

**DRAFT**  
**APPROACH PAPER**  
**FOR**  
**TWELFTH FIVE YEAR PLAN(2012-17)**  
**TAMIL NADU**

# Contents

<b>An Overview.....</b>	<b>3</b>
<b>Primary Sector-Agriculture and Allied Sectors.....</b>	<b>13</b>
<b>Rural Development.....</b>	<b>23</b>
<b>Industries.....</b>	<b>27</b>
<b>Infrastructure: Energy and Transport.....</b>	<b>34</b>
<b>Urbanisation.....</b>	<b>42</b>
<b>Education, Skill Development and Employment.....</b>	<b>49</b>
<b>Health and Nutrition.....</b>	<b>59</b>
<b>Social Security and Inclusive Growth.....</b>	<b>68</b>
<b>Natural Resource Management.....</b>	<b>73</b>

## Approach to the Twelfth Five Year Plan

### An Overview

Tamil Nadu is one of the most socially developed and economically progressive States in the country and progressing faster in terms of per capita income and Human Development Indicators (HDI).

The Eleventh Plan (2007-12) was formulated with the broad objective of ensuring steady growth and sustainable economic growth coupled with social justice. There is some substantial progress in the objective due to initiatives taken in the Eleventh Plan. However, there are some shortfalls that need to be addressed.

During the Tenth Plan, the Tamil Nadu economy grew at 9.5 percent per annum (highest among the Five Year Plans) as against the target of 8 percent. During the first four years of the Eleventh Plan, it registered 8.05 percent growth and it is likely to reach 8.5 percent at the end of the plan against the target of 9 percent. The fall in annual Gross State Domestic Product (GSDP) growth was mainly due to the negative growth of agriculture in the first 2 years of plan. Industries also recorded decelerated growth.

### Growth of GSDP

Sector	XI Plan Target (%)	Growth Rate (%)				
		2007-08	2008-09	2009-10	2010-11	2007-11 AAGR*
Agriculture	4.0	-4.41	-2.29	2.42	7.02	0.69
Industry	9.2	3.86	-2.06	7.74	7.88	4.36
Services	10.1	9.33	9.62	11.22	14.08	11.06
GSDP	9.0	6.13	4.89	9.43	11.74	8.05

AAGR –Average Annual Growth Rate, Source: Department of Economics and Statistics

The two key features of the Tamil Nadu economy are growing share of services sector and growing urbanization of population. Like in many other States, the structure of GSDP in Tamil Nadu has been shifting away from agriculture towards non-agriculture, particularly to services.

### ***Declining share of Agriculture***

Agriculture still continues to be a dominant sector and provides livelihood to nearly 45 percent of the people. But its share has eroded to 8.2 percent of GSDP in 2010-11 from 11.1 percent in 2004-05. Global development experience reveals that one percent growth in agriculture is at least two or three times more effective in reducing poverty than the type of same growth emanating from non-agricultural sector. During the period 2000-11, this sector registered negative growth in five years and positive growth in six years shows the vulnerability of the sector and is also a cause of distress arising due to the instability in production and productivity. A comprehensive package combining several components to revitalize the sector should be designed to enhance the productivity working within the water constraints and stabilizing or enabling inter and intra seasonal risk proofing of rain fed production systems.

Diversification of Agriculture into Animal husbandry, Non-food crops, Horticulture, Floriculture and Sericulture has the potential to enhance the farm incomes. The food consumption basket is getting increasingly diversified and though cereal baskets dominate, this dominance is being eroded by rising expenditure on fruits, vegetables, milk, egg, meat and fish, which is the "High Value" segment, and this transformation, is in tune with development expectations. Tamil Nadu is one of the important Coastal States having a coastline of 1076 kms. There are 13 coastal districts and 591 fishing villages with a total marine fisher population of about 8.92 lakh, of which 2.60 lakh fishermen are actively engaged in fishing. Hence, it becomes imperative to enhance the incomes of the fisher folk by augmenting marine and inland fish production through innovative technologies. The output from the agriculture sector should be reflected in higher rural incomes

leading to improved health and nutrition status. Non farm income such as post harvest operations, maintenance of farm equipments etc. offer a virtuous cycle connecting expansion of farm activity to that of rural non farm income opportunities.

### ***Industrial Sector***

Tamil Nadu continues to be an attractive investment destination for investors. Due to the pro active policies of the government and the conducive environment, the State has attracted huge investments in the manufacturing sector which accounts for 21 percent of the total investments as on March 2011. It is in the forefront of attracting Foreign Direct Investments (FDI), establishing Special Economic Zones (SEZ) and Industrial Parks. The State is a leading manufacturer in Automobiles, Textiles and Hosiery that have been generating huge employment. The State has a share of about 26% of India's auto components production. The contribution of manufacturing sector to GSDP is marginally declined from 20.39 percent in 1999-2000 to 17.75 percent in 2010-11, in spite of the severe challenges faced internally and externally.

Information and Communication Technology sector (ICT) continues to grow rapidly and the contribution to GSDP has gradually increased to 9.7 percent in 2009-10 from 6.6 percent in 2004-05. The State has been promoting Special Economic Zones (SEZs) for Information Technology-Information Technology Enabled (IT-ITES) services in Tier-I and Tier-II cities. It is also strengthening Business Processing Outsourcing (BPO) services in rural areas.

Micro Small and Medium Enterprises (MSME) is a vibrant sector in terms of employment, industrial production and exports. This sector is known for its employment opportunities next only to Agriculture. MSME sector contributes 10 percent to the GSDP.

Tamil Nadu has the potential to grow more than 10 percent as its GSDP comes largely from the non-agricultural sector: services share is about 65 percent

and manufacturing share 18 percent. The services sector has registered more than 11 percent growth in first four years of the Eleventh Plan. Among the services, Communication posted a robust growth of 16.1 percent followed by Banking & Insurance and Real estates & Business services with 15.5 percent during 2007-11. About 40 percent of the State's workforce is in Services sector.

### ***Energy challenge***

Electricity is a critical infrastructure for the socio economic development of the State. The State has a total installed capacity of 10,237 MW from conventional sources and 6,007 Mega Watts (MW) from renewable sources. In spite of having such a huge capacity, the State is facing severe power shortage of about 1,500 MW due to the rapid industrialization and the demand for power is growing at the rate of 10% per annum. The State Government is planning to launch large scale installation of captive solar power plants to the tune of 3,000 MW in order to reduce the pressure on conventional sources of energy. Focus on production of energy from renewable sources like wind and solar and non-conventional sources like bio-mass would be encouraged in the next plan period. Rational energy pricing is critical for both effective demand management and a healthy supply response. It is also relevant for expansion of domestic supply because under pricing of energy imposes larger burden on the energy production reducing the resources that should accrue to them for financing new investments in these areas. The poor will need subsidy but energy prices cannot be delinked from the national and global price levels particularly where import dependence is increasing.

### ***Employment and Livelihood***

According to the recent National Sample Survey (NSS 2009-10) Report on Employment and Unemployment, the workforce in the State has grown to 318.82 lakhs in 2009-10 creating an additional employment of 29.02 lakhs since 1999-2000 with a compounding growth rate of 0.96 percent per annum. The gendered demographic dividend could be way of increased women labour force participation create a multiplier effect in the economy. It could add to the growth potential

provided higher levels of education, skill development and health is achieved and also an environment of rapid growth is created with good quality employment and livelihood opportunities are created to meet the needs and aspirations of the youth.

Tamil Nadu has been very successful in reducing poverty. According to the Tendulkar methodology, which is being followed by the Union Planning Commission, State's poverty has fallen to 18.3 percent in 2009-10 (tentative estimate) from 28.9 percent in 2004-05. In absolute terms as many as 60 lakh persons in Tamil Nadu have been moved out of poverty line. However, as many as 130 lakh persons are still languishing in poverty.

### ***Human Development***

Tamil Nadu has been in the forefront of introducing social reforms and implementing a slew of welfare schemes to empower the marginalized sections of the society. The State performs well in Human Development Indicators. According to the National Human Development Report 2001, the State was ranked 3rd behind Kerala and Punjab. Gross Enrolment Ratio and Net Enrolment Ratio have improved in both primary and middle levels. There is need to follow a threefold strategy of expansion, equity and excellence in higher education.

Although, Tamil Nadu compares well with country's average performance in respect of many health indicators including Total Fertility Rate, Infant Mortality Rate, Maternal Mortality Ratio and child nutrition, there are concerns about some of these indicators as the State is not likely to meet the Eleventh Five Year Plan targets relating to these indicators. IMR is still 28. Although about 95 percent of births occurred in health institutions, MMR is 79 (2008-09). Ensuring safe motherhood and protecting infants are the biggest challenges. Nearly 50 percent of our women (15-49) are anaemic.

The State has been implementing various welfare programmes for the socio-economic empowerment to uplift the downtrodden. As a result the social

sector expenditure has increased to 49 percent in 2011-12 from 42 percent in 2006-07 in plan expenditure, which is the highest in the country.

### ***Urban Infrastructure***

According to the Census 2011, Tamil Nadu is one of the most urbanized States in the country with 48.45 percent of its population living in urban areas. The pressure for urban infrastructure viz., roads, housing, water supply, sanitation and sewerage is increasing rapidly. Providing clean drinking water is also a challenge. Currently out of 719 urban towns, only 397 are provided with clean drinking water as per the norms. Underground Sewerage Connections are available only in 14 ULBs (Urban Local Bodies).

### ***Natural resource management: water, land and forests***

Sustainable economic development is sustainable only if environment protection is pursued efficiently. Accelerated growth is expected to intensify the pressure on management of water, forests and land. Efficient use of scarce resources by appropriate pricing would ensure undue exploitation of these resources.

### ***Infrastructure Development***

Infrastructure Development has not kept pace with economic development. Due to increased urbanization and exponential growth of vehicles, road infrastructure deficit continues and there is an enormous demand for dependable urban mass transit. International trade volumes have been growing faster than Gross Domestic Product (GDP) and will continue to do so indicating the need to build adequate capacity in the ports. The strategies to meet these requirements are improving the road capacity with new connectivity and upgrading roads, computerized road management system, comprehensive road and traffic planning, creation of minor ports with private partnership, introducing Mono Rail system linked with Metro Rail system, modernization and expansion of airport. The Government has already constituted the Tamil Nadu Infrastructure Development

Board to create a congenial environment for facilitating speedy implementation of critical infrastructure projects that will drive the growth. Critical bottlenecks in infrastructure development should also be addressed to sustain higher growth in the Service Sector so as to achieve an overall growth of above 10%. Economic growth also needs to be more inclusive and reduce urban-rural disparity. To develop infrastructure facilities concentrating on major areas like Roads, Power, Ports etc., resources are needed which are much larger than the public sector can provide. The public investments are needed to be supplemented by private investments in Public Private Partnership (PPP) mode. In addition the Public-Public Partnership will also be encouraged.

