and accommodate children located in isolated places

➢ To improve retention rate
- Child tracking system for dropouts and never enrolled children to be developed
- Child specific initiatives
- Implementation of Mid-day-Meal (MDM) scheme

➢ For alignment of enrolment in age appropriate classes
- Bridge School system is useful in this regard
- Reducing repetition rates to negligible level by providing extra tuition for children unable to cope with the pace of general teaching/learning process
- Re-enrolment in age appropriate class through bridge schools for dropouts

➢ To improve quality of schooling
- Improve Teacher's Attendance Rates and accountability
- Improvising Teacher's Training
- Orientation classes for Teachers
- Improving School Infrastructure – each school must have minimum infrastructure
- Adequate Teaching and Learning Material supplied to schools
- Innovations in pedagogy and alternative teaching methods
- Child-centered learning approach
- ICT Initiatives

➢ For Equity
- Inclusive education Initiatives

➢ Institutional Reforms
- Strengthening of DIETS and SCERTs.
- Accountability and Transparency
- Educational Management and Leadership Initiatives
- Community involvement in management of schools
- Monitoring and Evaluation Mechanism

**11.3. Secondary**

In an emerging knowledge based economy a mere eight years of elementary education would be grossly inadequate for young children to acquire necessary skills that the industry demands and to compete in the job market. There is thus a need for universalisation of secondary education which is the key goal of Rashtriya Madhyamik Shiksha Abhiyan (RMSA) a scheme launched by Government of India in 2009. Andhra Pradesh 12th plan has to make efforts to achieve universalisation of secondary education in the state.

Andhra Pradesh has shown a rapid growth during the last two decades in the number of secondary schools,. Many of the middle schools in the state were upgraded to secondary level during the last two decades. The Secondary Education Management Information System (SEMIS) 2009-10 shows that there are 22,804 schools in the state available for (lower) secondary classes (i.e. VIII, IX and X). Andhra Pradesh after Rajasthan has the second largest number of available schools for secondary classes. In terms of population coverage only 10% of population in the state is beyond the coverage of secondary classes within a 5 Kms distance.

Andhra Pradesh has a unique system of higher/senior secondary education (Class/Grade XI and XII) system. Classes XI and XII of Higher secondary in the state are separated from the secondary school and brought under Intermediate Board. The number of colleges/institutions with higher secondary classes have increased during the last two decades. At present there are around 5000 junior colleges available for higher secondary classes (XI and XII) in Andhra Pradesh which include college of general education and vocational education at higher secondary level.

Enrolment in secondary classes in the state has also grown very rapidly. Recent Secondary Education Management Information System (SEMIS, 2009-10) data shows that enrolment in secondary classes ( Class IX and X) is around 20.8 lakhs in the state and the estimated population of secondary school age (14-15 years) is around 32.5 lakhs for the same year. The gross enrolment ratio (GER) at secondary classes (Class IX and X) is 64% in the state for the year 2009-10.

In terms of equity regarding representation of social groups in the total enrolment in secondary classes, enrolment of SC children is on par with proportion of SCs in the total population of state. STs enrolment representation in secondary classes is below their share in the population. With respect to gender, at the overall level equity has been achieved. But the share of girls in the group-specific enrolment (total ST and OBC children enrolled) in secondary classes across STs and OBCs is lower than their share in the population.

Two factors are important for universalisation of secondary education: elementary education completion rates and school attendance rate in secondary school-age children. Regarding age-specific attendance rate of secondary school age (14-15 and 16-17 years), 82% of the secondary school-age (14-15) children and 67% of the higher/senior secondary school-age (16-17 years) children are attending schools irrespective of the class they are attending. Although this attendance rate does not ensure their attendance in secondary classes, the attendance rate is important.

Secondly, elementary education completion rate among secondary school-age children and transition from elementary to (lower) secondary classes and then to higher secondary classes are important inicators of secondary education system. According to DISE data while there were 11.61 lakh children enrollments in class VIII during 2008-09 the number of enrolled children in Class IX in the subsequent year (200-10), according SEMIS data, was 10.6 lakhs only. It indicates a gap in transition from elementary to secondary level. Similarly there exists a gap in transition from lower secondary to higher secondary classes. Further retention in secondary and higher secondary level classes, is another problem.

Completion rate of secondary education is lower than that of elementary level because of internal efficiency issues such as wastage and stagnation owing to dropouts and repetition . However, in 2009-10, around 60% of 17-18 year old children in the state could have completed their secondary schooling. The rest will be dropouts before secondary level or the never enrolled.

Pass percentage in the metric (SSLC) examination is one of the constraints in sustaining transition from lower secondary to higher secondary education levels. Although over a period the pass percentage in SSLC examination has increased, still one-fifth of the children appearing for the examination in the state do not pass.

The RMSA goal of universalisation of secondary education is directly linked to universalisation of elementary education. Universalisation of secondary education for secondary school age children (14-15 age) may not be possible unless all children in this age group completed elementary schooling. Otherwise the possible outcome will be universalisation of secondary education for those who have completed elementary schooling.

Quality of schooling at the secondary level in terms of learning outcome is also a cause of concern. Some of the factors that affect the quality of schooling are the Number of Teachers and Classrooms, Infrastructure, Teachers' Training, Teaching and Learning Materials, Teaching methods and Classroom learning process. The recent SEMIS data shows that in terms of school infrastructure about half of the secondary schools in the state do not have a library and laboratory. In terms of sufficiency of classrooms and teachers, for the academic years 2008-09, more than one-thirds of

schools/institutions available for secondary classes in the state do not have even a single classroom/teacher available. The total number of classroom and teachers available for secondary school classes of those schools which have at least one teacher and a classroom in the state are around 55 thousands and 2 lakhs respectively. It means that in these schools with secondary school classes there are around 3 classrooms per school which underlines the inadequacy of classrooms. Similar is the case with the availability of teachers for secondary classes. There is thus a need for improving factors that affect the quality of secondary schooling. During the 12$^{th}$ Plan period these problems of inadequacy will be addressed.

*Targets*

RMSA goal at all India level is universalisation of secondary education by 2022. Meanwhile a mid-term target for the RMSA is achieving GER @ 75% by 2017 i.e. by the end of the 12$^{th}$ Plan.

➢ Andhra Pradesh can take both the long terms and mid-term goal of RMSA at the state level
- The state can create a mid-term goal target of achiving GER @80% by the end of 2017 which is more than the national goal.
➢ For Equity
- Ensure representation of all social and minority groups that is equivalent to the respective groups' share in population
➢ For Quality
- At least 80% children in secondary classes should be thorough with 80% of the secondary standard syllabus/content
- Pass percentage of class X children should be more than 95% by 2017

*Strategies*
➢ In order to further improve access to secondary schools for those located in remote areas and for those children whose secondary school is at long distances
- Establishment of Residential schools or facilitating enrolment of these children in nearby residential schools
- Facilitating Transportation and subsidisation of transport costs (through bus or train pass at cheaper cost or free of cost
➢ To improve enrolment and retention
- Scholarship for the socially and economically backward children enrolled in secondary school
- Tracking elementary school graduates who have not enrolled in secondary school classes and the dropouts in secondary school classes

- ➢ Introduction of Pre-Vocational courses at the Secondary level
  - As an add-on to secondary system so that children gain interest in vocational stream at higher secondary leve

- ➢ For Improving Quality
  - Innovations in pedagogy and alternative teaching methods
  - ICT in secondary schools

- ➢ Institutional Reforms
  - DIETs and SCERTs Strengthening
  - Accountability and Transparency
  - Educational Management and Leadership Initiatives
  - Community involvement/participation in school management

- ➢ Monitoring and Evaluation Mechanism

## 11.4. Vocational Education

Vocational education in India received its due attention as a policy concern soon after independence in the Radhakrishnan Commission (1948) recommendation,[7]. The Secondary Education Commission (1952) also emphasized the need for vocational education[8]. Subsequently the Kothari Commission (1964) and the National Policy on Education (1968) also reiterated its importance. The Kothari Commission in its report on restructuring of education system to 10+2+3 pattern, recommended establishment of distinct general and vocational education streams at the higher secondary stage. [9]. Subsequently, the Central Advisory Board of Education (CABE) entrusted the NCERT in 1975 to prepare curricula and help State Governments in implementing Vocational Education. The Vocational Education Programme at higher secondary stage was thus initiated in 1976[10]. As a result the vocational education at higher/senior secondary level came into existence. The National Policy on Education (1986) and subsequent Plan of Action (1992) has also accorded very high priority to the programme of

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[7] The Commission said that in order to direct students to vocations at the end of class X, a large number of intermediate colleges should be opened. "The aim of these colleges would be to meet a variety of needs of our young men and women by giving a vocational bias to their courses by retaining at the same time their value in a system of general education as preparation for university courses".

[8] "the secondary education is a complete unit by itself and not merely a preparatory stage, that at the end of this period, the student should be in a position, if he wishes, to enter into responsibility of life and take up some vocations". It also recommended diversification of the course at the secondary stage. This resulted in the creation of multipurpose schools.

[9] with an intention of intercepting the goalless climb-up of the youth on the educational ladder and diverting them to a productive path.

[10] when the NCERT document "Higher Secondary Education and its Vocationalisation" was presented to the country setting out a conceptual framework for implementation.

Vocationalization of Education[11]. However, the progress in its implementation has been very slow in India as well as in Andhra Pradesh because of inadequate resources, lack of proper management system, and inadequate teacher's training initiatives etc.

The number of institutions which provide Vocational Courses at higher secondary level are increasing in Andhra Pradesh. As on 2010, there are about 746 such institutions in the state providing more than 30 vocational courses. These institutions include junior colleges providing vocational courses and Industrial Training Institutes (ITI). The other forms of institutions that provide technical and vocational education are Polytechnics. Although they are part of technical education, they impart multiple vocational courses and life skills. There are about 200 polytechnic institutes in Andhra Pradesh.

However, the number of institutions providing vocational courses are inadequate given the rising demand for education and life skills and the demand for skilled labour in the industry especially at the lower and middle level skilled manpower. Moreover, the number of institutions offering vocational course do not have sufficient infrastructure and manpower required for fulfilment of the course obligations. Therefore there is a need for expansion and strengthening of institutions providing vocation courses in the state.

*Strategies*

➢ Expansion of Vocational Education - Increasing the number of institutions providing vocational education

➢ Introducing vocational education at secondary school level as an add-on pre-vocational course

➢ Offering integrated Vocational courses from pre-vocational course at secondary school level along with general education, to senior secondary and higher educational level students

➢ Strengthening Vocational Education institutions

➢ Developing a Framework for Vocational Teachers Education

➢ Revamping Vocational Education Curriculum to make it relevant to match current skills and industry demands

➢ Developing adequate infrastructure facilities such as laboratories

➢ Arrange Internships for students completing vocational course

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[11] It states that and that vocational courses will ordinarily be provided after the secondary stage, but keeping the scheme flexible, they may also be available after class VIII. It envisages, children at the Higher Secondary level are imparted generic vocational courses which cut across several occupational fields and which are not occupational specific.

**11.5 Higher, Professional and Technical Education**

In emerging knowledge based economies, development of human resources with educational qualifications beyond schooling is essential. The state showed remarkable progress regarding higher education including professional, technical and general education. There has been a rapid growth in the establishment of institutions since 1990s which is seen as a watershed regarding growth in the number of institutions established for higher, technical and professional education. By 2007-08 there were about 420 degree colleges, 28 universities, and 25 medical colleges in the state. Besides these there are a number of polytechnic, business management and other training institutes in the state.

There are more number of engineering colleges than degree colleges in Andhra Pradesh. The intake capacity and outgoing professionals from these higher educational institutes is the strength of the state. Around one fourth of the total pharmacy colleges and one third of engineering colleges in the India are estimated to be located in Andhra Pradesh which indicates that technical and professional education institutions are concentrated in Andhra Pradesh.