### ***Fiscal Status***

The State's Own Tax Revenue as a percentage of GSDP has increased from 8.83 percent in 2004-05 to 9.25 percent in 2011-12, which is one of the highest among the States and shows the efficiency in revenue mobilization. The financial transfers from the Centre to the States viz., share from the central taxes, plan and non plan grants, etc., as a percentage of GSDP have increased marginally from 3.12 percent in 2005-06 to 3.59 percent in 2011-12.

On the other hand, the State with a long history of Social Justice, the Public Expenditure on Social sector has increased from 43.82% in 2002 to 49% in 2011-12 as the State has been implementing various welfare schemes for the upliftment of the marginalized sections of the society. The State has to incur huge expenditure on urban infrastructure as nearly half of the population now lives in urban areas. Also, the State funding on Energy sector, which is a critical infrastructure for attracting private investment, needs to be increased substantially.

### **Broad Objectives of the Twelfth Five Year Plan**

The State Government aims to achieve a higher level of sustainable economic growth, which will benefit all sections of Society. The Union Planning Commission in its Approach Paper to the Twelfth Plan indicated a growth target of

9 to 9.5 percent. Sustaining the services growth and accelerating the industrial growth, Tamil Nadu aims at a double digit growth rate by the end of the Twelfth Plan period. The Twelfth Plan provides an opportunity to restructure policies to achieve not just a robust and inclusive growth but also sets the goal to make Tamil Nadu "Number One" among Indian States.

The Twelfth Plan aims to achieve 4 percent growth in agriculture sector. Towards this, the State is set to embark on a Second Green Revolution which will be a mission to improve the agriculture production by addressing productivity gap and through value addition. The ultimate goal is to increase the farmers' per capita income by 2 to 3 times within five years. The second green revolution must move towards an Ever Green Revolution. Holistic water management, Agriculture Practices and bringing Dry lands and Nutritious Cereals back into the food basket, addressing concerns of "Soil Anaemia" which is also one of the causes of insufficient micro nutrients in food grains produced from such soil and several such measures will contribute to agriculture growth, income generation, Food Security and most importantly Nutrition Security.

It is a matter of concern that Tamil Nadu, a leading manufacturer in automobile, textile, hosiery and Information Technology (IT) and Information Technology and Enabled Services (ITES), has witnessed a slow pace of growth during the Eleventh Plan period. Manufacturing has large employment potentials. It must provide a large number of additional employment required to absorb people who need to move out of agriculture in pursuit of higher incomes as the services sector alone cannot absorb them. The Government has already taken various initiatives to accelerate the growth of industries and to make Tamil Nadu a Global Investment destination for automobiles, auto parts, textiles, leathers, engineering etc. and to make Tamil Nadu a Global Destination of choice for IT and ITES new industrial policy to facilitate investments and to regain the top place, industrial corridors, a World class shipbuilding yard, setting up a Liquefied Natural Gas import Terminal, IT-ITES Special Economic Zones (SEZ), new IT parks, e-

commerce and governance, etc., is committed to launching a package of Second Generation Reforms with a view to promoting rapid growth in the Manufacturing Sector.

The State Government, through the Tamil Nadu Skill Development Mission (TNSDM) will enter into partnership with industries to identify skill gaps and design course material leading to Modular Employable Skills (MES) certification. To ensure continuous supply of quality instructors, a Faculty Development Institute will also be set up under Public Private Partnership (PPP). The Tamil Nadu State Skill Registry will be created which will also capture and monitor of skill data. A world class training institute is proposed to be set up under PPP to train youth in hi-tech areas like Aircraft Maintenance, Manufacturing Shipping and Servicing etc. This will function as a Center of Excellence to train the students in specialized skills with international certification to facilitate the students to explore new avenues of employment opportunities both in the country and abroad.

The vision of the Government in the realm of higher education is to make institutions of higher education as centres of innovation, excellence and development. The mission is to provide world class quality education. To help the students to realize their full potential, the Government is providing every possible facility including Laptops.

### ***Strategies***

An important concern is Gender issues. For instance, the gender gap in literacy is 12.9 per cent. Women and gender issues require more than Gender Budgeting. The Twelfth Plan will be put through the "Gender- Lens" in all sectors in consonance with the sentiments, vision and firm commitment of the Government at the highest level. The entire Planning process will be ENGENDERED.

The second "Lens" for the planning process must be the "Green Lens" ensuring the building of sound economy on Sustainable Principle of Low Carbon, Low/ Zero Wastage and High Productivity.

Water Security, Food Security and Energy Security will not only be a goal but an outcome, as the Twelfth Plan will seek to move towards sustainable growth and development. Green growth has the potential to make the State a major player in accessing Carbon Credits as an income source besides again becoming a trendsetter in International best practices.

The approach for Rural Development is habitation based approach. Better Governance, Better Accountability and Responsiveness to peoples' needs will be an underlying theme and requirement in the spirit and formulation of all programmes. E-governance initiatives will be encouraged in all sectors to ensure greater transparency and more citizen-friendly service delivery.

Rapid expansion of the cities, necessitates the improvement of the basic amenities like Water Supply, Sewerage, Solid Waste Management, Roads, Street Lights etc., Rapid urbanization has created huge challenges as well as opportunities. In order to reap the benefits of the economic opportunities by all the sections of the society, our strategy is to make sustainable infrastructure development and targeted poverty reduction.

The Twelfth Plan in the State will seek to place Tamil Nadu at the very top in all the major indicators of the Human Development Index. Ultimately the outcome of the entire planning process must lead to minimisation / eradication of poverty and overall improvement in the quality of life of the people of Tamil Nadu. The core focus of the approach paper for the twelfth plan of the plan is to create an economy which has accelerated growth and is sustainable and inclusive in nature.

The sectoral approaches are outlined in detail in the coming sections. The state planning commission would be glad to receive suggestions regarding additions/deletion/modification of the points enumerated in the text and fresh approaches to any issue. Suggestions may be sent by email to [tinspc@nic.in](mailto:tinspc@nic.in).

## **Chapter -2**

### **Primary sector- Agriculture and Allied Sectors**

#### **Agriculture**

Tamil Nadu has about 7% of the Nation's population, occupies 4% of the land area and has 3% of the water resources of the Nation. The annual average rainfall of Tamil Nadu is only 930.70 mm as against the national average of 1200 mm. Agriculture including allied activities accounted for 8.2 per cent of GSDP (in 2004-05 prices) in 2010-11 as compared to 11 per cent in 2004. The emerging phase in agriculture will be based on integrating the principle of ecology and equity in technology development and dissemination. This is the path to an evergreen revolution leading to sustained increase in productivity without associated environmental harm.

The major objectives for the Twelfth Five Year Plan is doubling the food grain production and achieving 4 per cent growth in agricultural and allied sector. To increase the productivity of major crops and bridge the present yield gap Second Green Revolution Movement in the State will be initiated. To improve the economic status of the farmers and to increase the farmers' per capita income by 2 to 3 times from the present level judicious combination of Crop diversification comprising high value horticulture and commercial crops besides focus on rainfed area development and convergence of schemes, Mixed farming and other farm based interventions and value addition will be taken up. Promotion of Hi-tech agriculture, supplying quality inputs in time and promoting farmers' participation in agri-business ventures, strengthening research and extension service and empowerment of women in the development process could make the agriculture sector robust.

#### **Strategies**

The major strategies are Farm Plan- Farm Level Interventions like Integrated /mixed Farming System, Distribution of Farmer's Integrated Handbook with photograph, soil test results and recommendation on soil nutrient application for each farm along with scheme benefits, Development of crop cultivation Matrix specific to Agro Climatic zone, soil type and Irrigation Status, Promotion of crop diversification viz:- shift in the Cropping Pattern towards High Value Crops - Site specific zonation of crops and agriculture led rural industries and services will be the main focus.

Extensive adoption of innovative technologies like System of Rice Intensification (SRI), Micro Irrigation, Precision Farming, Sustainable Sugarcane Initiatives, Pulses Procurement Policy, Augmenting cotton production, Protected Cultivation, High Density planting and thereby emphasizing market led agriculture. To achieve nutrition security, more emphasis may be given to the locally grown nutritional grains and by fixing a Minimum Support Price.

Enhancing productivity by timely supply of quality inputs and increasing cropping intensity. Focus on Extension with Renewed Vigour by Extensive Use of Information Technology by provision of Touch Screen Kiosks at sub-Block level - Empowering farmers to have an access to information on input availability, Agriculture technology, market information apart from Farm Plan. Farm sector should address the increased feminization of the agriculture sector by mobilizing farm women into groups and improving their skills.

Ensuring Soil Health through Soil Health Cards – Bio-inoculants for sustainable crop production and enhanced soil health will be encouraged. Balanced use of organic and inorganic fertilizers in the cropping system will be promoted to address the undesirable change in the soil fertility and productivity. Recycled water use in agriculture (municipal and industrial) especially in peri-urban area for non food crops will be encouraged. Wasteland agro-forestry and planted forestry will be encouraged through PPP and co-operative mode. Strengthen and relaunch the campaign for the Rain Water harvesting systems.

Mechanisation through Popularizing improved Agricultural Machinery among the farming community through Mission Mode approach, and increasing the Farm power to 1.50 KW/Ha during the twelfth plan. Gender friendly equipments will be promoted.

Insurance coverage, credit and financial support in the event of crop failure due to natural calamities and crop damages due to pests and diseases will be envisaged.

Agricultural Marketing: through market driven production approach and promoting small Agri/Horti processing units by arranging Backward and forward linkages and encouraging the private sector to set up agro processing industries and Food Park at large scale with farmers' participation. Initiating food processing business incubator facilities near production catchments, providing pack houses and cold storage for perishable commodities and improving logistics and transportation service with cold chain facilities will be the major strategies. Promoting the export of agricultural produce through Agri Export Zones

There will be decentralized preprocessing unit with the support of centralized processing facilities to be located in most of the districts. Ensure remunerative returns to the farmers by adopting Post Harvest Management Techniques. The coming plan period would see the establishment of appropriate warehousing and marketing facilities to enrich the marketing knowledge of the farmers.

### **Agricultural Research**

District Agricultural Polytechnics for encouraging skill availability would be established. Centres of Excellences will be established in the regional research centres to train and retain technical manpower in specialized areas and to support the Post Doctoral Research towards high tech agriculture.

Research for innovative solutions like Crop improvement -developing new varieties and hybrids; Developing Precision Faming Technologies for major crops;

development of need based implements and machineries; Developing nanotechnology based solutions for enhancing productivity and value addition; Rhizosphere engineering and molecular marker assisted breeding; Research and technology transfer initiatives for rainfed areas to be given a major emphasis; Special models of animal dependent agriculture will be tested and propagated and development of adverse climate tolerant genotypes and land use systems would be encouraged.

### **Animal Husbandry**

Livestock sector contributes about 2.58 percent of Tamil Nadu's Net State Domestic products (NSDP) and that to the agriculture and allied activities is 26.45 percent. As per the Indian Council of Medical Research (ICMR) recommendation, the per capita requirement of milk should be 250 grams per day and 180 number eggs per annum. The per capita availability of milk in India is 263 grams per day and egg is 51 eggs per year. The per capita availability of milk in Tamil Nadu is 237 grams per day and egg is 162 numbers per year. The State contributes 18.13 percent of egg, 11.48 percent of meat and 5.13 percent of milk production and stands 2nd in egg and 4th in meat, 10th in milk production in the country. The developments in this sector contributed to women empowerment in a big way, therefore Government has given immense importance of this sector.

Animal husbandry sector aims to increase the production of milk, egg and livestock products, improve service delivery of veterinary services especially increasing the Artificial Insemination coverage and improving the conception and calving rate. Further stress will be to augment the fodder production.

### **Strategies**

The major strategies are bringing the landless labourers and marginal farmers into the fold of organised livestock rearing for increasing farm income, strengthening and improving the diagnostic service, veterinary delivery system and

breeding services at door steps, increasing the fodder availability, strengthening of extension services, and providing marketing access and improving cold chain.

Provision of Mobile veterinary lab with facilities to diagnose all bacterial diseases will be provided and further disease control monitoring mechanism will be strengthened by establishing Animal Disease Intelligence Unit (ADIU) in each district. The extension infrastructure has to be strengthened up. The formation of Mobile Veterinary cluster centre is a viable options. The state cattle farms will be supported to breed specialized breed of animals in bulk for augmenting milk and meat yield. Value addition of milk and meat will be approached with centralized processing facility and decentralized preprocessing through net-worked regional system, so as to enable the retention of work force in villages. Processing centres for smoked meat, ice cream, margarine, yogurt, cheese etc for export to be encouraged.

To protect the poultry from disease, the government is providing vaccination on specific days every week besides conducting State wide two week vaccination drive against Ranikhet diseases. The fodder availability in the state has to be increased by rejuvenation of village grazing lands. Enhancing the processing capacity and improving the cold chain facilities so that the quality of products from the animal husbandry sector gets increased and thereby assuring best prices to the farmers.. The market will be strengthened through provision of infrastructure, capacity building, establishing linking like public private partnership/contract farming and establishment of Livestock Business Centres. The conception rate and calving rate will be increased to 50 per cent and 47 percent in cattle and 45 per cent and 41 percent in buffaloes respectively. The gap between the requirement and availability fodder will be reduced by 10 percent.

### **Dairy Development**

During the last five years the estimated milk production has increased from 55.86 LMT to 64.17 LMT which resulted in increase in per capita availability of milk from 233 grams to 236 grams. The objective of dairy development in the State is

to increase the milk production by creating Second White Revolution and supply of clean processed milk following hygienic and food safety measures to the consumers at reasonable price. Diversifying dairy industry by conversion of milk to milk products which would not only result in value addition but also help in taking care of excess milk production

### ***Strategies***

To encourage milk production the activities such as organizing to review 1500 Primary Cooperative Societies, supply of Mineral Mixture to milk producers, providing quality Artificial Insemination services, installing Bulk Milk Coolers and animal health care at door steps has to be hasten up. Provision of animal breeding, veterinary healthcare, upgradation of milch animal, supply of feed, cultivation of fodder and insurance cover to animals owned by the milk producers in Cooperatives are to be done in a holistic way. Average milk production per animal in cross bred will be increased from 6.5 to 8 litres per day and that in graded buffaloes will be from 4.5 to 6 litres per day.

### **Fisheries**

Tamil Nadu ranks third in Marine fish production in India and the annual marine fish catch for the year 2010-11 was 4.04 lakh tonnes. The fish production from the inland sector during 2010-11 was 1.71 lakh tonnes.

The major aim is improving the living standards of fisher folk by implementing welfare and relief schemes. Strategies would focus on increasing the inland and marine fish production of the State using the latest technologies. .

### ***Strategies***

Marine Fisheries-Mid Sea processing units will be established, Augmenting marine fish production by stock enhancement (sea ranching) and establishing artificial reefs along the coast, uplifting the socio economic conditions of fisher folk by implementing welfare programmes, providing social security to the fisher folk by implementing relief schemes, promoting sustainable eco friendly coastal farming,

creation of infrastructure facilities and shore facilities for hygienic handling of fishes.

Inland Fisheries-Diversifying the present culture system in the aquaculture scenario by introducing technically feasible, economically viable, eco friendly and socially acceptable culture systems such as cage culture, fresh water prawn culture, sewage fed fish culture integrated fish farming etc., More number of irrigation tanks will be brought under extensive fish culture with the involvement of fishermen co-cooperative and Panchayat Raj Institutions. Popularizing the integrated aquaculture for rational utilization of land and water will be one of the most important strategy besides Promotion of ornamental fish culture. Encouraging and transferring the technology of sewage fed fisheries for productive purposes. The infrastructure facilities for fish landing centres, marketing and processing facilities like cold chain, processing units will be strengthened.

### **Irrigation**

They are 34 river basins in the State which have been grouped into 17 major basins and 127 sub basins. The total surface water potential of the State has been estimated as 853 TMC ft which includes 261 TMC ft contributed by neighboring States and this has been fully harnessed. There are 75 large and 7 small dams in the State with a combined storage capacity of 233.20 TMC ft. Further there are 39,202 tanks in the state. The ground water potential of the State has been assessed as 754 TMC ft

Irrigation Sector aims at improving the overall water availability in the State through Inter linking of rivers, rain Water harvesting as a people's movement and also Restoration of traditional water bodies and Artificial recharge scheme. To improve the water use efficiency, modernization of irrigation systems, improved service delivery, participation of farmers, popularization of micro irrigation will be taken up.

### **Strategies**

Under Irrigation sector, State aims at optimum utilization of rainfall through Planning, Developing and Managing the State's Water Resources. Intralinking of rivers viz., Intralinking of Cauvery with Agniar, South Vellar, Pambar, Manimuthar, Kottakaraiyar, Vaigai and Gundar, Storage capacity enhancement, flood surplus diversion, rehabilitation and maintenance of waterbodies with multi disciplinary approach besides implementing various medium and minor modernization scheme for gap reduction are the important strategies to achieve the goal.

There are 13699 irrigation tanks in Tamil Nadu under PWD and modernization works were taken up in 5763 tanks through Irrigated Agriculture Modernization and Water Bodies Restoration and Management (IAMWARM) and remaining tanks are proposed to be taken extending the World Bank loan assistance or by Repair, Renovation and Rehabilitation scheme aided by Government of India. To ensure efficient service delivery, Information Technology enabled last mile connectivity coupled with Decision Support System for entire Water Resources Department has been started under IAMWARM project.

Tamil Nadu is one among the pioneer states in promoting participatory irrigation management. The Tamil Nadu Farmers Management and Irrigation Systems Act 2000 (Tamil Nadu Act 7/2011) has been enacted. The Act envisages constitution of farmer's organization. The Participatory Irrigation Management Programme is fulfilling this requirement by including people from a user profile including social mobilizers who can bridge the Gap into with the users.

In Tamil Nadu State, 95 % of surface water is already utilized that too depend on neighbouring States and 85% of the Ground Water is also tapped for different purposes. For the better management of ground water on sustainable manner, the Government of Tamil Nadu banned new schemes in over-exploited and critical blocks. Also there is a restriction in usage of ground water in semi critical and safe blocks for purpose of sustainability of the existing usage.

The Master Plan Artificial Recharge Scheme with a outlay of Rs.550 crore, out of which hitherto 11402 RWH structures such as Check Dams, Recharge

Shafts, Percolation Ponds, Sub surface Barriers were constructed. In Tamil Nadu, there are 20 lakh ground water use structures (Agriculture Wells) for which it has only 3235 observation wells, since most of the open wells are dried up or abandoned, additional piezometers will be proposed for erection of bore well in phased manner (16000 bore wells) for the next four years.

### **Cooperation**

Cooperatives act as effective organizations intended for the welfare and economic upliftment of the people particularly agricultural community. Cooperatives in Tamil Nadu play a pivotal role in the development of rural economy by disbursing credit, facilitating marketing of agricultural produce and selling inputs and consumer goods at reasonable prices. The cooperative Credit Structure in the State is the largest institutional credit delivery system in terms of reach and network. The State has taken a pioneering role in transforming Primary Agricultural Cooperative Credit Societies from mere providers of agricultural and rural credit to distribution and sale of agricultural inputs, fertilizers, seeds and small agricultural implements.

### **Strategies**

To take advantage of market conditions cooperatives will absorb the technologies like Information Technology. In the field of financing by cooperative institutions, the priority will be given to financing of SHGs , Extension of Micro credit, Easy access to credit by small and marginal farmers especially the tenant farmers oral lessees , share croppers apart from disbursal of more produce pledge loan to the farmers.

The Primary Agricultural Co-operative Credit Societies ( PACCS )can play a big role as 'Spokes' in the hub and spoke model of marketing of agricultural produce. Farmers' Joint Liability Groups (JLGs), Agri Clinic will be established in the PACCS Agro Service Centres will be popularized The post harvest losses due to the open storing the food item is to be avoided for which it is proposed to

increase the storage capacity by constructing scientific godowns /warehouses in cooperatives marketing yard, Regulated Markets (RM), Direct Purchase Centre (DPC). Provision of capital loans for small irrigation schemes and extension of credit for differently abled persons for their economic upliftment are the priority areas.

## **Chapter - 3**

### **Rural Development**

The mission of Rural Development is to provide basic amenities in rural areas to the standard of urban areas so that the pressure of urban migration can be reduced. Elimination of poverty, empowerment of women and delivery of high quality services should be the basic premises upon which the planning of Rural Development is to be based.

#### **Challenges**

The Government of Tamil Nadu accords top priority to Rural Development as the share of allocation in the total outlay for Rural Development (12.0 per cent) is next to Transport (13.65 per cent) and Energy (12.59 per cent). Yet disparities exist among the districts/blocks and village panchayats. Despite planned interventions for improvement in access to sanitation, housing and common infrastructure facilities, gaps still remain.

Poverty reduction has been the main objective of planned development. Nearly half of the state population lives in rural areas. The spread of rural population varies significantly across the districts. The declining share of agriculture to the economy and the share of rural population necessitate appropriate livelihood strategies for poverty reduction and empowerment. The State aims at socio, economic and political development with people's participation. Provision of basic infrastructure facilities, ensuring quality services for cleaner and greener villages, creation of productive assets for sustainable livelihoods, enhancing rural economy and thereby establishing improved quality of life are the major thrust areas for the Twelfth Five Year Plan.

#### **Strategies**

There are exclusions and discriminations amongst the habitations within the Village Panchayat in access to basic civic services and facilities due to

implementation of schemes and programmes keeping 'Village Panchayat' as a basic unit. Every Village Panchayat consists of more than one habitation. Micro level planning at habitation level shall pave way for eliminating discrimination and reducing the rural-urban divide. Urbanisation of Tamil Nadu over the past decade indicates a blatant migration of people to the urban and semi-urban areas and this can be checked only if urban amenities available in urban areas are provided in rural areas. The planning process should be done at the habitation level for fulfilling their basic needs and to ensure inclusive approach. Hence, the policy is to take up the planning and implementation of the rural development programmes at the habitation level.