The articipation rates of youth in higher education, has improved remarkably in the state during the last one and half decade. The participation rates in educational institutions for the 15-19 age youth improved from 28.5% during 1990s (1995-96) to 59.3% in the recent past (2009-10). Similarly the participation rates for the 20-15 years age youth, improved from 5.7% in 1995-96 to 17.8% in 2009-10. The participation rates of youth in the educational activities/institutions in the state are similar to the all India average.

However, the quality of higher, professional and technical education provided in the state is a cause of concern. Many higher, technical and professional educational institution graduates of the state could not get placed in job markets. There is a mismatch between the type of skills demanded by the industry and the type of skilled labour that higher educational institutions produce. There is thus a need for addressing this mismatch by streamlining the courses, curriculum and content of these courses.

Improving participation, ensuring equity across social, economic and gender groups and improving the quality of education is one of the major concerns for higher education in the state.

*Strategies*
  ➢ Creating equal opportunities

- An obligatory principle to be followed is that no student who is eligible (given the previous academic record) and interested in higher education is deprived of the opportunity for higher education because of economic or non-economic reasons
- Scholarships for SC/ST/OBC and Minority community students

➢ Quality of education
- Ensuring qualified teachers especially in private institutions
- Ensuring required infrastructure
- Teacher Training programmes – for updating subject knowledge and teaching methods
- Assessment mechanism for teachers and institutions
- Accreditation and ranking of institutions based on quality of education

➢ Institutional Reforms
- Developing Regulatory Framework mechanism for private and corporate institutions providing higher, professional and technical education
- Mechanism for preventing malpractices
- Setting up Monitoring mechanism especially for private institution
- Grading of Institutions based on their performance and placement

## 11.6 Adult Literacy and Education

Adult literacy and education are the other important issues that require urgent policy attention. Although APs performance in schooling and higher education has improved making it one of the better performing states in India, it remains one of the most backward states in literacy.

Since 1961, the improvement in overall literacy rate in the state is the largest during the 1980s and 1990s (14% increase between 1981 and 1991) and (17 % increase between 1991 and 2001). During the last decade (i.e. between 2001 and 2011) improvement in literacy rate of the state is very low (6.6% points) compared to its performance in previous decades.

**Table 11.6.1: Literacy Rate (%) in Andhra Pradesh and India**

| Year | Andhra Pradesh | | | All-India | | |
|---|---|---|---|---|---|---|
| | Person | Male | Female | Person | Male | Female |
| *1* | *2* | *3* | *4* | *5* | *6* | *7* |
| 1961 | 21 | 30 | 12 | 28 | 40 | 15 |
| 1971 | 25 | 33 | 16 | 34 | 46 | 22 |
| 1981 | 30 | 39 | 20 | 44 | 56 | 30 |
| 1991 | 44 | 55 | 33 | 52 | 64 | 39 |
| 2001 | 61 | 71 | 51 | 65 | 76 | 54 |
| 2011$ | 67.66 | 75.56 | 59.74 | 74.04 | 82.14 | 65.46 |

**Note**: 1. $ - Provisional Figures; 2. Literacy is for 5 + age population till 1981, thereafter it is for 7 + age population.

**Source**: 1. Census of India.

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A simulation exercise to explore prospects of literacy levels indicates that even if the state policy concentrates on improving adult literacy through designing of appropriates programmes for illiterates both in the 15-35 years and 35 - 60 years age groups and implementing them rigorously, it will not be possible to achieve 100% literacy rate in the state even by 2050.

**Figure 11.6.1: Projected Literacy Rate (7+ age Population) in Andhra Pradesh**
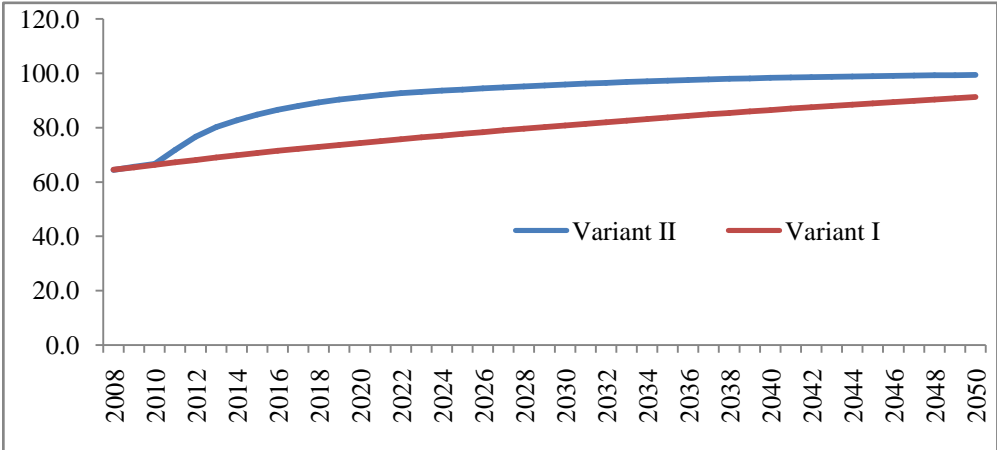


**Note:** Variant I is normal course - literacy through formal schooling during the childhood; Variant II is through policy intervention – Adult literacy programmes.

**Source**: Ravi and Venkatanarayana (2011).

Unless there is considerable improvement in the State's literacy levels it will continue to be one of the states with poor human development index (HDI) and low HDI ranking because education is one of the three components given one-third weightage for computing HDI. And adult literacy is one of the two sub-components and accounts for two-thirds weightage in the education component.

There is thus a strong need for rejuvenating State Literacy Mission (SLM) and designing state specific adult literacy programmes to achieve 100% literacy rate in near future. The Total Literacy Campaign (TLC) under National Literacy Mission (NLM) of India targets illiterate population only in the 15-35 age group. But there is a need to target illiterates in the 35 to 60 age group and even older population under the adult literacy programmes to achieve 100% literacy rate in the state in the near future.

It is essential to extend focus from different forms of literacy such as Nominal/Formal Literacy (Able to sign, read and write) and Functional Literacy (Understanding) to also include Financial and Computer Literacy. In an emerging knowledge based economy minimum literacy skills in these aspects are essential.

*Targets*
➢ Achieving 80% Literacy rate by the end of 12th Plan (i.e. 2017) from the current 66% (2011)

- Removing gender gaps in literacy
- Removing rural-urban difference in literacy
- Achieving equity across social groups in literacy
- Attaining not just formal literacy skills (reading, writing and simple numeracy), but also attain functional literacy (also the understanding)
- Starting initiatives for improving financial and computer literacy

*Strategies*

- Adult Literacy Programmes targeting 15 years and above age population
  - Not only 15-35 age group but above 35 years age population must be targeted in adult literacy programme
  - Focus on illiterate women especially those belonging to socially backward classes

- Taking advantage of NREGS by
  - Involving adult literacy counselors for implementing NREGS
  - Making attendance in literacy class at work place itself obligatory for illiterate workers participating in NREGS work
  - An hour each day can be used for adult literacy programme at the work place

- Taking advantage of Self-Help Groups (SHGs)
  - Groups can encourage illiterate members to attend literacy programmes
  - Making it obligatory for illiterate members in SHG groups to become literates

- Sustaining literacy skills of neo-literates
  - Post Literacy Programmes

- Improving vocational skills of neo-literates
  - Continuation of Education Programmes
  - Jana Shikshana Sanghatan

## 11.7 Skill Development

The minimum literacy levels in Andhra Pradesh are very low making it one of the most backward states with regard to literacy rates in India. According to 2011 census, about one-third of the 7+age population is illiterate. Educational levels are an important parameter in improving the quality of population as well as labour force. In younger age cohorts around one-fifth of them did not have any formal schooling. Although the proportion of population without formal schooling has declined over time in the state it is higher compared to all-India averages across age cohorts. About half of the adult

workforce (15+ age) in the state is illiterate and without any kind of formal schooling. The literacy and formal schooling level is lower in Andhra Pradesh compared to the all-India average.

Illiteracy and absence of formal education is affecting the quality of labour force in the state. About half of the population in Andhra Pradesh are engaged in one activity or the other. Quantity of labour force as also the quality which impacts the productivity of the labour force and which influences the development process are key issues of concern. Improvement in the quality of labour has direct implications for the economic status and well-being at household level at a micro-level and for the growth of economy at the macro level. Improved quality of labour force increases their productivity and their earnings. In an emerging techno-knowledge based economy such occupations and skills of labour play an important role in improving livelihoods at micro level and enhancing growth of economy at the macro level.

Illiteracy and absence of formal education forces most of the workforce in the state to engage in elementary occupations such as agriculture and allied activity which require no specialised skills. Even those engaged in non-agriculture activities, most of them are engaged in occupations which require only elementary skills. Therefore improving quality of labour force is a policy concern. The 12$^{th}$ Five Year Plan aims to improve skills potential of the labour-force through skill development programmes.

*Target*
 ➢ Improving the percentage of workforce receiving formal skills through vocation education
 ➢ Improving percentage of skill development and training programmes trainees placed in suitable jobs
 ➢ Minimising dropout rate in skill development and training programmes

*Strategies*
 ➢ State Skill Development Missions to be made fully operational and effective in functioning
 ➢ Establishment of Skill Development Centres
 ➢ Demand driven skill development and training programmes
   • Mapping the current and future skills demanded by industry
   • Developing skill eco-system
   • Developing a Curriculum Framework for such skills in demand
   • Developing suitable Pedagogy for imparting in demand skills to job aspirants

 ➢ Co-ordination between skill development Mission centres and vocational education institutions
 ➢ Internship programmes

- Re-skilling Programmes

- Jana Shikshna Sanghatans

- For improving women's participation

  - Gender-sensitive skill development and training programmes
  - Gender-sensitive Skills Curriculum Framework

- Assessing skill development needs and training centres/institutions needed based on placement capacities

- Exploring Public-private partnership (PPP) options

## 11.8 Financing Education

A better education system depends on sound financial allocations. Given the importance of education as a key element for improving human capital, for ushering economic and human development, and given its externalities and its nature as "public good" education needs sound public investment. Taking note of the importance of education, the Kothari Commission (1964) had recommended that a minimum of 6% of GDP/GSDPs must be spent on education related matters. Nevertheless the 6% norm has not been realised so far either at all India level or in any state except in a few states like Himachal Pradesh and Kerala (that too only for a year or two).

In Andhra Pradesh the expenditure on education has never been more than 3% since its formation and in recent years it has reduced to around 2%. Looking at the expenditure on education as a percentage of GSDP and total expenditure, Andhra Pradesh seems to be spending less on education compared to other major states. , The expenditure on education as percentage of total plan expenditure in the state increased during the 9th plan period but declined again during 10th plan and appears to have recovered in the 11th plan period.

Inter-sectoral distribution of public expenditure trend in education sector shows that the share of each sector has remained almost constant, with a major deviation seen only in the early 1990s where the 'other' category - consisting of adult education and language development received significantly higher share than usual. More than changing inter-sectoral distribution of educational expenditure in favour of one or the other sub-sectors within education, it is increasing the total expenditure on education so as to meet the 6% norm (i.e. 6% of GSDP on education) that is critical.

## 11.9 Concluding Remarks

Education is a critical aspect of socio-economic progress at individual as well as national level. Education needs to get its due attention in planning process as it is a critical input for improving human capital, addressing human development, and an important element of the rights perspective.

# 12. Welfare of Socially Disadvantaged Groups

## 12.1.0. Introduction

Social groups such as SCs, STs, OBCs and Minorities have historically been at a disadvantage and vulnerable to exploitation and have been subjected to social exclusion and discrimination. These sections are considered to have been marginalized from the development process. Though there has been considerable progress in the development of these communities they are yet to attain equal footing with the mainstream society on several development indicators. Because of continuing development/deprivation divides across social groups, the Twelfth plan proposed that there should be more faster, inclusive and sustainable growth that should reach all socially disadvantage sections.