Affordable housing with adequate living space has been a critical challenge for the houseless rural poor, and hence, recognition of housing deficiencies and its rectification should be the core of the objectives of the State. The approach will be to provide houses with adequate living space to all the houseless poor within this plan period. This has to be achieved by according priority to rural housing programme, and emphasizing cost effective fast track green technologies in the construction.

Tapping renewable energy is catching momentum and Tamil Nadu has a very good solar potential with 300 clear sunny days, bio mass, wind etc. This potential could be tapped effectively by local bodies for rural electrification and water supply and by households for various energy needs.

Provision of adequate quantity of safe drinking water to all the people is a major objective of the Government. Adequate and sustainable supply of drinking water needs special attention. The State has ensured drinking water supply to every habitation. Now the emphasis should be to convert all the partially covered habitations into fully covered by augmenting and sustaining the supply sources. Focused attention should be given to ensure protected drinking water supply at the household level so as to ensure water security and focus should be on quality of water supply at the consumption point.

Inadequate sanitation is a major cause for disease and improving sanitation shall have significant beneficial impact on health, both in household and across community. Sanitation also refers to maintenance of hygienic conditions. Ensuring women's special sanitation needs to be given special attention.

Efforts should be made to achieve 100 per cent coverage of latrines within this five year plan period not only in individual households but also in schools and anganwadis. Mere availability of physical structures will not suffice and so the sanitary facilities are to be fully functional with adequate water supply using community driven approach. IEC campaign needs to be strengthened to ensure the usage of toilets and better sanitation practices. Clean Village Campaign needs to be revived and strengthened to mobilise the support of the community and active participation of PRIs for better sanitation.

Waste Management is another important issue which the rural local bodies face with the growing population and changing lifestyles in rural areas. Integrated Waste management for rural areas would be addressed.

Apart from providing basic infrastructure facilities in the rural areas for better quality of living, it is imperative to establish social infrastructure for employment generation and sustainable livelihoods for the rural poor. Employment generation is a direct way to attack poverty: sustainable livelihood enhancement ensures the households to come up above the poverty line.

The implementation of Mahatma Gandhi National Rural Employment Guarantee Scheme has created visible impacts in increasing agricultural wages, minimizing migration and enhancing water conservation, but its true potential as an instrument of rural transformation is yet to be fully realized. Efforts should also be made to ensure that the labourers receive the full wages, get assured 100 days of wage employment in a year without exclusion and make the programme more productive with land development activities for promotion of agriculture, horticulture and forestry etc. Efforts should be made to leverage technological interventions to improve effective implementation and monitoring.

The approach to promote self-employment should be through empowering the poor and improving their livelihoods through community-driven development approach with a focus on building strong community-managed institutions in a participatory manner. The strategy for poverty reduction is through family based intervention and efforts should be made to strengthen SHGs and PLFs to enable adequate credit absorption from banks to take up various economic development activities and thus reduce poverty. The other strategies include skill development and employment generation for youth by bridging the information gap between industries and unemployed rural youth.

Despite higher investment for rural development, disparities are observed among districts, blocks, villages in terms of economic development, infrastructure development and human development. Efforts would be made to bridge these gaps through convergence and vibrant local planning measures.

Decentralised governance would form the basis for all the overall approach. A roadmap for ensuring devolution and effective decentralised governance should be prepared and implemented. Though panchayat raj legislation has been enacted, panchayats have not graduated into becoming effective instruments of economic development and social justice. The roadmap should also focus on social justice and local economic development as both are key mandates of local governments. Reservation ensures equality but additional measures should be taken to facilitate inclusiveness in effective governance.

The Twelfth Plan should focus on strengthening gram sabhas and define their roles, responsibilities and powers in planning, implementing and monitoring local interventions by all tiers of governments

Adequate Training and Capacity building Institutions will be put in place to strengthen local planning. Plans at all levels have to evolve from the village through local government plans. All levels of plan are to be based on the human development approach.

## **Chapter 4**

### **Industries**

Tamil Nadu has a highly developed industrial base. Currently, it ranks third in industrial development among the major Indian states. During the Tenth Plan period, the industries (at 1999-00 prices) grew at 10.5 percent per annum as against the target of 7.12 percent. Although the Eleventh Plan has set 9.2 percent growth target for the industries, the actual growth is likely to be around 4.7 percent (at 2004-05 prices). Between 2006-07 and 2009-10, the share of industry in total GSDP declined from about 31 percent to 27 percent. It is a matter of concern that Tamil Nadu, a leading manufacturer in automobile, textiles, and hosiery and IT and ITES, has witnessed a slow pace of growth of the industrial sector during the Eleventh Plan period.

Some sectors of the manufacturing are doing well. Sectors like auto industry, textiles, pharmaceuticals, IT etc are also performing well. These successes provide insights into the sources of competitive advantage for Tamil Nadu industries that could be developed into a broader strategy applicable to larger parts of the industrial sector. With rapid changes in technologies in various industries and globalization within which domestic manufacturers must compete, the ability to engineer products quickly and at low cost is becoming an increasing source of competitive advantage. It is a leading manufacturer in automobile, auto parts, pharmaceuticals, and IT and ITES. It has a large number of technically skilled labor forces and produces large number of engineers. Taking advantage of domain knowledge built in these enterprises and using quality and low cost engineers, these firms can emerge as world leaders in frugal innovation and frugal manufacturing.

Tamil Nadu has many labor intensive industries like textiles, apparel and leather. These industries have been a good source of export earning potential. In

recent years, they face challenges due to WTO agreement (removal of quota) and environment regulations. It is essential to find solutions to overcome these issues.

Rolling out of adequate physical infrastructure support including power, railways, roads, and ports is important for the industrial development. Industrial development also depends on the spread and quality of infrastructure. Therefore, a separate (and specialized) institution is required for planning and facilitating adequate infrastructure in all regions of the state.

Power shortage is one of reasons for slow pace of growth of manufacturing during the Eleventh Plan period along with rising international oil prices. It is a major challenge to bridge the current power shortfall. Growing urbanization and location of most industries in developed (urban) areas put pressure on the urban services and urban infrastructure. Efforts should be made to promote industries in a decentralized way through appropriate incentives. Priority should be given to southern districts where industrial development has been lagging. Improvements in the connectivity in the southern districts, setting up of a southern gas grid to meet energy requirements along with planned activities like the setting up of industrial parks with private participation, need to be taken up.

Failure of manufacturing sector to meet expectations suggests the need for a radical change in the policy approach. The coordination challenge in growing the manufacturing sector is complex. The manufacturing enterprises require a wide range of inputs. Policies that favor one segment may harm another. Moreover, industries need more investments. To attract more domestic and foreign investments in such a competitive environment to improve the moment of growth, a comprehensive new industrial policy is required.

The MSME is a vibrant sector in terms of employment, industrial products and exports. The growth rate of MSME sector has outstripped the overall industrial growth in recent years. With its agility and dynamism, this sector has shown admirable innovativeness and adaptability to survive the recent economic downturn and recession. This sector absorbs technologies and improves

productivity most efficiently within industrial clusters. A strategy for growing innovative and competitive manufacturing enterprises in Tamil Nadu must be to stimulate the growth of dynamic clusters. Difficulties of acquiring land and inadequate infrastructure are serious handicaps for manufacturing enterprises. The clustering of enterprises along transport corridors and adjacent to ports, also enables the provision of good infrastructure to them. Other challenge is to provide more flexibility to employers to adjust employment levels, which also providing more fairness and security to employees.

The State has a long coastal lines and potential for ship building/breaking industry. There is international recognition for the Gems and Jewellery that are exported out of India. Tamil Nadu is an important player in this segment. Further, it has greater employment potentials. Creating Gems, Jewellery and Silver clusters will benefit. The decline in the number of khadi and village industries is a cause for concern since this has implications on rural employment prospects. Depletion of mineral resources is a great concern.

### ***Objectives***

Government's policy is "to maximize the welfare of the people of Tamil Nadu by creating gainful employment opportunities by achieving higher and sustainable economic growth with emphasis on balanced regional development through greater private and public investments in manufacturing and infrastructure development". The strategic objectives for the industrial sector should aim at the following:

- ◆ Make Tamil Nadu a global investment destination for automobile and auto parts, Textiles, Leather, Engineering goods, etc;
- ◆ Make the state a global destination of choice for IT/ITES industries so as to enable the state to attain first place in the country;
- ◆ Special emphasis on the newly emerging sectors like Bio-technology, Nano-technology and Pharmaceuticals;

- ◆ Attract investments in the ship building/breaking industry;
- ◆ Generate 15 lakh direct and indirect additional employment opportunities in MSME during the Twelfth Plan period;
- ◆ Enhance the competitiveness and scalable capacity of the MSME;
- ◆ Promote geographical strengths to achieve balanced industrial development.

### *Policy Measures*

The important strategies to be adopted to achieve the above objectives are as follows.

#### *(i) Policies*

- ◆ New Industrial Policy to facilitate investments and to regain the top-place;
- ◆ Specific policies for Bio-technology, Pharmaceuticals, Automobile, and Renewable Energy;
- ◆ A mutually beneficial and partnership based Land Policy for acquisition of land for industrialization;
- ◆ New e-Governance policy to enhance the productivity levels within Government.

#### *(ii) Infrastructure, Industrial Corridors and Clusters*

- ◆ “Infrastructure Development Board” to meet the future infrastructure requirements and attract private investments into infrastructure;
- ◆ Private public partnership in developing infrastructure; and up-grading existing infrastructures;
- ◆ Creating Industrial Corridors viz., Chennai-Sriperumbudur-Ranipet-Hosur and in less developed regions

- ◆ Industrial Corridors and new infrastructure in less developed regions of south Tamil Nadu;
- ◆ New (small) ports and Port-industrial corridor road connectivity;
- ◆ Promoting 'clusters'- Gen, Jewellery and Silver clustering;
- ◆ Augmenting power requirements and promoting non conventional energy, viz., solar parks;
- ◆ Engaging private sector in the mining of Granite and other minerals with condition that they must take responsibility for area development, employment, etc.

*(iii) Information Technology*

The Information Technology (IT) industry has become the most robust industry and one of the key drivers of economic growth in Tamil Nadu. The State has remained a favourite destination with excellent infrastructure and a large talent pool, sustained cost competitiveness and enabling business environment have helped in the establishment as the preferred sourcing destination. In the IT and ITES sectors, there are approximately 3,50,000 employees representing more than 1700 companies.

- ◆ Creating conducive environment for the multi-national companies and local firms to start IT/ ITES parks in all districts
- ◆ Aggressive marketing for allotting lands for attractive investments for IT/ ITES companies in Chennai and other Tier-II cities.
- ◆ Free distribution of Laptops to bridge the digital divide between students of the lower rungs of the society and those of economically well-off sections to develop their skills and improve the human resources
- ◆ Establishment of Rural BPO centers

*(iv) MSME, Handlooms and Power-looms*

- ◆ A major advantage of MSME is its employment potentials at low capital cost. It is a nursery of entrepreneurship, often driven by individual creativity and innovation. The creative industry (including advertising, architecture, art and craft, design, designer fashion, film and video, interactive leisure software, music, publishing, software and computer, TV and Radio) is considered as the engine of growth. Building the state as a creative hub is useful.
- ◆ Subsidy assistance to MSME setup in industrially backward areas; specific sub-sectors such as agro industries, sago, tea, and coir; and for technology up-gradation and modernization;
- ◆ Technological up-gradation or modernization to improve the productivity and develop the infrastructure in all areas, especially mills, power loom, pre-loom and post-loom processing;

*(v) Strengthening Industry-Academic Linkages and Technical Competence*

- ◆ Promote Industry-Academia-Government collaboration for Research and Development, Innovations and Diffusion of technology in MSME sector;
- ◆ Promote entrepreneur development and sector specific skill development training programmes for up-gradation of key sectors like automobile, IT, Textiles, Leather, Engineering goods, bio and nano-technology, pharmaceuticals etc., to match the skill needs in coordination with industry;
- ◆ Training in modern management and production techniques in arrangement with technical institutions and improving the skill of weavers and development of new designs.



## Chapter 5

### Infrastructure: Energy and Transport

#### Energy

Energy is a key input for the overall economic development. Tamil Nadu ranks third in terms of volume of energy sold and power generating capacity. It has the highest capacity of wind power and has been in the forefront of rural electrification. Its aggregate technical and commercial loss of 18.5 percent is one of the lowest in the country. The state witnesses a power shortfall, ranging 2500-3000MW.

The Eleventh Plan has targeted creation of 7808 MW of additional capacity. The actual capacity addition of conventional energy source is only 115 MW. Although the wind energy capacity has increased significantly, the wind energy is seasonal and almost non-existent during peak demand months.

The gross energy consumption has grown at 6.2 percent per annum during 2004-05 to 2010-11 and the implicit elasticity with respect to GSDP is only 0.7. It is projected that in order to sustain 10 percent GSDP growth, the demand for power will grow by about 7 percent during the Twelfth Plan period. In such case, at the end of Twelfth Plan, the power consumption is likely to be 1.15 lakh MU. Unless the state becomes power surplus, it will be difficult to attract of industrial investments and accelerate the growth.

Currently, the share of renewable energy is 40 percent of the total grid capacity. The capacity addition made in 2010-11 was 1315 WM. Tamil Nadu still has rich potential of tapping renewable energy. Many global players already build their plants in Tamil Nadu. The state is also generating third largest amount of biomass energy. With these, Tamil Nadu becomes the biggest renewable energy state in the country.

Due to higher energy demand in the last few years mainly because of rapid growth of industries and urbanization and uncertain wind power generation, the state has been facing power crisis. This insists that both short term and long term energy requirements must be identified. Tamil Nadu has a very good solar energy potential with 300 clear sunny days. This source is yet to be utilized properly. As the wind energy is highly variable and there is a risk of sudden drop of wind energy in some months, there is a need to keep a buffer. All the issues relating to renewable energy, can be addressed by a new renewable energy policy. As per the recommendation of India Government, all power plants have to generate 3 percent green power plus bonds issues against revenue its tradable. Therefore, we need to encourage PPP's and set up about 200 plants of 18-20 MW capacities each on biomass. Power can be sold on tariff basis and plants can be established on B.O.T basis. Advantages of bio-mass plant are as follows. (i) Solve the power crises to a large extent as currently we depend on coal, which is becoming more and more difficult to source; (ii) Create rural employment; (iii) increase agriculture income by selling casuarinas, Julia flora, cheap woods, and coconut shells; (iv) Connect directly to rural feeder to be established; (v) Julia flora can be grown in dry poramboke lands that are available in huge amounts with no extra water is required other than rainwater.

AT&C loss is till high at 18.5 percent as against the Eleventh Plan target of 15 percent. Efforts are needed to reduce it further. Steps are also needed to prevent/detect energy theft. Tamil Nadu has unbundled generation, transmission and distribution. Like other states like Andhra Pradesh and Karnataka, a further split of distribution along district lines will be useful.

Due to the shortage of coal, currently the coal is imported. Given the strong growth in thermal generation projected in the Twelfth Plan, the aggregate demand for coal is expected increase further. Coal imports will be much more expensive and power producers will be reluctant to accept a fuel supply arrangement based on imported coal which will place them at a disadvantage. There is a need to

develop a mechanism to enable power producers procure a mix of domestic and imported coal consistent with their technical constraints.

Tamil Nadu Generation and Distribution Corporation Ltd (TANGEDCO) has accumulated huge losses (Rs. 38000 crore) and its outstanding debt amounts to Rs. 45000 crore. If the TANGEDCO is unable to pay the private generators, it is a disincentive for private players to invest in the state. Unless the financial health of the TANGEDCO is restored, it may not be able to invest in new projects and improve the transmission and distribution infrastructure.

### ***Objectives***

In order to achieve the Government of India's plan to give "Power for all by 2012" the state is making progress in generation, transmission and distribution sector. It has completed the electrification of all villages and towns in the state and also is progressing towards electrification of all households. The strategic objectives for the energy sector should aim at the following:

- ◆ Make Tamil Nadu a power surplus state again
- ◆ Improve energy efficiency in the energy consuming sectors
- ◆ Provide access to electricity to all rural households
- ◆ Reduce AT& C losses to below 15 percent
- ◆ Harness the under utilized/untapped potential of renewable energy sources
- ◆ Encourage the commercialization of renewable energy technologies and devices

### ***Strategies***

The following strategies are essentials to achieve the target.

#### *(i) Policies*

Renewable Energy Policy to address all issues relating to renewable energy; Policy reforms to further unbundling of distribution at more decentralized way; Solar Power Policy; Sustainable Energy Security Policy in villages

*(ii) Capacity Addition*

- ◆ Taking up new projects-North Chennai Stage III and IV, Udangudi project and its expansion, Ennore Annex, Kundah Pumped Storage, Uppur thermal power project, ETPS replacement, Tuticorin stage IV, Cheyyur Ultra Mega Power Project etc.
- ◆ Speeding up and expediting the completion of on going projects-North Chennai Stage II, Mettur State III, TNEB-NTPC JV Vallur, TNEB-NLC Tuticorin JV, Kudankulam, PFBR Kalpakkam, Neyveli TS-II Expansion etc.
- ◆ Exploring the possibility of adding 10000 MW wind energy through various promoters; Setting up offshore wind power plants;
- ◆ Setting up of Solar Parks;
- ◆ Attract private investments on a commensurate scale;

*(iii) Transmission and Distribution*

- ◆ Enhancing transformer capacities in the existing sub stations;
- ◆ Bifurcation of high tension overloaded feeders and installation of capacitor banks at distribution transformers for injection of reactive power;
- ◆ Conversion of low voltage lines to high voltage lines along with feeder separation to reduce the distribution line losses;
- ◆ Segregation of agricultural loads from industrial, commercial, and domestic loads;
- ◆ Adequate transmission network to evacuate the power generated from new plants and to distribute the customers;

*(iv) Energy Conservation*

- ◆ Implementing Bachat Lamp Yojana (BLY) scheme to increase energy efficiency in domestic sector;
- ◆ Improve the efficiency of the agricultural pump sets using appropriate incentive scheme;
- ◆ Solar powered home lighting in 3 lakh Green houses; 1 lakh street lights through solar power;
- ◆ Energy conservation building code; Energy Star Labeling in Equipments

*(v) Fiscal Health of Power Sector*

- ◆ Make the distribution system financially viable during the Twelfth Plan by rational pricing, bringing modern systems of management, use of IT, enforcement of accountability and privatization or franchising.

**Roads and Transport:**

An efficient, reliable and safe transport system is vital input for the overall economic development. Tamil Nadu has a road network of 2.02 lakh kms (and 1.18 lakh major and minor bridges and culverts). The density of road network in the State is 280 km per lakh population and 156 km per 100 square km area (against the All India average of 103 km). The State has a rail network of about 4200 km. It has 1076 km coastline. There are three major ports (Chennai, Ennore and Thoothukudi) and 22 minor ports (some of them not yet commenced their operations). There are five airports. It has two navigational canals-Buckingham and Vedaranyam, identified as Inland water Transport systems. However currently they are not functioning effectively.

As the road network gives connectivity to all habitations and modes of other complementary transport systems in the State, efficient roads are vital to the performance. In fact, highways carry 90 percent of passenger traffic and 65

percent of the freight traffic. The State transport plays a vital role, providing a variety of services viz., Town, Mofussil, Ghat and Express services. Due to increased urbanization and exponential growth of vehicles, road infrastructure deficit continues and there is an enormous demand for dependable urban mass transit.

International trade volumes have been growing faster than GDP and will continue to do so indicating the need to build adequate capacity in the ports. Further appropriate linkages between ports, industrial corridors, railways need to be completed. To meet these expanding demands large investments will be needed in roads and ports for the augmentation of capacities and modernization. Since resources needed are much larger than public sector can provide, public investments need to be supplemented by private investments, in Public, Private Partnership (PPP) mode.

To increase the quality and efficiency of highway system, it is necessary to maintain and upgrade existing road net works. In view of safety of road users (still number of fatalities are high), it is necessary to identify several critical junctions as block spots. Efforts are needed to improve the road conditions and to reduce the road accidents.

### ***Objectives***

The State's vision is "to increase the capacity, connectivity, efficiency and safety of the highways system" and "to improve the level of transport service to the public". The state has already provided link roads to all the habitations with more than 1000 population and now is making progress in covering all habitations with 500-1000 population. The strategic objectives for the transport sector should aim at the following:

- ◆ Focus on laying quality roads;
- ◆ Create awareness about road safety and road design interventions to avoid accidents;

- ◆ To provide better road connectivity to rural roads
- ◆ Promote public transport system
- ◆ Development of minor ports along the east coast through PPP;
- ◆ Modernize and expand the airports in the state

### ***Strategies***

The strategies proposed to achieve the above objectives are as follows:

- ◆ To improve the 'Road Capacity' by providing additional connectivity and upgrading roads, widening the roads, formation of Bypasses, constructing of ROBs/ RUBs and bridges.
- ◆ To improve the 'Road Quality and Efficiency' by obtaining feed back from public representatives and road users, analyzing and prioritizing the list of works to be taken up for improvement through Road Management System (RMS) and Strategic Option Study (SOS), standardizing and computerizing all the processes like traffic surveys, designing etc.
- ◆ Reduction of casualty due to accidents and improvement of accident prone spots by evolving road safety action plan
- ◆ To improve the level of transport service to the public by introducing new buses.
- ◆ To integrate the existing public transport with the Chennai metro.
- ◆ To establish an elaborate Mono Rail Network connecting various parts of Chennai.
- ◆ To introduce E-ticketing through Online Ticketing Reservation System (OTRS).
- ◆ Improvement of the roads connecting industrial areas and ports for the development of industries

- ◆ Development of all the minor and intermediate ports in the state through Public Private Partnership with a view to create multi-user facilities capable of handling all types of cargo
- ◆ Construction of jetties both captive and commercial for port based industries

## **Chapter 6**

### **Urbanisation**

#### **Opportunities and Challenges ahead**

As per the 2011 Census, the Tamil Nadu is most Urbanised State with its urban population 48.45 percent. There are 10 Corporations, 150 Municipalities and 559 Town Panchayats in the State. Rapid urbanisation has created huge challenges as well as opportunities. Quick expansion of the cities, necessitated the improvement of the basic amenities like Housing, Water Supply, Sewerage, Sanitation, Solid Waste Management (SWM), Roads, Street lights etc., In order to reap the benefits of the economic opportunity by all the sections of the society, sustainable infrastructure development and targeted poverty reduction in the urban areas are necessary.