The Constitution of India guarantees protection from social injustice and has several provisions for safeguarding SCs as mentioned in Articles such as 46, 14, 15 (1), 17, 15 (2), 15 (4) (5), 16 (4), 16(4A), 16(4B), 335, 243D and 340T. Articles 15(4), 16(4), 46, 243M, 243ZC, 244, 275(1), 334, 335, 338A, 339(1), and the Fifth and the Sixth Schedules in the Constitution of India makes provisions for safeguarding the interests of STs in India. In addition the Untouchability Act, 1955, renamed as Protection of Civil Rights Act, in 1976 and the Scheduled Caste and Scheduled Tribe (Prevention of Atrocities) Act, 1989 were enacted by the Parliament to check and deter atrocities against SCs. Although, the Constitution does not make specific provisions for protection of OBCs, the State has authority via Article 340 to appoint a commission to investigate into the conditions of socially and educationally backward classes (Article 340). Articles 15, 16, 25, 26, 29, 30, 347, 350, 350(A) and 350(B) are the primary constitutional provisions which safeguard rights of Minorities.

## 12.2.0. SCHEDULED CASTES (SCs)

### 12.2.1. Population Profile
The SC population has been increasing with the proportion of SCs still being predominant in rural areas. Andhra Pradesh has a sizeable Scheduled Caste population which in 1991 was 10.6 million which constituted 15.9 % of the total population of the state. In 2001, the SC population was 2.3 million which constituted 16.2 % of the total population of the state. According to the 2001 census, the percentage of SCs in the total population was highest in the district of Nellore (22.5 %) followed by Prakasam (21 %) and Chittoor (18.7 %).

### 12.2.2. Literacy and Education Status
According to the Census data, there has been considerable progress in the overall literacy rate in the state which increased from 29.9 % in 1981 to 60.5 % in 2001. There was a similar progress in the literacy rate of SC population. The literacy rate of SCs increased from 17.7 % in 1981 to 53.6 % in

2001. Still, there is huge gap in rate of literacy between the general population and SCs. Female literacy of SCs increased at a slower rate. There is a huge gap between SC female literacy (43.4 in 2001) and overall female literacy rate (50.4 % in 2001).

**Table: 12.1: I-XII class (All) and SC dropouts**

| Year | All dropouts | | | S.C dropouts | | |
|------|------|------|------|------|------|------|
| | Boys | Girls | Total | Boys | Girls | Total |
| 2001-02 | 71.62 | 73.28 | 72.37 | 76.44 | 79.87 | 77.96 |
| 2005-06 | 62.24 | 65.2 | 63.67 | 68.41 | 72.2 | 70.24 |
| 2006-07 | 62.99 | 65.33 | 64.13 | 68.27 | 71.43 | 69.82 |
| 2007-08 | 62.3 | 64 | 63.13 | 68.12 | 70.09 | 69.09 |

Source: http://ssa.ap.nic.in/ (Sarva Shiksha Abhiayan Andhra Pradesh)

Though the percentage of dropouts of SCs boys and girls has been decreasing, it was still at 69 % in 2007-2008. The dropout rates of SC boys and girls are higher than the state average with the dropout rate of SC girls being higher than boys.

### 12.2.3. Occupation

Most of the SC population is rural based and the predominant number of SCs continuing to be agricultural laborers (see table 12.2). The percentage of self-employment of SCs in non-agriculture in rural area increased over the period, while the proportion of SC in agricultural labour and self-employment in agriculture steadily decreased. Though the proportion of SCs in agricultural labour and self-employment in agriculture has been decreasing, agriculture continues to be a key and dominant source of livelihood of SCs (63 %).

**Table: 12.2: Distribution (%) of Population by Occupation (Principal Source of livelihood) of Household across Social Groups**

| Occupation | | Household type in Andhra Pradesh | | | | | |
|------|------|------|------|------|------|------|------|
| | | 1993-94 | | 2004-05 | | 2009-10 | |
| | | SC | All | SC | All | SC | All |
| Rural | Self-employed in Non-Agriculture | 5.9 | 14.8 | 8.7 | 17.4 | 11.1 | 16.5 |
| | Agricultural Labour | 69.1 | 39.4 | 60.7 | 35.7 | 54.8 | 36.8 |
| | Other Labour | 9.2 | 8.4 | 11.5 | 9.6 | 17.2 | 13.4 |
| | Self-employed in Agriculture | 11.8 | 31.4 | 11.6 | 28.4 | 8.2 | 23.5 |
| | Others | 4 | 6 | 7.5 | 8.9 | 8.8 | 9.9 |
| Urban | Self-employed in Agriculture | 20 | 35.8 | 24.5 | 42.8 | 23.6 | 34.9 |
| | Regular Wage | 48.6 | 41.9 | 40.1 | 36.2 | 43.7 | 41.2 |
| | Casual Labour | 26.8 | 17.9 | 28.9 | 15 | 26.6 | 15.2 |
| | Others | 4.7 | 5.1 | 6.5 | 6 | 6.2 | 8.7 |

**Source:** M. Venkatanarayana (2011) "Socio-Economic Conditions of Scheduled Castes (SCs) and Tribes (STs) in Andhra Pradesh", Manuscript, Centre for Economic and Social Studies, Hyderabad.

### 12.2.4. Poverty Level

According to the Lakadawala Committee based estimates, the rural and urban poverty ratio of SCs decreased from 36.7 % in 1983 to 15.5 % in 2004-05 (rural) and from 50.6 per in 1983 to 37.4 % in

2004-05 (urban) respectively. According to the new official estimates of Tendulkar Committee poverty among SCs in 2009-10 was 23.5 % in rural areas, and 17.4 % in urban areas. While Lakadawala Committee estimates reveals that urban poverty of SCs is higher than rural poverty ratio Tendulkar Committee estimates reveals that SC rural poverty is higher than urban poverty ratio.

## 12.2.5. Plan Priority for SCs

*12.2.5.1. SC Sub-Plan:* In view of the persistent and widespread socio-economic backwardness of SCs, a distinct need was felt for innovative policy intervention to enable these groups share growth benefits in an equitable manner. A separate Development Plan called Special Component Plan for the SCs in 1978 (recently renamed the Scheduled Caste Sub Plan [SCSP]) was prepared by the government. The SCSP aims facilitating convergence and pooling of resources to all development sectors in proportion to SCs population, respectively for their overall development. The Andhra Pradesh Scheduled Castes Co-operative Finance Corporations Ltd was set up to promote economic assistance for SCs in the state with the guidelines of SCP. It took up economic assistance for Scheduled Castes in different fields to earn better living and help them improve their standard of living. An outlay Rs. 3614.60 crore was made which benefited 46,08,197 Scheduled Caste families during 2009-10 and Rs. 4125.68 crore spent on 49,63,135 Scheduled Caste families during 2010-11 through the Corporation.

*12.2.5.2. Promoting Education:* Several schemes for the educational development of SCs such as: i). Social welfare scholarships programmes, ii). Hostel facilities to both boys and girls for pursuing education, and iii). Providing coaching facilities to students to prepare them for various competitive exams have been implemented by the Government of Andhra Pradesh. Along with these State Schemes, central schemes for educational development of SCs are implemented through Central Ministry of Social Justice and Empowerment such as The Rajiv Gandhi National Fellowship for SC students pursuing higher studies (leading to M.Phil. and Ph.D. degrees).

*12.2.4.3. Housing and Land:* The State Government provides house sites free of cost to weaker section families under INDIRAMMA programme. An amount of Rs. 60,000 crore was provided for this programme, in the budget during 2010-2011. In response to this, 4, 13,764 house sites were provided under phase-I, and 4,79,562 house sites distributed in phase-II and 2,42,077 house sites distributed in the  phase-III so far. Land to the landless poor has also been distributed by the state Government in several phases. 36182 landless poor in phase-I and 33966 in phase II have benefited from this. About 22998.5 acres have been distributed under phase III in 2006 to 10767 landless poor. In phase-IV 14930.38 acres were distributed to 10926 landless poor in 2008 and 16191.99 acres distributed to 12741 landless poor under phase-V in 2010.

## 12.2.6. Approach in the Twelfth Five Year Plan

i). *Promoting Education:* With respect to elementary education, existing Pre-Matric scholarship for the marginalized need to be revised so that more target families send their children to schools. There is also a need for extending financial assistance for post metric scholarships so that students can access top class educational institutions, including private institutions. As existing schemes of SCs coaching does not cover fees charged by such reputed coaching institutes, there is a need to modify the scheme to ensure such coverage. Over the last few years, higher technical and professional education is increasingly being provided by private unaided institutions. In the absence of explicit government aid, private un-aided colleges charge high fees which SC students cannot afford. Government can reimburse the total fee charged by such institutions.

ii). As land is the main source of livelihood in rural areas where 82 % of the SC population live, a Commission on Land Reforms should be set up to specifically look into issues of land distribution. Large number of SCs are still dependent on agriculture especially as wage labourers and suffer from high incidence of poverty. In this regard, better agricultural wages to sustain them need to be provided through existing NREGA in 12th plan period.

iii). Efforts have to be made to monitor implementation of the programmes under the SCSP, for ensuring effective and meaningful implementation of SCSP. The budget allocation to SCSP is to be according to population ratio of the community. The allocated budget must be spent on marginalized sections of SC and ST and not diverted to other developmental activities. Further, if any particular Ministry is unable to utilize earmarked allocation, action should be initiated to transfer unused funds to those Ministries/Departments which have implemented the SCSP/TSP effectively.

iv). Reservation for SCs: The government is committed to provide reservations for SCs in education and employment. Action needs to be taken to clear the backlog in filling up SC reserved posts of various categories in the government. As government alone cannot accomplish the task of providing job opportunities to SCs, private corporate sector will have to play a proactive role in providing sufficient job opportunities to especially marginalized and discriminated sections in the state.

## 12.3.0. SCHEDULED TRIBES (STs)

### 12.3.1. Population Profile

The Scheduled Tribe population increased to 50.24 lakhs constituting about 6.59% of the total population of the state according to the 2001 census. ST population growth rate of 3.9 % per annum, is highest population rate of growth followed. There is a wider variation in distribution of ST population across districts, it being more concentrated in the hilly and forest areas. According to the 2001 census, the percentage of ST population is highest in Khamma (26.50%) and lowest in Kadapa

(2.40%).

**12.3.2. Literacy and Educational Status**

According to the Census data, there has been considerable increase in the literacy rate of ST. The literacy of STs increased from 7.8 % in 1981 to 37.1 % in 2001. However, female literacy rate increased from 20.4 % in 1981 to 26.1 % in 2001. There is still a huge gap in literacy rate between general population and STs. There is need to reduce the gap in literacy rate of general population and STs which increased from 22.1 % in 1981 to 23.4 % in 2001. Female literacy of STs increased at a slower rate. The gap between general population literacy and STs Female literacy also increased from 16.9 % in 1981 to 24.3 % in 2001. There is need to reduce this gap between general population literacy and ST population literacy.

**Table: 12.3: I-XII class (All) and ST dropouts in Andhra Pradesh**

| Year | General dropout | | | S.T dropouts | | |
|---|---|---|---|---|---|---|
| | Boys | Girls | Total | Boys | Girls | Total |
| 2001-02 | 71.62 | 73.28 | 72.37 | 83.45 | 88.98 | 85.71 |
| 2005-06 | 62.24 | 65.2 | 63.67 | 80.05 | 83.88 | 81.76 |
| 2006-07 | 62.99 | 65.33 | 64.13 | 80.19 | 84.08 | 81.96 |
| 2007-08 | 62.3 | 64.0 | 63.13 | 81.08 | 83.61 | 82.26 |

Source: http://ssa.ap.nic.in/ (Sarva Shiksha Abhiayan Andhra Prades)

Though the percentage of dropouts ST boys and girls decreased gradually, it was still at 82.26 % in 2007-2008. The dropout rate of SCs girls is higher than boys. The drop-out rates of ST boys and girls is higher than state dropout percentage.

**12.3.3. Occupation**

The percentage of STs self-employed in non-agriculture sector in rural areas declined from 9.7 % in 1993-94 to 1.9 % in 2009-10 which is higher than the state level. Since 2004-05 self-employed in agriculture which is the principal source of livelihood of STs, declined from 45 % in 1993-94 to 41.6 % in 2009-10. However, Self-employed in agriculture is higher than the state percentage. In urban areas casual Labour declined from 26 % in 1993-94 to 24 % in 2009-10. Most of STs are self-employed in agriculture or working as regular wage or salaried personnel in urban areas.

**Table: 12.4: Distribution (%) of Population by Occupation (Principal Source of Livelihood) of Household across Social Groups**

| Occupation wise | | Household type in Andhra Pradesh | | | | | |
|---|---|---|---|---|---|---|---|
| | | 1993-94 | | 2004-05 | | 2009-10 | |
| | | ST | All | ST | All | ST | All |
| Rural | Self-employed in Non-Agriculture | 9.7 | 14.8 | 7.5 | 17.4 | 1.9 | 16.5 |
| | Agricultural Labour | 37 | 39.4 | 43.7 | 35.7 | 44.5 | 36.8 |
| | Other Labour | 5 | 8.4 | 4 | 9.6 | 7.8 | 13.4 |
| | Self-employed in Agriculture | 45 | 31.4 | 35.4 | 28.4 | 41.6 | 23.5 |
| | Others | 3.3 | 6 | 9.3 | 8.9 | 4.2 | 9.9 |
| Urban | Self-employed in Agriculture | 26.1 | 35.8 | 22.9 | 42.8 | 27.8 | 34.9 |
| | Regular Wage | 41.9 | 41.9 | 21.5 | 36.2 | 38.2 | 41.2 |
| | Casual Labour | 25.8 | 17.9 | 10.9 | 15 | 23.8 | 15.2 |
| | Others | 6.1 | 5.1 | 4.7 | 6 | 10.2 | 8.7 |

**Source**: M. Venkatanarayana (2011) "Socio-Economic Conditions of Scheduled Castes (SCs) and Tribes (STs) in Andhra Pradesh", Manuscript, Centre for Economic and Social Studies, Hyderabad.

### 12.3.4. Poverty Level:

According to the Lakadawala Committee estimates, while the rural and urban poverty ratio of STs decreased from 35.7 % in 1983 to 28.3 % in 2004-05 (rural) the poverty ratio increased in urban area from 43 % in 1983 to 51.9 % in the same period. This is higher than the general poverty ratio. On the basis of the new official estimates of Tendulkar Committee, poverty in STs in 2009-10 was 39.3 % in rural areas, and 14.9 % in urban areas. But, Lakadawala Committee estimates reveal that urban poverty of STs is higher than rural poverty ratio while Tendulkar Committee estimates reveals that rural poverty is higher than urban poverty.

### 12.3.5. Plan priority for STs

*12.3.5.1. ST Sub-Plan:* STs Development strategies and programmes since independent planning era indicates that, though many initiatives have been carried out for the development of the STs the Tribal Sub-Plan (TSP) strategy was initiated in the 5th Five year Plan for the rapid socio-economic development of tribal people. The strategy for TSP was prepared for tribal concentration areas which were designated as Integrated Tribal Development Projects. TSP is part of an overall plan of the State and aims to provide socio-economic development and Protection of STs against exploitation through legal and administrative support for narrowing the gap between their levels of development and general communities. Andhra Pradesh Scheduled Tribes Cooperative Finance Corporation Limited., (TRICOR) was established in October, 1976. The objective the corporation is all round development of scheduled tribes in the state through special attention on Tribal Sub plan areas and economic development of STs by providing financial assistance to ST families below poverty line for taking up economic support activities. An amount of Rs. 3331.96 crore during 2008-09, Rs. 2370.86 crore for the year 2009-10, and Rs. 2529.20 crore during the year 2010-11, was allocated towards Tribal Sub Plan in Andhra Pradesh.

*12.3.5.2. Promoting Education***:** As STs are deprived educationally since ages, the state government has provided special incentives including social welfare scholarships, hostel facilities, text books, uniform, abolition tuition fee and so on for improving their educational status. The main objectives of these schemes are to enhance enrolment and retention of tribal children and improve the quality of their education. The Government sanctioned Rs. 633.64 crore in 2008-09 and Rs. 610.42 crore in 2009-10 for tribal education in Andhra Pradesh. An amount of Rs. 45.34 crore, for recovering 81517

tribal students in 2010-11 and an amount of Rs. 106.79 crore, for recovering 146148 tribal students was sanctioned by Post-Metric Scholarship during 2009-10. .

12.3.5.3. *Housing and Land*: The state Government has provided house sites to STs in various phases under Indiramma Programme free of cost. 2.52 lakhs house sites were sanctioned under phase-I in 2006-07, 2.62 lakhs house sites were sanctioned under phase –II in 2007-08 and 1.75 lakhs house sites were distributed in phase-III in 2008-09 under this programme. The state also distributed land to landless poor in various phases. 25360 landless poor benefited under phase-I, 22399 benefited under phase-II, 20838.64 acres were distributed under phase III in 2006 to 8979 landless poor, 15744.31 acres were distributed to 9147 landless in 2008 in phase-IV and 19529.23 acres were distributed to 10698 landless poor under phase-V in 2010.

## 12.3.6. Approach in the Twelfth Five Year Plan

i). *Promoting Education***:** While teachers appointed in schools located in tribal habitations are unable to understand the dialect of the ST children, the children are also unable to understand the dialect of teachers. Care therefore has to be taken for appointing ST teachers in schools located in tribal areas. Adequate attention also should be paid to regional language so that children are not handicapped in higher classes. Timely distribution of fellowships, scholarships, textbooks, uniforms and school bags to students is reqired. The ICDS/Anganwadi schemes for tribal areas should be evaluated and shortcomings eliminated. Requisite number of primary schools need to be established in areas that have less number of schools. All schools should have proper school buildings, hostels, water, toilet facilities (particularly for the girls' schools). Residential high schools for ST boys and girls will have to be set up at suitable places. At the Gram Panchayat level, wherever feasible girls' hostels will have to be attached to existing primary/elementary schools that do not have hostels

ii). Intensive efforts should be mounted to restitute, vitalize and expand agricultural sector for making existing tribal livelihoods more productive. Training centers will be opened to improve skills of tribals for diverse occupations. Efforts should be made to promote horticulture, animal husbandry, dairy farming, sericulture and cottage and small industry by extending necessary technology and credit, marketing and entrepreneurial information, and training. TRIFED has to shoulder the task of marketing to ensure remunerative prices to STs.

iii). There is a need to encourage traditional arts and culture and protect Tribal Rights in Land and Forests of STs. There is a need for increasing financial Institutions in these areas as the communities are unable to access institutional credit. ST corporations which are intended to provide financial support for these communities does not materialize as funds get diverted to other activities not related to these communities, corruption, lack of planning, non-existence of Development Planning, non-

organization of Entrepreneur Training Programmes, unwillingness etc. Hence, they are largely unable to become entrepreneurs, Industrialists or start productive Businesses.

iv). ST welfare and National Commissions instituted for the purpose of bringing about improvement in STs were ineffective as they had only recommendatory power and their findings were not mandatory. Available safeguards like sub-plans must be leveraged for economic and social empowerment of the underprivileged as this will not only help to alleviate poverty but also generate asset creation of these sections in future. It is found out that budgetary allocations are not in true with the directives of the planning commission. As STs seeking a fair share of the wealth of nation is gaining ground, there is a need for allocating and spending funds in proportion to the population of Scheduled Tribes.

## 12.4.0. OTHER BACKWARD CLASSES (OBCs)

### 12.4.1. Population Profile

About 135 communities pursuing traditional activities such as cattle and sheep rearing, toddy tapping, earth workers, fishing, weaving, goldsmith, blacksmith, brass smith, carpentry, stone carving, laundry, pottery, oil pressing, hair dressing, tailoring and dyeing etc fall under Other Backward class population. The Rajindar Sachar committee (2006), report on Social, Economic and Educational status of Muslim community of India, estimated that OBCs constituted 49.4 % population living in rural areas in 1999-2000. OBCs population was 50.2 % of state total population in AP in 2004-05.

### 12.4.2. Occupation

The percentage of self-employed in non-agriculture and agriculture of OBCs in rural area decreased while agricultural labour steadily increased. 60 % of OBCs depended on agriculture sector for their livelihoods. In urban area, the percentage of self-employment in agriculture and casual labour decreased from 2004-05 to 2009-2010. In response to this, the proportion of regular wages and salaried increased from 2004-05 to 2009-10.

**Table: 12.5: Distribution (%) of Population by Occupation (Principal Source of Livelihood) of Household across Social Groups**

|  | Occupation | 2004-05 | | 2009-10 | |
|---|---|---|---|---|---|
|  |  | OBC | All | OBC | All |
| Rural | Self-employed in Non-Agriculture | 21.1 | 17.4 | 18.7 | 16.5 |
|  | Agricultural Labour | 32.5 | 35.7 | 36.8 | 36.8 |
|  | Other Labour | 10.2 | 9.6 | 13.4 | 13.4 |
|  | Self-employed in Agriculture | 27.6 | 28.4 | 23.8 | 23.5 |
|  | Others | 8.6 | 8.9 | 7.3 | 9.9 |
| Urban | Self-employed in Agriculture | 44 | 42.8 | 35.3 | 34.9 |
|  | Regular Wage or Salaried | 31.4 | 36.2 | 40 | 41.2 |
|  | Casual Labourers | 19.1 | 15 | 16.9 | 15.2 |
|  | Others | 5.5 | 6 | 7.8 | 8.7 |

**Source:** M. Venkatanarayana (2011) "Socio-Economic Conditions of Scheduled Castes (SCs) and Tribes (STs) in Andhra Pradesh", Manuscript, Centre for Economic and Social Studies, Hyderabad.

### 12.4.3. Poverty Level

According to the Lakadawala Committee estimates urban poverty ratio of OBCs is higher than rural poverty ratio. The Tendulkar Committee estimates reveal that rural poverty is higher than urban poverty ratio. While the Lakadawala Committee reveals that poverty ratio of OBCs was 8.60 % in rural and 28.7 % (urban) in 2004-05 respectively Tendulkar Committee estimates reveals that rural poverty was 22.2 % and urban poverty ratio was 15.7 % in 2009-10.

### 12.4.4. Plan Priority for OBCs

13.4.4.1. *The Andhra Pradesh Backward Classes Cooperative Finance Corporation*: APBCCFC implements the Margin Money programme aimed at providing financial assistance to Agriculture and Allied sectors, Small business and industry, Service and Transport sectors. The Corporation was sanctioned  Rs. 461.00 lakhs covering 10112 BC beneficiaries during the 2006-07, and Rs. 500.00 lakhs covering 2500 BC beneficiaries during 2010-11 as margin money for the development of Backward Classes

*12.3.4.2. Promoting Education:* BC study circles provide coaching facilities to BC students appearing for Civil Services, Indian Engineering Services, Bank Probationary Officers, APPSC Group I & II, DSC, Junior Lecturers, Sub-Inspectors of Police and etc. Post-Metric Scholarship were sanctioned to all 712367eligible BC students ( an amount of Rs. 13200.00 lakhs) in 2007-08. Tuition fee and special fee to Private colleges and Special fee to Government colleges was reimbursed to eligible B.C students (an amount of Rs. 3600.00 lakhs) was provided in the State.

*12.3.4 3 Housing and Land:* The  *Indiramma* housing programme was launched in 2006-07 to provide house sites to OBCs living in kutcha houses by the Government of Andhra Pradesh.  The state distributed land to landless poor in various phases. 36068 landless poor benefited under phase-I and 31976 beneficiaries under phase-II, 1776.85 acres were distributed under phase III in 2006 to 1907 landless poor, 4886.61 acres were distributed to 18234 landless in 2008 in phase-IV and 29286.06 acres distributed to 21232 landless poor under phase-V in 2010.