As more population will inevitably live within urbanized conglomerations, with densification of villages, sprouting of peri-urban centres around large towns, and also migration of people into towns, the quality of their lives and livelihoods will be affected by the infrastructure of State's urban conglomerations. The infrastructure of State's present towns is unsatisfactory. Water, sewage, sanitation, roads, and housing are woefully inadequate for their inhabitants. The worst affected are the poor in the towns. As more urban conglomerations form and grow without adequate infrastructure, the problems will only become worse. Therefore, Tamil Nadu's Urban Agenda must get much more attention.

#### **Approach and Strategies for Managing Urbanization**

The Government has established an 'Urban Development Mission' for all Corporations, Municipalities and Town Panchayats and also aims to improve rural amenities to match urban standards. Considering the importance of urban infrastructure, it is proposed to implement two new special programmes viz., "Chennai Mega City Development Mission" for Chennai and its sub urban areas,

and the “Integrated Urban Development Mission“ for all other Corporations, Municipalities and Town Panchayats. It is hoped that the Missions will ultimately achieve the objective of developing urban areas into sustainable cities and ensure equitable benefits to all the sections of the society. Since faster economic growth and inclusive growth are key objectives, Urban Development Management can be a key vehicle for achieving this objective.

Project formulation, conceptualization, financing and implementation are all challenges with regard to urbanisation. Tamil Nadu has met these challenges through innovative means including the Tamil Nadu Urban Development Fund (TNUDF), which was model for the Jawaharlal Nehru National Urban Renewal Mission (JNNURM). The JNNURM has provided necessary funding for the infrastructure development in the Mission cities of Chennai, Madurai and Coimbatore. The Scheme is being completed as on 31st March 2012. Achieving financial sustainability through own resource mobilization of city level governments has been an important objective of JNNURM, which must be considerably strengthened in the Twelfth Five Year Plan period and guidelines of the programme must be modified allowing greater flexibility to the States to implement schemes based on local needs and capacity differentials. The JNNURM II must provide, in addition to enhanced funding, greater technical support and up gradation of implementation capacity, particularly for Wastewater and Solid Waste Management.

Fundamental to this objective and to raise livability in the city, given the rapidly rising traffic intensity, the Government has proposed to introduce a Monorail System integrated with MRTS (Mass Rapid Transport System) and Metro Rail for Chennai. Monorail will also be introduced in the second-tier cities where the traffic intensity is at a rise. This will raise the modal share of public transport from 27 per cent to around 46 per cent eventually.

Priority will be given for the strengthening of Preventive Health Care in the urban areas. The measures may includes, strengthening preventive healthcare

system including 100 per cent vaccination, safe drinking water, management of MSW (Municipal Solid Waste) and ambient air quality and aggressive control of vectors that cause diseases. The National Urban Health Mission shall be considered to meet these objectives. Strengthening of secondary and tertiary health care system in urban areas using PPP (Public Private Partnership) model involving Private and Corporate hospitals along with the Government sectors wherever possible has to be explored. Under the guidance of National Urban Health Mission, to improve the health facilities in urban areas, one 24 hours Urban Health Centre shall be created on every 50,000 population.

Urbanization creates challenges in provision of potable Drinking Water for the millions and also in safe disposal of the sewage. In this regard, concrete action plan for provisioning of “lifeline supply” to the urban population has to be contemplated along with augmenting the water supply. This may involve strengthening and re-launch the campaign for Rain Water Harvesting systems, explore new water sources including desalination, augmentation and improvement of water bodies, recycling and use of waste water, etc. In order to assure the quality of drinking water the quality has to be checked at the water sources, water treatment plants, water distribution stations and importantly consumer end.

Currently, only the select cities in the State have modern Underground Sewerage System to treat the sewage. It is the endeavor to build modern underground sewerage system for all the ULB in phases, by resorting to innovative ideas to carry out this massive programme. During the Plan period, developing an integrated approach to domestic water management will be focused. Apart from this, localized waste water system will also be encouraged.

Solid Waste Management remains a challenge for the Urban Local Bodies (ULB) in collecting and safely disposing the garbage. Special thrust will be given to modernize the Solid Waste Management (SWM) system in the ULBs by evolving an action plan including the development of regional landfills to tackle this problem in an integrated manner. As the Solid Waste Management is an obligatory function

of the Civic Local Bodies, special emphasis is being made on the implementation of the “Municipal Solid Wastes (Management & Handling Rules, 2000)”. In the case of MSW management, major requirements is the acquiring land for land fills, upgradation of landfills and creation of waste processing sites. It is also proposed to encourage creation of self sufficiency in waste and resource management.

Electricity generation from incinerating biomass is increasing throughout the world. The market driver for this increase is the global development of renewable energies. Biomass is, in contrast to water, wind and sun, the only renewable energy source that does not depend on the weather and guarantees a continuous energy generation. Measures will be taken to encourage energy through biomass.

Tamil Nadu has been a pioneer in many fields of Sanitation. In the recent past, there have been several gaps in the field of sanitation and today the State is lagging behind many other States in the field. The Government wants to be a pioneer State in “Ecologically Safe Sanitation”. Thus not only a “Green State” but also a “Clean State”. Open defecation is a major problem due to lack of basic amenities in the slum areas. An appropriate strategy has to be worked out in this regard and provide the infrastructure in phases to cover to make the State “Open Defecation Free” State. The improvement in the sanitation facilities to cater to the increasing urbanization would in turn improve the general hygiene and environment of the urban areas.

Another biggest challenge of the rapid urbanisation is the availability of affordable Housing in urban areas. Tamil Nadu has been following its housing policy by creating conditions conducive to the provision of quality housing at affordable cost especially to the economically weaker sections by regulating and encouraging developments through planned inclusions and balanced growth. With a view to encourage and facilitate private partnership in the development of economically weaker sections, the Government has incorporated enabling provisions in the regulatory framework by making it mandatory for developers to provide 10 percent of the developed area for the Economically Weaker Sections.

The Government would involve the various stakeholders in the provision of housing at an affordable price through facilitation and regulation of the housing services. Further the concept of 'Green buildings' will also be encouraged during the Plan.

Various development departments like Tamil Nadu Electricity Board, Municipal Corporations / Local Bodies, TWAD Board, Chennai Metropolitan Water Supply and Drainage Board etc. have engaged in various developmental activities. Efforts will be made to map out linkages between different institutions for creating an institutional mechanism for convergent decision making which take into account the concern regarding environmental sustainability.

Rapid urbanization is also contributing to increase in Urban Poor. In this regard, various services for the urban poor will be integrated and a targeted approach will be introduced to tackle urban poverty and to improve the quality of life for the poor.

The Urban Slums are typical centres of irregular and unsafe housing, unhygienic and in sanitary surroundings without even the basic civic amenities for healthy living such as safe potable drinking water, electricity, solid waste disposal, etc. It is estimated that 13.98 lakh families are living in urban slums in Tamil Nadu. The slums in cities are also associated with higher levels of poverty, unemployment or under employment, crime and breeding ground for Juvenile delinquency, which are both the cause and effect of the sub-optimal living conditions in the slums. The vision is "Housing for all" includes slum housing also and the whole focus is directed towards "Affordable Housing". The condition and needs of the most vulnerable urban citizen i.e. Urban Slum Dweller must always be kept in the forefront in urbanization. The urban slum development will be complete only, if the urban slum families attain economic empowerment. They may be imparted skill training on a wide range of contemporary occupations to enable them to earn for their livelihood.

The Land Use Planning and Development Regulatory Bodies in Tamil Nadu work towards the harmonious development of the State as per planning norms and parameters, by land use regulations through the preparation and implementation of Master Plans and Detailed Development Plans (DDP). The Plans take into consideration the need for the provision of effective road network, fixing alignments of Bye Pass Roads, Ring Roads etc. The regulatory bodies also take up several initiatives to improve Traffic and Transportation by creation and upgradation of infrastructural facilities. The thrust would be now for covering more areas for the preparation of City Development Plan (CDP) and the focus would be towards an outcome-based approach that is based on service level delivery rather than an approach that focuses only on investments and asset creation.

Disaster Management Authority will be evolved to render emergency help to the people in storms and floods, cyclone, Life threatening emergencies etc.

Decentralisation of Municipal Governance and greater reliance on institutional financing and capital markets for resource mobilization are likely to increase the disparity between the larger and smaller urban centers. The ULB has to be made into self-reliant institutions of local governance. The financial base of the Local Bodies will be strengthened through 4th State Finance Commission. The objective of developing urban areas into sustainable cities and ensure equitable benefits to all the sections of the society. A satisfying outcome will depend on the formulation of effective public policies to accelerate all-round development of both larger and smaller urban centres, with all basic necessities and to refashion the role of the State as an effective facilitator to compensate for the deficiencies of market mechanisms in the delivery of public goods.

The strengthening of governance structures, also needs to address the enormous weakness in the capacity of human and organisational resources, The investment requirements for delivering necessary infrastructure services in urban areas are huge. A massive push is needed to attract private investment in all areas of urban infrastructure, both for large infrastructure projects and in bulk

water supply, waste water-recycling, treatment of MSW and treatment or urban sewerage.

## **Chapter 7**

### **Education, Skill Development and Employment**

#### **Education**

The Right of Children to Free and Compulsory Education (RTE) Act, 2009, in force from 1st April 2010, which provides free and compulsory education to all children in the age group of six to fourteen years in Tamil Nadu is in line with the Central Act. Tamil Nadu has taken efforts to provide universal schooling access to all children by achieving universal enrolment and 100 % retention in primary education. Sarva Shiksha Abhiyan (SSA) is a mission for universalisation of elementary education, and the State was able to achieve universal access in primary education in all Districts of Tamil Nadu. Rashtriya Madhyamik Shiksha Abhiyan (RMSA) is a Centrally Sponsored Scheme to achieve the Universalisation of Secondary Education i.e. Standards IX and X. Its vision is to make Secondary Education accessible of good quality and affordable to all

The Vision of the State Government is to bring about all-round and holistic development - physical, Social, emotional and intellectual of children by achieving universal enrolment, retention completion with focus on quality education. The objectives of School Education is to make "Nature, Future and Culture" as part of the curriculum and to provide a curriculum/syllabus in consonance with National Curriculum Framework (NCF) 2005. with special emphasis, to enable students to grow into citizens respecting democratic and constitutional values, to make all schools conform to a commonly acceptable minimum standards in provision of infrastructure facilities, viz classrooms, laboratory, library, Computer Lab, play facilities, compound wall, toilet, water, teaching learning equipments etc, to have stress - free, creative, meaningful evaluation system by implementing Continuous and Comprehensive Evaluation (CCE) System, to recognize the home

environment and traditional knowledge acquired by the children as a treasure of knowledge and learning and to make Schools as "Green Campuses".

Providing nutritious breakfast to all children in addition to the noon meal already provided. Providing educational Kits - school bag, geometry box, scale, handwriting notebook, drawing book, atlas, crayons, and dictionary, Establishing Mother-Teacher Association in every primary and middle schools. Activity Based Learning for primary classes and Active Learning Methodology for upper primary classes will be strengthened. In order to promote girls' education, girls' hostel will be opened on Kasturba Gandhi Balika Vidhyalayas (KGBV) model. Computer Aided Learning for all subjects in all schools. Integrated Science Laboratory, the existing Laboratory facilities will be strengthened in all high and higher secondary schools. Library will be opened in all schools; Model schools will be established under public-private partnership and main focus on inclusive education with Disability Redress centre in each block.

The vision of the Government of Tamil Nadu in the realm of Higher Education is to make institutions of higher education emerge as centers of innovation, excellence and Research & development. The major focus is on quality and to promote Human Resources Development through self -actualized Institutions; producing high quality ethical professionals in sufficient number to make this State and Country prosperous and to make Tamil Nadu a global hub for University Education. The other main objectives are to achieve Higher Education Gross Enrolment Ratio of 25% by 2025 and to make Colleges and Universities as "Green Campuses". The Government has chalked out to revitalize Higher Education to grant autonomy to Higher Education institutions to choose their courses and syllabus to meet the global Human Resource demand, to revitalize and reorganize the State Level Accreditation institution with international standards to rate Universities and Colleges, to streamline the appointment of Vice-Chancellors. Universities and Colleges will be judged based on their performance in the area of curriculum, courses to keep abreast of the latest world trends in

pedagogy, research, infrastructure including IT infrastructure, proper, efficient and transparent administration and management based on e-governance; to attract and retain world class talent to make the administration smart and transparent to the Universities and Institutions, in order to concentrate on academic and on Research & Development activities. An “Internal Quality Assessment Cell” will maintain an annual database for faculty members and institutional performances. Based on their rating by the accrediting bodies, private institutions can charge their fees. Government institutions shall levy fees at a nominal and subsidized rate.

In the USA, there are “For Profit” higher education institutions. There are private universities with a reputation for excellence like the George Washington University. The twelfth Plan discussion features giving an opportunity to such education providers. This opportunity can be explored at least for vocational and professional education. Students from economically weaker sections will have to be charged at lower rates and to enable Distance Education courses run by Universities to adopt IT based e-governance with cloud computing. Anna University will emerge as a centre of excellence. There would be emphasis on nano-technology, molecular biology etc which are the latest fields. University based Research & Development facilities and necessary fund allocation for Infrastructure and Development are to be addressed in the Twelfth Plan period. Industry-Institution collaboration is to be strengthened. The National Vocational Qualification Certificates (NVQCs) can also be conducted through the Tamil Nadu Skill Development Mission. To achieve an NVQ, Candidates must prove that they have the ability (competence) to carry out their job to the required standard. NVQs are based on National Occupational Standards that describe the “competencies” expected in any given job role.

### **Enhanced Skill Training & Faster Generation of Employment**

Tamil Nadu is a progressive and industrially developed State with a strong work force. There are 38,601 industrial units in the State. With a rapid industrial growth, there is a shortage of skilled manpower. The Confederation of Indian

Industry (CII) report on Tamil Nadu has estimated that, by the year 2015, incremental skilled manpower requirement of the State will be about 130 to 150 lakh mainly in areas of manufacturing, textiles, automotive, retail, IT, electronics, banking and financial sectors. National Association for Software Services Companies (NASSCOM) estimates that only 20% of the 3.5 lakh graduates coming out of the colleges every year are employable due to poor soft skills including communication and computer knowledge. To address this problem, the State Government has initiated the Tamil Nadu Skill Development Mission (TNSDM) through which partnership with industries to identify skill gaps will be established and training will be imparted to the students of Arts and Science Colleges and Industrial Training Institutes (ITI). At present, there are 1,318 Arts and Science Colleges, 491 engineering and 432 Polytechnic Colleges and 62 Government ITIs, 654 Private ITIs, and 987 Industrial Schools functioning in the State. Also in the traditional sectors in rural areas, skill development is necessary to improve Wage employment and halt their migration to urban areas.

Government of India had introduced the Scheme of “Modular Employable Skills” from April 2007 by utilizing the existing infrastructure in I.T.Is, and it bears the cost of training for effective implementation and monitoring at the State level MES Cells are to be formed. It is proposed to start a Staff Training Academy to give orientation / refresher training to the instructional staff of Government I.T.Is as well as Private I.T.Is to improve the standard of training and to bridge the mismatch between Vocational training and the market demand. According to the modern trend and change in technology, the National Council for Vocational Training (NCVT) is reviewing the syllabi of trades periodically and brings out changes in the curriculum in consonance to the advancement of technology.

The new scheme “New Initiatives in Skill Development” has selected Tamil Nadu as one of the States to initiate a pilot project for setting up of Skill Development Centres (SDCs) The industrial partner or the training institute will run the courses in the selected demand driven modules. In order to instill a sense of

pride in skilled persons and to give them Government recognition, a smart card system may be introduced. This system will definitely attract youngsters to join the pool of skilled work force and will give them a sense of pride. A faculty Training institute may be set up in the state in Private-Public Partnership (PPP) mode to ensure large pool development of high quality trainers across the state. Faculty development in growth sectors like Automotive, manufacturing & electronics may be given focus initially. At present there is no mechanism to have data base of skilled manpower in Tamil Nadu. Skill Registry will allow capturing and monitoring of skill data. A unique world class training institute with foreign Government collaboration on Hi-Tech trades with a willing Industry partner in PPP mode may be started in the state. Inter-District variations in Human Resource Development are needed to be addressed. Backward Districts has to be identified and study the gaps in equity.

The Twelfth plan should focus on promoting lifelong skill learning, maintaining quality and relevance according to changing requirement. A large scale skill development is an imminent imperative by harnessing the demographic dividend through appropriate skill development. In collaboration with Industries, Finishing Schools are needed to be set up at least one in the Regional level. This Finishing School will try to fill up the skill gap. The private employer incentive scheme and the stipend scheme for the trainees are needed to be introduced with some attractiveness in skill training programmes. It is proposed to start additional units in these trades in all 30 Government I.T.Is with the required infrastructure. In order to meet the Industrial needs, new trades like Interior Decoration & Design, Financial Services, Retail, Marine Fitter, Architectural Assistant etc, are to be started in Government I.T.Is.

In a pioneering initiative, the Government is providing free laptops to students of government-run and government-aided higher secondary schools, arts and science colleges, engineering colleges, and polytechnic colleges and designed to give a major boost to Information Technology literacy. The free laptop

scheme could open up a whole new world of knowledge-based opportunities to a generation of students who hope to do well in higher education and then in the job market. Totally 68 lakh students will be covered at an estimated cost of Rs.10,200 crores over five years. The Government has already launched the scheme in the State and for the current year 9.2 lakh laptops will be provided to the students of the lower rungs of the society with an allocation of Rs.912 crores.

There are 37 Employment exchanges including 5 special offices are functioning for the job seekers in Tamil Nadu. As on 30.6.2011, 71.71 lakh candidates are waiting on the Live Register of Employment Exchanges in Tamil Nadu. It is not possible to any Government to accommodate all the registrations in Government services. The rest of employment is available in Private Sector. To keep with ICT trend, Online Registration was introduced through a new portal for the employment exchanges in Tamil Nadu. The renewal and registration are now done through online. The employment services should offer effective placement services for the youth of the State. The placement services through limited in public sector are wide open in the Private Sector. It is necessary to synergize the potential in Private sector, by establishing proper liaison with various Industrial Units including the Micro Small Medium Enterprises (MSME) and tiny sector.

A complete network with the public and Private Institution making them as social partners for effective services. Special emphasis on Vocational guidance activities in the semi urban and rural areas. Use of innovative Information and Communication Technologies (ICT) initiatives for the benefit of youth cutting cost and time in search of information pertaining to education and employment. Regular publishing of employment market reports with adequate information on market trends for the benefit of employers and youth. Transforming the entire delivery system through ICT initiatives. Strengthening of core competencies of employment services in the State. Introducing the capacity building programmes for all officials at regular intervals to face the challenges before them and

strengthening the delivery systems of employment services wherever possible through ICT initiatives.

### **7.3 Labour Welfare and Labour Policy**

This approach of the Government towards the maintenance of peaceful industrial relations effectively combines the need for rapid industrial development of the State with an abiding concern for the well-being of the work force. This Government has formulated schemes which would improve the living conditions of the worker in the unorganized sector and constituted unorganized Welfare Boards to administer the schemes. The pragmatic approach of the Government towards industrial relations, combining effectively the need for rapid industrial development of the State and well-being of the work force has lead to healthy industrial climate in this State. The policy of the Government is to have special focus on 'Labour Welfare' and in particular the unorganized sector. To ensure their welfare, Government have constituted separate welfare Boards for various employments in unorganized sector.

The total number of workers in the State is 2.79 crore (2001 Census). About 92% of them (i.e.2.57 crore) are in the unorganized sector. The Tamil Nadu Labour Welfare Board provides welfare services to workers in the organized sector. The Tamil Nadu Government has so far established 34 Workers Welfare Boards. Of these, the following 17 unorganized welfare boards are functioning in Tamil Nadu. The Government is enforcing effectively the Labour Legislations with a noble task of protecting the organized and unorganized workers. The Government is to take care of effective implementation of Minimum wages act 1948, conditions of Contact labour Act, 1970, conditions of interstate migrant labour, eradication of child labour and welfare of unorganized labour and implementation of 17 Factories Act etc.,

#### ***Strategies***

Contract labour Act may be amended with a view to prohibit employment of contract labour in core activities of an establishment and to allow engagement of in non-core activities such as watch and ward, sanitation etc. They need not be abolished in core activities of an establishment. In order to extent the legal protection and welfare measures under the Act to more number of contract workers, the act may be made applicable to establishments employing 10 or more contract workers or contractors employing 10 or more workers. Obligation may be placed on the principal employers to give preference in regular employment to the contract labour employed continuously for sufficient duration.

The cause and effect relationship of interstate migration should be addressed. Minimum Wages Act should be enforced strictly . Creating a sound mechanism to trace, track and follow up with the labour that migrates within the State and to the other states. Strict enforcement of the Inter-state Migrant Workmen (Regulation of Employment and Conditions of Service) Act 1979 and Tamil Nadu Rules, 1983. The rate of intra-State and interstate migration needs to be watched and database has to be created. A special focus has to be given to put a system in place to protect the interstate and intra state migrant workmen also. Work place security for women has to be ensured by creating all basic Infrastructure facilities such as toilet, accommodation etc.,

Total eradication of child labour and making the State “Child Labour Free” is the cherished goal of the State. The State Action Plan for eradication of child labour formulated in 2003 needs to be revised in the context of “Right of Children to free and Compulsory Education, 2009”. A survey on child labour might help to know the exact number of children employed in labour force and to address the problem effectively. The enforcement in the field of eradication of child labour has to be intensified. The parents of child labour may be covered by poverty alleviation schemes of the districts. Awareness on eradication of Child Labour may be generated among the public.