### 12.4.5. Approach in the Twelfth Plan

i). Promoting Education**:** Reservation for OBC students in all Central and centrally aided schools/ colleges/professional institutes needs to be ensured. Both Pre-Matric and Post-Matric Scholarship schemes should be revised by enhancing income ceiling for eligibility and rate of scholarship and maintenance allowance. However, where hostel facilities are not available for them, they should be provided facilities in general hostels by earmarking a certain percentage of seats for them.

ii). In economic and occupational terms, backward classes comprise peasants, landless labourers, artisanal communities such as handloom weavers, carpenters, metal workers, stone cutters and fishermen, and those who provide various traditional services. The plight of these categories of backward classes worsened in recent years due to extensive mechanization and market competition. There is a need to ensure up-gradation of skills of such category of services so that they can compete in the market. Credit flow must be unhampered and easy to access, especially in occupations which have been the traditional forte of OBCs, like weaving, pottery, quarrying, cultivation of fruits and vegetable, and so on.

iii). A suitable marketing strategy needs to be worked out on the lines of TRIFED to market products manufactured by small artisans. The strength and capability of NBCFDC should be augmented. State has to provide adequate funds for the development of the OBCs through Twelfth plan as most of these sections are still socially and economically deprived.

## 12.5.0. MINORITIES

### 13.5.1. Population Profile

The proportion of minority population has been declining in the state and come down from 11.59 % in 1961 to 10.99 % by 2001,  Muslims constitute almost 89.1 % among all minorities in the state. Their proportion to the total population has increased from 7.55 % in 1961, to 8.47 % in 1981 and 9.17 % in 2001. Other minorities such as Sikhs constitute 0.04 %, Buddhists 0.04 %, Jains 0.05 and others 0.01 of the total state's total population in 2001.

### 12.5.2. Literacy and Educational Status

Among all religions, literacy rate was highest in Jains (82 .61 %) followed by Sikhs (68.9 %) and Chistians (66.03 %). While there do exists is a little difference in literacy rate among different religions, Buddhists female literacy rate was lowest (36.65 % ) followed by Sikhs (40.67 %). Christians on the other hand had the highest female literacy rate (47.39 %). Similarly, Buddhists had the highest male literacy (63.35 %) followed by Sikhs (59.35 %). The female literacy rate of Muslims was particularly low (42.62) according to 2001 census.

### 12.5.3. Occupation

The table 6 shows that the percentage of total workers (45.79 % to total population) was less than total non-workers (54.21 %) in 2001. Jains accounted for the lowest percentage of total workers (30.44 %) followed by Muslims (33.79 %) and Sikhs (37.24 %). However, the percentage of other workers was high in all most all minority communities. Cultivators are high (12.15 %) in Buddhists followed by Christians with (29.2 %).  Agricultural workers are high (17.18 %) in Buddhists community followed

by the Christians with (16.54 %). Most Minorities are engaged in non-agricultural occupations, such as sales persons, shop assistants, tailors, machine fitters etc. Muslims have traditionally been engaged in skilled occupations like weaving, spinning, artisanship with a large proportion of them functioning as street venders.

**Table: 12.6: Distribution (%) of Population by Occupation (Principal Source of Livelihood) of Household across Religious**

| Religious communities | Total workers % from Total Population | % of Distribution of Workers by Occupation | | | | Total Non-workers | Total |
|---|---|---|---|---|---|---|---|
| | | Cultivators | Agricultural workers | Household industry workers | other workers | | |
| *1* | *2* | *3* | *4* | *5* | *6* | *7* | *8* |
| All Religions | 45.79 | 10.31 | 18.15 | 2.15 | 15.17 | 54.21 | 100 |
| Hindus | 47.09 | 11.24 | 19.31 | 2.19 | 14.35 | 52.91 | 100 |
| Muslims | 33.79 | 2.52 | 7.38 | 2.07 | 21.82 | 66.21 | 100 |
| Christians | 42.82 | 3.73 | 16.54 | 0.92 | 21.62 | 57.18 | 100 |
| Sikhs | 37.24 | 1.54 | 2.39 | 2.46 | 30.85 | 62.76 | 100 |
| Buddhists | 46.08 | 12.15 | 17.18 | 1.32 | 15.43 | 53.92 | 100 |
| Jains | 30.44 | 0.46 | 0.22 | 0.9 | 28.87 | 69.56 | 100 |
| Others | 39.22 | 4.59 | 3.82 | 1.51 | 29.3 | 60.78 | 100 |
| Religion not stated | 41.32 | 8.14 | 16.71 | 1.87 | 14.6 | 58.68 | 100 |

Sources: Religion Census, 2001

### 12.5.4. Plan Priority of Minorities

12.5.4.1. *The Andhra Pradesh State Minorities Finance Corporation Limited (1956)*: the corporation assists weaker sections of Minorities by providing subsidies setting up businesses, industrial, Service, Agricultural and allied viable activities and Grant-in-Aid for welfare scheme to assist their socio-economic development. The Corporation provides economic assistance (bankable Scheme) for assisting minority beneficiaries. An amount of Rs. 836.99 lakhs for the 8280 Minority beneficiaries was provided in 2006-07, and Rs. 705.00 lakhs for the 2000 Minority beneficiaries in 2010-11 was provided by the corporation in recent years in Andhra Pradesh.

*12.5.4.2. Promoting Education:* The Andhra Pradesh State Minorities Finance Corporation is provided funds for Pre and Post-Metric Scholarships, and reimbursement of tuition fee and for maintenance of Pre-metric hostels. An amount of Rs. 60.22 lakhs was released to the Corporation for the maintenance of Pre-metric hostels during the year 2007-08, Rs. 175.00 lakhs for maintenance of Post-Metric hostels during the year 2008-09, Rs. 400.00 lakhs in 2009-10 and Rs. 400.00 lakhs in year 2010-11 in Andhra Pradesh.

*12.5.4.3. Housing and land:* The *Indiramma* housing programme was launched in 2006-07 in the State to provide house sites to all people living in kutcha houses (irrespective of the religion they belonged to). Land to landless poor has been distributed in various phases in the state. About 1568 landless poor benefited under phase-I and 1053 under phase-II. About 333.81 acres was distributed to 198

beneficiaries under phase III in 2006, 309.88 acres distributed to 196 landless in phase-IV in 2008 and 704.66 acres distributed to 448 landless poor under phase-V in 2010.

*12.5.4.4. Prime Minister's New 15-Point Programme for the Welfare of Minorities*

The Prime Minister's New 15-Point Programme was launched in 2006 to ensure well-being, protection and development of minorities. It aims to:

- Enhance Education Opportunities
- Equitable Share in Economic Activities and Employment
- Improving Living Conditions of Minorities
- Prevention and Control of Communal Riots

The new programme is to make certain that benefits of various schemes/programmes flow equitably to the minorities.

## 12.5.5. Approach in the Twelfth Plan

i) Promoting Education**:** Improving access, retention and achievement in primary, elementary and higher education, with particular emphasis on the education of minority, especially Muslim, girl child. The SSA should ensure universal coverage for the children of educationally backward sections, with special focus on Muslim girls. Specific SSA components like centrally funded KBGVs should be set up for minority communities. At the same time, all State plans to access SSA funds will have to be reviewed to ensure that Minority children have equal chance to participate in State's school system. The Twelfth Plan will also need to focus on issues like recruitment of female teachers, provision of amenities and transportation and setting up of girls' schools and hostels.

ii). Access to government schemes and programmes, including schemes aimed at poverty alleviation; provision of physical infrastructure such as housing; provision of civic amenities and health infrastructure in Muslim-dominated village clusters and urban neighbourhoods as envisaged under the PM's New 15- Point Programme. In pursuance of the guidelines issued under the Prime Minister's New 15-Point Programme, scholarship schemes, namely the Pre-Matric, Post-Matric, and Merit- and Means-based schemes for minority students will need to be formulated and implemented in the Twelfth Plan.

iii). A majority of the Muslim workforce is self- employed and engages in artisanal work. These occupations have been under stress due to radical changes in the economy. Developmental projects have also led to loss of livelihoods for street vendors, most of whom are Muslims. As a result, deskilling is taking place and artisans and vendors are being forced to move to unskilled, informal work. The Twelfth Plan recognizes the need to provide support to these artisanal groups not just for

ensuring inclusive growth and development of the minorities, but for promotion of exports, employment and growth in GDP.

iv). In keeping with the  Common  Minimum Programme's (CMP) commitment to security and justice for minorities, efforts are to be made to carry out interventions which ensure prevention of communal violence. A comprehensive communal violence legislation needs to be enacted and justice and reparations ensured for survivors of communal crimes.

# 13. Urban Challenges

Andhra Pradesh has been witnessing a phenomenal growth in urban population which is unaccompanied by appropriate urban planning. This is causing a tremendous strain on existing civic infrastructure. Urban planning is a critical challenge in the face of burgeoning problems of urban growth and population concentration in cities.

## 13.1. Pattern of Urbanisation

The proportion of population living in urban areas in Andhra Pradesh according to 2001 Census was 27.08% (2.05 crore) compared to the 27.78% at all-India level. The state's urban population increased to 2.85 crore by 2011 constituting 33.49% of the total population which is above the national average of 31.2%. Andhra Pradesh stands third among the four southern states in terms of the degree of urbanization in recent years.

The State has been witnessing a growth in urban population growth and also growth in urban areas – both in number as well as in area. This has caused a tremendous strain on existing amenities and led to deterioration in the quality of life in towns and cities. This situation calls for proper planning and building of capacity for managing urban growth with planned civic amenities and service delivery.

The proportion of urban population and growth of urban population increased consistently during the 1961 – 1991 period. However, during 1991-2001, while there was a slight increase in the proportion of urban population, the rate of growth of urban population decelerated. Around 50 % districts showed less than one percent growth in urban population during this period. The low urban growth rate during 1991-01 (compared to 3.7 % during 1981-91) was partly due to declassification of a large number of towns in 2001.The growth of urban population in the State again reached 3.1 % per annum by 2011.

The number of urban centres in AP also increased from 210 in 2001 to 353 in 2011. The number of urban agglomerations has to be taken into account to adjust figure for urban centres. The distribution of population by size and class of urban centres in AP reflects increasing concentration of population in agglomerations with more than one lakh population (Tables 13.1 and 13.2).

The most striking feature of India's urbanization is accelerated rate of clustered urbanization with relatively low degree of urbanization which also prevails in Andhra Pradesh. The phenomenal increase in urban population has taken place mostly in class-1 cities. The population of cities and larger towns is increasing faster than that of small towns without a commensurate growth in the number of Class-1 cities. Three larger cities (Hyderabad, Visakhapatnam, and Vijayawada) in Andhra Pradesh account for more than 40% of the total urban population in the state. This kind of top-heavy bottom-slim urban pattern in the state is a matter of concern.

**Table 13.1: Trends in Urbanisation in Andhra Pradesh: 1961-2011**

| Census Year | Total number of UAs/towns | Total Population (in Millions) | Urban Population (in Millions) | Urban Population (%) | Growth of Urban Population (%) |
|---|---|---|---|---|---|
| 1961 | 223 (1 UA) | 36.0 | 6.3 | 17.4 | 1.5 |
| 1971 | 224 (4 UAs) | 43.5 | 8.4 | 19.3 | 3.0 |
| 1981 | 252 (4 UAs) | 53.5 | 12.5 | 23.3 | 4.0 |
| 1991 | 264 (15 UAs) | 66.5 | 17.9 | 26.9 | 3.7 |
| 2001 | 210 (37 UAs) | 75.7 | 20.5 | 27.1 | 1.4 |
| 2011 | 353 (x UAs) | 84.7 | 28.4 | 33.5 | 3.1 |

**Note**: U A – Urban Agglomerations.

**Source**: Census of India.

According to 2001 census there are 173 towns and urban agglomerations in AP which can be categorised as 39 class I towns including 28 urban agglomerations, 43 class II towns including 8 agglomeration, 46 class III towns including one agglomeration, 23 class IV towns, 20 class V towns and 2 class VI towns. There is a heavy concentration of population in class I cities in Andhra Pradesh.

**Table 13.2: Number of Towns and Population in Andhra Pradesh: 1991-2001**

**(in Lakhs)**

| Year | Class 1 | | Class II | | Class III | | Class IV | | Class V | | Class VI | | Total Towns | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No | Pop | No | Pop | No | Pop | No | Pop | No | Pop | No | Pop | No | Pop |
| 1961 | 11 | 27.63 | 8 | 5.93 | 50 | 14.23 | 71 | 9.49 | 70 | 5.42 | 1 | 0.02 | 211 | 62.74 |
| 1971 | 13 | 41.50 | 17 | 11.59 | 60 | 17.67 | 75 | 10.34 | 37 | 2.74 | 4 | 0.15 | 206 | 84.02 |
| 1981 | 20 | 70.09 | 30 | 20.08 | 87 | 24.24 | 65 | 8.75 | 28 | 1.53 | 4 | 0.14 | 234 | 124.87 |
| 1991 | 32 | 119.81 | 34 | 22.46 | 61 | 29.47 | 39 | 5.88 | 14 | 1.13 | 3 | 0.08 | 213 | 178.87 |
| 2001 | 39 | 154.40 | 43 | 28.59 | 46 | 17.11 | 23 | 3.46 | 20 | 1.38 | 2 | 0.07 | 173 | 205.03 |

**Note**:

**Source**: Census of India.

The growth of urban population in Andhra Pradesh is not due to addition of new towns. Population in the Class-I and Class-II towns are growing at a faster rate, while there is absolute decline in population in other class towns. This decline in population has been continuing since 1981 in Class IV to Class-VI towns. This is because of lack of employment opportunities in the smaller towns, which result in movement of people from rural and small towns to larger towns/cities. The phenomenal increase in urbanisation has not resulted in adequate increase in urban settlements. The main cause for decline of small towns could be the high proportion of population dependent on agriculture, low level of development of hinterland, decline in occupations like artisans' i.e household industry sector etc.

The contribution of potential small towns to local economic development has not been sufficiently recognised in either rural or urban development strategies. China was able to make small urban centres attract investments in new industries that could employ rural surplus labour to work and settle instead of migrating to already established cities. Urban centres play a crucial role in promoting economic development and creating employment opportunities in AP.

**13.2 Urban Challenges**

Although urbanisation is an integral part of the process of economic growth and development, rapid rise in urban population without appropriate mechanism/systems in place to meet the needs of the population has been a key cause for the deterioration in urban living conditions. The critical issues that need immediate policy attention are governance, shortage of critical infrastructure, housing, deficiencies in major services such as water and power supply, inadequate transportation system, financing of urban infrastructure and services and more importantly the rapidly deteriorating urban environment.

Proliferation of slums is an integral part of rapid urbanization in urban India as is in Andhra Pradesh. The state has the largest number of cities/towns (77) with slums among all the states in India. In many cases most of these slums are underdeveloped in terms of many of the development activities offered by that particular urban local body.

### 13.3 12$^{th}$ Plan Approach

Managing urban resources and improving the quality of urban life is a major challenge. In the 12$^{th}$ Plan for AP, some of the critical issues that need to be addressed to achieve the broad objective of inclusiveness are as follows.

### 13.3.1 Urban Infrastructure

While programs taken up so far have improved basic infrastructure in cities, there continues to be a significant lag between demand and supply. Planning-oriented interventions also have been only partially successful because of poor quality of land use data, lack of capacity for planning, and uncoordinated development of areas due to multiple planning agencies.

JNNURM addresses much of the infrastructure and service delivery needs in urban management. But monitoring mechanisms need to be strengthened and decentralized to ensure that projects are taken up and executed responsibly. There is great scope for improvement and JNNURM is only a stepping stone for in attaining the envisaged vision especially with the limited resources and large rural demands. There are serious regional imbalances in urban development. Accelerating urban development in other regions of the state without sacrificing the interests of Metropolitan city constitutes a formidable challenge for the state.

Establishment of SEZs will have tremendous impact on the growth and development of small and medium towns located in their vicinity. Tax concessions granted to SEZs are bound to have serious repercussions on finances of local bodies. It is, therefore, proposed that SEZs shall share the revenue with ULBs under the jurisdiction they are located in.

There is a substantial deficit of infrastructure in several key areas - roads and transport (both within cities and between important cities in the State), housing, drinking water supply, domestic sanitation,

sewage treatment systems, solid waste collection and management, storm water drains, lakes in urban areas, and domestic energy. Therefore, urban policies and programmes should essentially focus on increasing investment in urban infrastructure services.

It is hoped that small towns will bring to notice the fact that district plans can no longer continue to remain sectoral, ignoring existence of smaller urban settlements. Smaller urban establishments are crucial for effective plan implementation, and therefore are to be thoroughly examined to identify the positive role they can play in improving district economies.

### 13.3.2 Housing and Amenities

The government has been implementing several housing policies for the poor over the years. Based on the experience gained so far, issues like availability of land, participation of beneficiaries at the design and construction stages, availability of skilled labour etc. are identified as crucial inputs for framing appropriate policies. There is a need for greater role for capacity building of community based organisations (CBOs) in slum areas. Availability of resources is another problem. For instance, for implementing the slum-free cities policy in 25 urban local bodies (ULBs) in AP there is a need for 5 lakh dwelling units which need an allocation of Rs. 1700 crore. It is beyond the capacity of these ULBs to invest the required resources. Rajiv Awas Yojana (RAY) needs to address these issues.

The growing demand for other basic amenities like water, sanitation, public transport, and environmental protection should be met by increasing financial allocations, plugging leakages in the system and governance reforms.

### 13.3.3 Master Plans

Master Plans have been prepared for 85 ULBs in the state but these bodies do not have administrative and financial capacity to implement those plans. They are not able to protect public spaces/open lands which is resulting in shortage of available land for government for public purposes. Master Plans need to factor in the land requirement for housing for the poor and other amenities.

### 13.3.4 Land in Peri-Urban areas

As large urban centres are expanding in the peri-urban areas, developmental projects, transport corridors etc., require huge tracts of land these areas. This is also leading to displacement of people. There is a need to review auctioning of public lands by the government agencies keeping in view the land requirement in future for public utilities and social objectives. In the coming years, urban planning and governance need to take into account all these factors.

### 13.3.5 Use of Remote Sensing and GIS

Availability of space technology and widespread computer applications has made it possible to acquire real time geospatial data on urban expansion. Urban planning and administration in coming years should make full use of these applications for better governance and service delivery.

Keeping the above issues in focus, and realising that the urbanisation is going to increase in future, the 12$^{th}$ Plan should address the following issues.

### 13.3.6  Governance reforms

The cities need to be governed in such a way that they are able to meet the rising expectations in providing high quality civic services and contribute to economic development and employment generation. The present system of governance should be changed in favour of models with more devolution of administrative and financial powers, accountability and people's participation.

### 13.3.7 Financial resources

Even as the share of urban population has been increasing there has been no corresponding rise in the financial allocations to the urban sector. Many a time the ULBs are struggling to pay salaries to the staff. There is need for investment in urban infrastructure assets and maintenance of assets. A part of the resources required for investment can be mobilized through proper administration of service charges/taxes within the urban local body domains. The rest of the resources has to be mobilized through centrally sponsored scheme or through PPP approach.

### 13.3.8 Capacity building

Many ULBs suffer from severe shortage of skilled personnel to perform complex tasks of building and managing civic infrastructure for efficient service delivery, resource mobilisation and urban planning & administration.

# 14. Governance

Governance that involves the process of decision-making and the process by which decisions are implemented (or not implemented) in government sector is an issue of increasing concern. Good governance is a critical aspect for effective implementation of plan schemes and for ensuring effective access to a common man to public resources.

Good governance is participatory, consensus oriented, accountable, transparent, responsive, effective and efficient, equitable and inclusive and follows the rule of law. It assures minimal corruption, takes into account views of minorities and where voices of the most vulnerable in society are heard in decision-making. It is also responsive to the present and future needs of society.

There is a need and demand for good governance not only for better delivery of public services but also for better functioning of private sector. It is a decisive factor in realizing the goal of inclusiveness in economic planning in India and in the state. There is a strong need to improve Implementation, Accountability, and Service Delivery. In this respect Greater devolution of power and empowerment of disadvantaged people and grass root level institutions are needed.

## 14.1 Decentralisation

Decentralisation of power to local units of government is one of the best ways of empowering people, promoting public participation and increasing efficiency. Decentralisation can help mobilize resources, find diverse solutions and promote equitable growth by bringing the poor into mainstream development. It was observed that the project costs are four times higher in centralised systems compared to decentralised systems. Besides, asset maintenance is much easier in decentralised systems. However, it is cautioned that decentralisation is not effective or efficient in all situations. Under conditions of greater inequality decentralisation may result in political and elite capture and nexus formation between interest groups.

### 14.1.1 Status of Devolution of Powers and Functions

Article 243(G) of the Constitution stipulates granting by law and by the legislation of a state such powers and authority and functions as may be necessary to enable devolution and functioning of institutions of self-government. On the basis of Devolution Index, Kerala is ranked first with value 75 % followed by Karnataka (69.5), Tamil Nadu (68.9), West Bengal (66.5). The scores of Maharashtra and Madhya Pradesh are about 60 % whereas Gujarat and Andhra Pradesh score around 50 %.

*14.1.2 Panchayats and Community Based Organisations (CBOs)*

Andhra Pradesh has for decentralized governance spear headed a new approach of creating a number of parallel institutions for service delivery at the local level,. Though this approach, in a larger framework, reflects the 'politics of development', it need not be brushed aside as a purely politically manipulated tool. The assessment of initiatives shows that parallel institutions have, in fact, performed well in some of the services. The impact of these parallel initiatives on livelihoods is however limited, while its impact is clear in the case of institutions that deal with natural resource management (NRM) like water, watersheds and forests. At the same time the sustainability of positive impacts through initiatives in NRM is questionable.

Parallel bodies have a separate system of decision making on resource allocation and execution of projects. Panchayats are entitled to hold their own funds in accordance with Article 243H. Therefore parallel agencies ought to be wound up. One way of dealing with this is to integrate these institutions with the PRIs as bringing the CBOs under the PRI umbrella can ensure accountability as the PRI acts as a monitoring agency/watch dog.

*14.1.3 District Planning Committees (DPCs) and its Implementation*

As per the Article 273 2 D of the Constitution, village panchayat plans prepared with people's participation are joined by plans prepared by Intermediate and District Panchayats and then consolidated by the District Planning Committees (DPCs) along with Municipal plans into the draft district development plans. The State Annual Plan is an integration of all Draft District Development Plans. In all the districts DPC have been constituted by completing the formalities of nominations of the members to the DPC.

*14.1.4 Panchayats, Sources of Grants and Centrally Sponsored Schemes (CSS)*

The *general fund* budget for the three tiers of local government derives from two sources: transfers from the state and local revenues. Transfers from the centre are generally low. This is partly attributed to the poor revenue-raising of local bodies in AP and partly because of fiscal constraints at the state level as Centrally Sponsored Schemes (CSSs) have come to dominate planned expenditures. In practice, therefore, internal revenue mobilization at the Panchayat level is weak. Since there is no Panchayat head of account in the budget, State government funds going to Panchayats are either (a) directly transferred to Panchayats through the treasury, or (b) transferred by the Government of India directly into parallel bodies, at the district level. Therefore, the Commissioner Panchayati Raj sends the funds to the Panchayats and therefore exercises considerable control over the release of funds. In

the Implementation of CSS the centrality of PRIs has not been there and this need was expressed strongly by the recent Administrative Reforms Commissions, 2007.

### *14.1.5 The Status of Panchayats Extension to the Scheduled Areas (PESA):*

PESA Act of 1996 extends part IX of the constitution to Fifth Scheduled Areas. AP is one of the nine States having Scheduled V Areas. Based on the Central Act of 1996, AP passed its Conformity Act way back in 1998. In AP the districts coming under the purview of PESA are Adilabad, Warangal, Khammam, East Godavari, West Godavari, Vishakapatnam, Vizianagaram, Srikakulam and parts of Mahaboob Nagar and Kurnool districts. PESA Act stipulates that every village/hamlet/group of hamlets is to have gram sabha which is competent to safeguard and preserve the traditions and customs of the people, their cultural identity, community resources and customary modes of dispute resolution. The gram sabha in PESA areas are endowed with such powers and authority so as to enable them to function as institutions of self-government. There are:

- Power to enforce prohibition
- Ownership of minor forest produce
- Power to manage village markets
- Power to exercise control over money lending
- Power to control institutions and functionaries in all social sectors and
- Power to control local plans and resources for such plans including tribal sub plan

The act also prohibits panchayats at the higher level to assume powers and authority of any panchayat at the lower level.

Though, AP government passed PESA Act long back, it has not been operationalised until recently. It took more than thirteen years to issue Rules of the Act. AP Government, issued G.O.No.66 in the month of March, 2011 enlisting rules of the Act to make it operational.

## 14.2. Participatory Institutions

Andhra Pradesh has been developing and nurturing participatory institution such as community based organization (CBOs) parallel to panchayat raj institutions (PRI) to improve implementation of developmental and welfare programmes/schemes,. These CBOs are formed through community mobilization. In fact Andhra Pradesh has had a long history of informal financial associations, that were formed through local initiative. The women's savings and credit movement gathered momentum in the early 1990s. Social mobilization enables the poor to build their organizations at grass roots

level, in which they can participate fully and directly, and take decisions on all developmental issues. Women's Self Help Groups (SHGs) is one such foremost organization in state.

The groups are organized under three categories viz., a) *Natural resource based* (Water Users' Association - WUA; Watershed Development Committees - WDC; and *Vana Samrakshana Samithis* - VSS); b) *Employment generation* (Development of Women and Children in Rural Areas - DWCRA; Development of Women and Children in Urban Areas - DWCUA and Chief Minister's Empowerment of Youth -CMEY), and c) *Human resource development* (Mothers' Committee and School Education Committees) based on their activity profile.

While AP has created a number of parallel institutions for service delivery at the local level, for decentralized governance, in the process it has earned the dubious distinction of bypassing or sidelining rural constitutional bodies like PRIs.

## 14.3 Good Governance Initiatives

The government of Andhra Pradesh has introduced various initiatives to improve overall governance in a number of areas. Using advances in information and communication technology (ICT) several many good governance initiatives in the service delivery of governance were introduced during the last two in the State. These include: Best practices in school education, Neeru-meeru, Power and Public Sector Reforms, Property Tax Reforms, Services Outsourcing, Single Window System (SWS), e-Governance Initiatives (e-Seva, e-Procurement, Online performance tracking), Citizen Charters, Rythu Bazars, e-Panchayats, etc. Some of the initiatives (including e-seva centers, rythu bazars, e-procurement and electricity reforms) have gained instant popularity and appreciation. The success of e-seva centres is reflected in their adoption across the country. The rythu bazar is rated as one of ten best practices in the country and are immensely popular among all sections of the population. The performance of AP Electricity Board has been rated as one of the best in country for two years in a row after the reforms. Similarly, the continuation of e-procurement approach by the present government is an indication of its effectiveness.

Most importantly the implementation of the recent centrally sponsored scheme Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) in the state using ICT and social audit method is commendable.

Good governance initiatives have helped in curtailing red tape and rent seeking in some cases. While the attempt to eliminate intermediaries has brought the citizens in contact with the line departments, some of these initiatives suffer from proper implementation rather than improper design.

## 14.4 Key Challenges

Despite the new initiatives, Governance continues to face a few key challenges

- Integration of parallel institution with democratic institutions (PRIs)
- Red-Tapism and Corruption
- Lack of Convergence across line departments
- Decentralization Deficit
- Accountability
- Transparency

# 15. Monitoring the 12<sup>th</sup> Five Year Plan

## 15.1 Background

Three alternate targets for economic growth have been explored for the 12<sup>th</sup> Plan Andhra Pradesh – 9%, 9.5% and 10%. While the first is set below the targeted growth of the 11<sup>th</sup> Plan, the second is a restatement of the 11<sup>th</sup> Plan target. The third is set at a higher level than the 11<sup>th</sup> Plan target for faster growth during the 12<sup>th</sup> Plan. Achieving the growth rate at 10% will require a significant acceleration in growth in agriculture, mining, registered manufacturing, construction and services sectors. It would also call for scaling up of investment as well as improving the efficiency of resource use. Moreover, with the witnessed slow-down in the economy in the last two years of the 11<sup>th</sup> Plan period it is envisaged that even maintaining the stated target of the 11<sup>th</sup> Plan itself would be difficult during at least the initial years of the 12<sup>th</sup> Plan period let alone achieving the proposed accelerated growth rate.

Hence, regular and comprehensive monitoring implementation of the 12<sup>th</sup> Plan activities would be critical for achieving its anticipated results. This monitoring system would not only require monitoring of the physical and financial progress in Plan implementation but also monitor Plan implementation process through clearly delineated process indicators and milestones and Plan Outcomes through pre-identified results (outcomes) to be achieved.

Grappling with this issue, the Planning Commission in its document "Faster, Sustainable and More Inclusive Growth: An Approach to the 12<sup>th</sup> Five Year Plan (2011) states that

*"First, ... implementation of programmes can be improved through a multi-faceted approach relying on professionalization of public service delivery, Total Quality Management, innovative use of IT and other technologies which improve monitoring and supervision. It can also improve through greater emphasis on social mobilization and capacity building, strengthening of local institutions, and building deeper partnerships with civil society organizations and the community to determine the needs and aspirations of the people. Second, .... "Project management' capabilities must be improved for the country to get better returns from public investment in infrastructure and also in the social sectors. Project management, to deliver on time and within cost, is a learnable capability that can be institutionalized ..... A nation-wide drive to improve project management must be an integral part of the Twelfth Five Year Plan (p. 16-17).*

Taking cue from the above, it is suggested to adopt an innovative approach towards monitoring and managing performance of the 12<sup>th</sup> Plan – the Results Based Management. Under this the Government will initiate a performance management system which will require every ministry and department to undertake a stakeholder consultation to assess the gaps between its' stakeholders' expectations and its actual delivery under the 12<sup>th</sup> Plan. The ministries and departments must innovate their strategies and implementation guidelines to bridge these identified gaps. Accordingly, it must specify the indicators by which performance should be monitored for achieving anticipated results. A similar system called

the "Performance Monitoring and Evaluation System (PMES)" has been adopted by almost all ministries / departments in the Government of India while some State governments have begun the process to adopt it.

## 15.2 Performance Monitoring and Evaluation System in Government of India

In 2009 The Prime Minister approved the outline of a "Performance Monitoring and Evaluation System (PMES) for Government Departments" vide PMO I.D. No. 1331721/PMO/2009-Pol dated 11.9.2009. The PMES is implemented by the Performance Management Division of the Cabinet Secretariat, Government of India.

Under PMES, each department is required to prepare a Results-Framework Document (RFD). A RFD provides a summary of the most important results that an organization expects to achieve during the financial year. This document has two main purposes: (a) move the focus of the organization from process-orientation to results-orientation, and (b) provide an objective and fair basis to evaluate organization's overall performance at the end of the year.

The RFD seeks to address three basic questions: (a) what are organization's main objectives for the year? (b) what actions are proposed to achieve these objectives? (c) how would someone know at the end of the year the degree of progress made in implementing these actions? That is, what are the relevant success indicators and their targets?

The RFD should contain the following five sections:

- Section 1        Organization's Vision, Mission, Objectives and Functions
- Section 2        *Inter se* priorities among key objectives, success indicators and targets
- Section 3        Trend values of the success indicators
-              Section 4        Description and definition of success indicators and proposed measurement methodology
- Section 5        Specific performance requirements from other departments / organizations that are critical for delivering agreed results

The procedure of RFD adopted by the Government of India is as follows:

- At the beginning of each financial year, with the approval of the Minister concerned, each Department prepares a Results-Framework Document (RFD) consistent with the guidelines issued by the Government of India

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- To achieve results commensurate with the priorities listed in the RFD, the Minister in-charge approves proposed activities and schemes for the Ministry / Department. The Ministers in-charge also approves the corresponding success indicators (Key Result Areas – KRAs or Key Performance Indicators – KPIs) and time bound targets to measure progress in achieving these objectives

- Based on the proposed budgetary allocations for the year in question, the drafts of RFDs are completed by 5th March every year. To ensure uniformity, consistency and coordinated action across various Departments, the Cabinet Secretariat reviews these drafts and provides feedback to the Ministries / Departments concerned. This process is completed by 31st March each year.

- The final versions of all RFDs are put up on the websites of the respective Ministries by 15th April each year.

- The Results Framework of each Department / Ministry is submitted to the Cabinet Secretariat, by 15th April of each year. It takes into account budget provisions and in particular the Outcome Budget. The Results-Framework Documents is drawn up in such manner that quarterly monitoring becomes possible. Quarterly reports are submitted to the Cabinet Secretariat.

- After six months, the Results Framework as well as the achievements of each Ministry / Department against the performance goals laid down at the beginning of the year, is reviewed by the High Power Committee on Government Performance consisting of the Cabinet Secretary, Finance Secretary, Expenditure Secretary, Secretary (Planning Commission), Secretary (Performance Management) and, if required, the Secretary of the Department concerned. At this stage, the Results-Framework Documents may be reviewed and the goals reset, taking into account the priorities at that point of time. The report of the High Power Committee on Government Performance is submitted to the Prime Minister, through the concerned Minister, for further action as deemed necessary.

- At the end of the financial year, all Ministries / Departments review and prepare a report listing the achievements of their ministry / department against the agreed results in the prescribed format. This report is expected to be finalized by 1st May each year. After scrutiny by the Cabinet Secretariat, these results are placed before the Cabinet for information by 1st June each year.

During the year 2011-12 a total of 73 ministries / departments prepared RFDs and had their performance monitored on its basis. States such as Maharashtra, Punjab, Kerala, Karnataka, Himachal Pradesh, Orissa and Meghalaya have also adopted the RFD process with training and guidance from the Office of the Cabinet Secretariat, Government of India.

## 15.3 Results Based Management System

Results Based Management is defined as a broad management strategy aimed at achieving important changes in the way organizations operate, with improving performance (achieving better results) as the central orientation. Results Based Management provides the management framework and tools for strategic planning, risk management, performance monitoring, and evaluation. Its primary purpose is to improve efficiency and effectiveness through organizational learning and secondly to fulfill accountability obligations through performance reporting. The key to its success is the involvement of stakeholders throughout the management lifecycle in defining realistic expected results, assessing risks, monitoring progress, reporting on performance, and integrating lessons learned into management decisions.

A key component of Results Based Management is performance measurement, which is the process of objectively measuring how well an organization is meeting its stated goals or objectives. It typically involves several phases: articulating and agreeing on objectives; selecting indicators and setting targets; monitoring performance (collecting data on results); and analyzing and reporting those results vis-à-vis the targets. Results Based Management, however, does not stop at performance measurement but proceeds on to its logical next step to use these measurements to improve performance, i.e. performance management. While performance measurement is concerned more narrowly with the production and supply of performance data, performance management is broader. It is equally concerned with generating management demand for performance information, i.e., with its uses in management decision-making processes and with establishing various organizational mechanisms and incentives that actively encourages its use. In an effective performance management system, achieving results and continuous improvement based on performance information is central to the management process.

The key stages of Results Based Management are:

1. Identifying clear and measurable objectives (results), aided by logical frameworks
2. Selecting indicators that will be used to measure progress towards each objective
3. Setting explicit targets for each indicator, used to judge performance (results frameworks)
4. Developing performance monitoring systems to regularly collect data on actual results
5. Reviewing, analyzing and reporting actual results vis-à-vis the targets

6. Integrating evaluations to provide complementary performance information not readily available from performance monitoring systems

7. Using performance information for internal management accountability, learning and decision making processes, and also for external performance reporting to stakeholders and partners

Results Based Management defines results in a hierarchical manner borrowing heavily from systems theory and reflects the central role of causality, while taking into account the temporal dimensions. The hierarchical levels in an ascending order are as follows:

Inputs:         The financial, human, and material resources used for development intervention

Activity:       Actions taken or work performed through which inputs, such as funds, technical assistance and other types of resources are mobilized to produce specific outputs

Output:         The products, capital goods and services which result from a development intervention; may also include changes resulting from the intervention which are relevant to the achievement of outcomes

Outcome:        The likely or achieved short-term and medium-term effects of an intervention's outputs

Impact:         Positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended

Based on these hierarchical levels it can be concluded that inputs are needed to undertake activities, in order to produce outputs, which in turn generate short and medium-term outcomes leading to long-term impacts. The graphical representation of this results chain is given below.
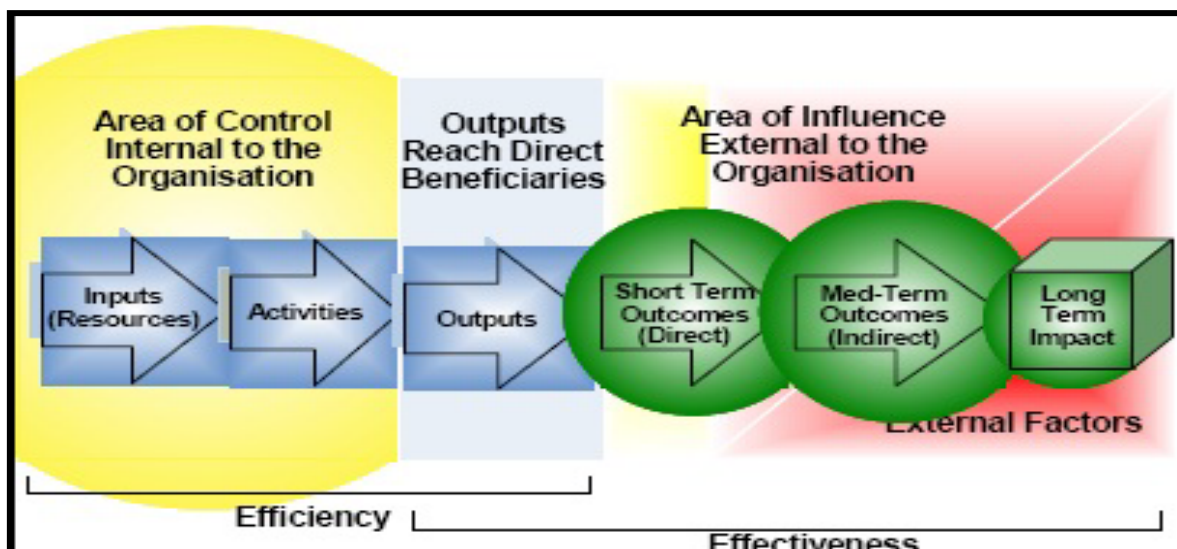
### 15.4 Management System for 12<sup>th</sup> Five Year Plan

The Result Based Management System proposed for monitoring the 12<sup>th</sup> Plan will include the following two tools:

1. Logical Framework (Matrix 1)
2. Results Measurement Framework (Matrix 2)

Logical Framework is a management tool mainly used in the design, monitoring and evaluation of development projects / programmes. It is also widely known as Goal Oriented Project Planning (GOPP) or Objectives Oriented Project Planning (OOPP). Logical Framework takes the form of a 4 X 4 matrix table. The four rows are used to describe four different types of events that take place as a project / programme is implemented: i) *Activities, ii) Outputs*, iii) *Purpose* and iv) *Goal* (from bottom to top of the matrix). The four columns provide different types of information about the events in each row. The first column is used to provide a *Narrative* description of the event. The second column lists one or more *Objectively Verifiable Indicators* (OVIs) of these events taking place. The third column describes the *Means of Verification* (MoV) where information will be available on the OVIs, and the fourth column lists the *Assumptions*. Assumptions are external factors that is believed could influence (positively or negatively) the events described in the narrative column. The list of assumptions should include those factors that potentially impact on the success of the project / programme, but which cannot be directly controlled by the project or programme managers. In some cases these may include what could be *killer assumptions*, which if proved wrong will have major negative consequences for the project / programme.

Logical Framework is, therefore, an analytical, presentational and management tool which can help project / programme planners and managers:

- Analyze the existing situation during project / programme preparation
- Establish a logical hierarchy of means by which objectives will be reached
- Identify the potential risks to achieving the objectives, and to sustainable outcomes
- Establish how outputs and outcomes might best be monitored and evaluated
- Present a summary of the activity in a standard format, and
- Monitor and review Activities during implementation

Results Measurement Framework is another project / programme management tool developed out of the Logical Framework. It sets out the *Indicators* and method by which results at all levels of project / programme hierarchy can be measured against the baseline and used for monitoring implementation and improving performance. Results Measurement Framework is also a multi row and column matrix table. The rows from the bottom up describe the *Outputs, Outcomes* (*mid-term and long-term*) and

*Impacts Indicators* that are to be used to measure the results achieved by the project / programme. These are described component wise to make the list of results and indicators as detailed as possible. The columns provided different details about the identified indicator. The first column is the description of the result to be achieved and the indicator to be used to measure it. Column two provides the baseline measurement of the indicator which the project / programme intend to improve upon. The third column provides the extent of improvement over the baseline that the project / programme would achieve. This is generally provided year wise through the duration of project / programme implementation, here proposed to be provided over the five years of the Plan period. Column four lists the frequency of reporting of the indicator, which could be anywhere between daily to annually. The sixth column provides the data requirement and data collection method for measuring the indicator and column seven provides the identity of the person/s responsible for collecting the data and analyzing it to measure the indicator.

## Matrix 1: Logical Framework

| Intervention Logic | Objectively Verifiable Indicators (OVI) | Means of Verification (MoV) | Assumptions |
|---|---|---|---|
| **Goal (Impact)** The impact towards which the programme / project is expected to contribute (Mention beneficiary group) | **Goal OVI** Measures (direct / indirect) to verify to what extent the goal is fulfilled | **Goal MoV** The source of data necessary to verify status of goal level indicators | **Assumptions** Important events, conditions or decisions outside control of the programme / project which must prevail the goal |
| **Purpose (Outcomes)** The short-term (direct) and med-term (indirect) outcomes which is expected to be achieved as the result of the project | **Purpose OVI** Measures (direct / indirect) to verify to what extent the purpose is fulfilled | **Purpose MoV** The source of data necessary to verify status of purpose level indicators | **Assumptions** Important events, conditions or decisions outside control of the programme / project management necessary for achievement of the purpose |
| **Outputs** The results that the programme / project management should be able to guarantee (Mention beneficiary group) | **Output OVI** Measures (direct / indirect) to verify to what extent the output is fulfilled | **Output MoV** The source of data necessary to verify status of output level indicators | **Assumptions** Important events, conditions or decisions outside control of the programme / project management necessary for production of outputs |
| **Activities** The activities that have to be undertaken by the programme / project in order to produce outputs | **Inputs** Goods, people and services necessary to undertake the activities | **Activities MoV** The source of data necessary to verify status of activity level indicators | **Assumptions** Important events, conditions or decisions outside control of the programme / project management necessary for the start of the programme / project |

## Matrix 2: Results Measurement Framework

| Objectively Verifiable Indicators | Baseline Status | Results Proposed to be Achieved | | | | | Reporting Frequency | Data Collection Method | Responsibility for Data Collection |
|---|---|---|---|---|---|---|---|---|---|
| | | Yr 1 | Yr 2 | Yr 3 | Yr 4 | Yr 5 | | | |
| **1.   Impact** | | | | | | | | | |
| 1.1. | | | | | | | | | |
| 1.1. | | | | | | | | | |
| **2.   Outcome (Long-Term)** | | | | | | | | | |

| 2.1. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2.2. | | | | | | | | | |
| 2.3. | | | | | | | | | |
| **3. Outcome (Med-Term)** | | | | | | | | | |
| 3.1. | | | | | | | | | |
| 3.2. | | | | | | | | | |
| 3.3. | | | | | | | | | |
| **4. Output** | | | | | | | | | |
| 4.1. | | | | | | | | | |
| 4.2. | | | | | | | | | |
| 4.3. | | | | | | | | | |

The responsibility of preparing the Result Framework Document could be vested with the individual ministries and departments whose projects / programmes have been selected for the initial phase of Result Based Management System. However, these ministries and departments may require training and capacity building of their concerned staff in preparation of their Result Framework Document. Towards this the Planning Department, Government of Andhra Pradesh could shoulder the responsibility of establishing an Experts Cell on Result Based Management System in it. The Cell could be staffed with experts on Result Based Management System, Monitoring & Evaluation, Statistical and Quantative Analysis, Participatory Analysis and Geographical Management of Information System. Planning Department is considered the preferred host for the Experts Cell on Result Based Management System first because it already has the mandate for coordinating preparation of Five Year and Annual Plans of the State and for reporting progress of development activities in the state to the Government of India and to the Planning Commission. It thereby already has knowledge and information about the various development activities being implemented in the State. Second, agencies such as the Directorate of Economics and Statistics, Andhra Pradesh State Remote Sensing Application Centre and Andhra Pradesh State Development Planning Society, who would play critical role in spatial and statistical data collection and analysis for monitoring the Five Year and Annual Plans are all under the Planning Department. Finally, the Planning Department is in the process of implementing the Andhra Pradesh State Strategic Statistical Plan, which includes components that would vastly facilitate implementation of a Result Based Management System in the State.

The Experts Cell on Result Based Management System would provide training to the ministry and department staff on the concept and use of Result Based Management System Approach and preparation of Result Framework Document. It would also continue providing hand-holding support to the ministries and departments in using the Result Based Management System as a Decision Support System for improving implementation of Plan programmes / projects. In the immediate future the Experts Cell on Result Based Management System would provide direct services to the concerned ministries and departments through the Planning Department. However, over the longer time frame (perhaps by the end of the 12th Plan period), the Experts Cell on Result Based Management System

will support the ministries and departments to establish their own Cells to take over the task of managing their respective Result Based Management System and associated Decision Support System, 13th Five Year Plan onwards. After that the Experts Cell on Result Based Management System in the Planning Department would continue with overall monitoring of the Five Year and Annual Plans of the State.

# 16. Concluding Remarks

Given the trends of the last one decade the growth prospects for Andhra Pradesh are promising. Growth of agricultural sector which is dependent on weather conditions and natural calamities such as droughts and floods is an important pre-condition required for better overall growth in the State. Although industry-friendly policy environment has created a favorable climate for ushering in industrial growth factors such as infrastructure, roads and transportation, power, access to finance are still acting as impediments in materializing the industrial growth potential in the state.

On the social sector front, school education at elementary and secondary levels has improved and there is possibility of achieving universalisation of school education (elementary and secondary education) if required effort are made rigorously. The state's achievement in higher education has also improved but the quality of education is a matter of great concern. In health sector, although state's performance is remarkable in family planning that made AP one of states with the least fertility rate in India and thus with faster demographic transition, it is lagging behind in performance in other health parameter such as infant mortality and malnutrition. With a lot of challenges facing it there is a lot to be achieved in the health sector in the 12th Plan. Similarly, a number of issues continue to challenge other social sectors like drinking water, urban development, development of disadvantaged castes and minority communities that need to find policy direction and targeted intervention in the 12th Plan.