Disbursement of Welfare Assistances to unorganized labours directly to the Bank Accounts of the beneficiaries through Electronic Clearance System (ECS) and Issue of Biometric Identity Cards to the unorganized workers are registered with various boards. A study will be taken up on welfare schemes implemented for unorganized workers in other states and introduce new schemes different from the existing ones, if they have been found to be successful in other states. To the 'Swavalamban Scheme' introduced by the Government of India and, with the approval of the Tamil Nadu Government, encourage the unorganized workers to voluntarily participate in the scheme, so that the financial burden of the State in providing pension to unorganized workers in future would significantly be reduced.



## Chapter 8

### Health and Nutrition

The main aim of the public health is to make available a system of health care which is comprehensive, universal, transparent, accountable and participatory that delivers quality, rational, appropriate care, with protection of patients rights, patients choice and health equity, that is non-exclusive and non-discriminative, that is portable ensuring continuity of care with inter-sectoral support.

Maternal and Child health: Tamil Nadu is a fore runner in some of the vital indicators among the various States of India. As against an Infant Mortality Rate (IMR) of 50 per 1000 live births and Maternal Mortality Ratio (MMR) of 212 per lakh live births at the all India level, the State has already reached 28 per 1000 live births and 80 per lakh live births respectively. 99.8% of all deliveries in the State are conducted in institutions by qualified and trained personnel. The State is fast emerging as good public health model for the rest of the country especially for maternal and child care. Various policy initiatives such as 24 hours delivery care service in the Primary Health Centres (PHCs), up gradation of existing PHCs to a 30 bedded hospital with basic amenities and modern equipments in each block, provision of Comprehensive Emergency Obstetric New Born Care (CEmONC) services in the govt. hospitals, birth companion programme, maternal death audit etc. have been responsible for the consistent excellent performance of Tamil Nadu in this field. Continuous immunization awareness and tracking for children and adults would be undertaken as a preventive measure.

The vision of the Twelfth Five Year Plan is ensuring the quality of health care services provided in the public sector making them more user friendly. The existing management of the health care facilities will be improved and

strengthened and made more accountable to the people for a system of health care delivery that focuses on Hygiene and nutrition needs and health Education.

### ***strategies***

#### *Medical Education*

Efforts would be taken to strengthen the quality of medical education in the state by ensuring that all medical colleges will have formal linkages (or be affiliated) with district hospitals, taluk hospitals or other community hospitals for supporting clinical service, referral system and training. Steps will be taken to strengthen the infrastructure facilities in the Primary Health Centres located in urban areas. Medical colleges will also be responsible for health services of a defined population or community including tribal / underserved areas in their vicinity. Focusing the concept of family physicians as a specialty, steps would be taken to start a Department of Family Medicine in each medical college aiming to offer training programmes progressively involving students at the primary and secondary levels. They would be trained in providing health education to patients, their families and the community emphasizing health education, hygiene and nutrition. Aptitude should be an important aspect of the selection process for Medical Education. Medical ethics is now theoretically part of the curriculum but only observing the actual 'praxis' of ethical medical practice that can impart the concepts of gender equality, health equity, and the rights based approach to health and medical care. Laws such as the PNDT Act etc. are required as conscience is not involved in the use of technology

#### *Communicable diseases*

Malaria, dengue, diarrhoeal diseases, etc., are related to poverty, sanitation, environment and education. Treatment for Tuberculosis especially abdominal TB needs special attention as it can lead to infertility in the female. The long term morbidity of the newer infections such as H1N1, SARS, dengue, etc. needs active disease surveillance and monitoring system.

#### *Non communicable diseases*

The incidence of non-communicable diseases – life style diseases like diabetes, hypertension, cardiovascular diseases and cancer is on the rise in Tamil Nadu, and is emerging as a major cause of morbidity and mortality. In the case of infectious diseases control of communicable diseases, especially the newly emerging vector borne diseases with increased surveillance and prevention activities will be undertaken to improve the existing health care. The Central Assistance will be sought for, so that the Central Assistance under various health programmes will be enhanced considerably during the Twelfth Five Year Plan.

The centrally assisted programmes that need to be engendered are the;

***National Mental Health Programme***

Sub clinical mental ill health in women and personality issues, if addressed can improve well being and quality of life of women and others in the family. The contribution and role of clinical psychologists and psychiatric social workers in this regard needs to be stressed. Adequate facilities for management of women with mental ill health are obviously lacking and this facilitates exploitation of these women. Absence of attention to preventive dimensions of mental health, particularly when faced with the responsibilities of adjustment in the marital home, child and family care with inadequate support also affect women.

***National Programme for the Health Care of the Elderly:***

Menopausal & older women need access to multi-disciplinary integrated public health services with specialist women-friendly medical treatment to improve quality of life & health.

***National Programme on prevention and control of cancer, diabetes, CVD and stroke (NPCDCS)***

The almost inverse relation between poverty and ill health is replaced in those of the higher income groups with an almost direct relation between wealth and ill health with regard to chronic disease giving rise to the double burden of disease. This ill health that usually consists of chronic disease can also drive those

in the higher income bracket into financial crisis. Thus the need for affordable health care with emphasis on the prevention and early detection of diabetes, thyroid dysfunction, hypertension, etc., and other life style diseases is of prime importance. This is the first attempt after many decades to introduce a comprehensive health care rather than the usual trouble shooting. This is also the first time an attempt is being made to actually introduce a policy on cancer into the health system. The attempt has serious implications with regard to possibilities of prevention and early detection and diagnosis of cancers that occur only in women i.e. cancers of the female genital tract – i.e. mainly cervix and breast besides of course the tobacco related cancers. Since 70 percent of various types of cancer patients seeking treatment in an advanced stage, steps will be taken to establish one early Cancer Detection Centre in each district with the entire necessary infrastructure. An idea of establishing State Cancer Registry, which does not exist anywhere in India will be conceptualized and implemented step by step with in the span of the next five years. Cancer cervix is observed mainly in women of the lower socioeconomic strata in India because of lack of: accessibility to preventive healthcare; availability of preventive health care; awareness that prevention is possible and also the methods and also knowledge about the symptoms of the disease (only in a very few is the disease silent and resulting in diagnosis at advanced stages of the disease, and this would probably occur in those who do not have regular preventive examinations). . Introducing cancer chemotherapy administration in peripheral hospitals requires careful monitoring of the choice of drugs and regimens, the site and type of cancer (curable cancers) and intention of the treatment i.e. intention to cure or palliate. Thus a definite policy has to be laid down. The attention to women with AIDS needs further strengthening to prevent mother child transmission, to ensure treatment of the positive women and also rehabilitation especially care of those who are abandoned.

### ***Improved Health Access***

Health is an important component of the Panchayathi Raj Institutions requiring the actual Involvement and the empowerment of the women and also to have community participation in Health care. Women community health workers need adequate compensation and periodic capacity building and social security to minimise their vulnerability to exploitation and to facilitate better delivery of health care.

As a new initiative, the “Hospital on Wheels Scheme” involving mobile teams of specialists to cover all remote and far flung areas of the districts will be launched by this Government to provide health care services at the door step. Dr.Muthulakshmi Reddy Maternity Benefit Scheme has been strengthened to provide enhanced maternity assistance of Rs.12000/- up to two deliveries for poor women. It covers antenatal care, post natal care and the immunization period. Rationalization of existing programmes, proper monitoring and evaluation would be made for the successful implementation of the Schemes. All urban health centres will be upgraded to provide round the clock delivery services on par with the rural areas. Designing and implementing effective intervention in the area of maternal and child health to reduce Maternal Mortality Ratio (MMR) and Infant Mortality Rate (IMR) to reach the projected levels will be a continuing endeavour of the State.

Infrastructure of the various medical colleges and hospitals and the hostel facilities to the students studying in the Government institutions will be strengthened. The Emergency Transport Services provided through ‘108’ ambulance services will be further improved by providing inter facility transfer for emergencies. Special efforts will be taken for the improvement of primary health care facilities in urban areas especially in the urban slums and small urban towns. Under Public Private Partnership, a State of the art computer aided laboratory facilities will be set up in all districts.

Occupational health afflictions will be addressed in the plan period with increase in the lifestyle diseases. The ‘new’ occupations such as the IT industry,

BPO's, garment industry etc., have resulted in life style changes which have a direct impact on:(1) the female reproductive system leading to polycystic ovarian disease, infertility, hyper stimulation, later cancer of the body of the uterus and ovary (2) general health leading to the early onset of chronic disease such as diabetes etc.

### **Health Insurance**

A new Insurance scheme called “Chief Minister’s Comprehensive Health Insurance Scheme” will be launched by the Government to provide health care services. Government hospitals will be fully utilized under the new scheme. Health insurance for those in the age of 70 years and thus the aged and elderly women will have to be considered as geriatric care becomes a burden. They could be abandoned so efforts to include palliative care for them would have to be taken up in the coming plan period.

A super specialty Hospital with modern trauma block will be established in the Districts, which are not having such facilities under Govt. of India Funds. Tertiary Care Institutions to be built and referral linkages should be strengthened. Apart from this, Government has now decided to establish a Multi Super Specialty Hospital in the unutilized “A” block and a new Medical College in the “B” Block of the Omandurar Government Estate, Chennai. This hospital would have all facilities on par with that of All India Institute of Medical Sciences (AIIMS), New Delhi. A strategy would be conceptualized to set up separate investigation centers in cities far from hospitals, with enough expertise, equipments.

Clinical trials and registry of institutions conducting them should be monitored and streamlined. Providing affordable and accessible health services to the people is the objective of this Government. Various measures proposed by the Government for the improvement of the Health sector would make Tamil Nadu, a role model and trendsetter in the provision of quality health care to the people in the country.

## **Nutrition**

The State has always given priority for providing food security and improving the nutritional status of its citizens, especially its women and children. Children are the first call on agenda of human resource development - not only because young children are the most vulnerable but because they are our future human resources. Early childhood - the first six years of life, constitutes the most crucial period in life and the foundations are to be laid for cognitive, social, emotional and physical / motor development. It is to be noted that the MDG No.4 aims at reduction of child mortality (i.e) reduce by two-thirds the mortality rate among children below 5 years of age; and accordingly the Government of India generated the targets to be achieved by 2015 for IMR as 28 per 1000 live births and U5MR as 42 per 1000 live births. Tamil Nadu has already surpassed the National MDG - 28 in IMR and 33 in U5MR.

"Nutrition security" will be the goal for Tamil Nadu. In a recent article, Dr. M.S. Swaminathan quoted on "Sustainable food security amidst Indian land rush" that Soil anemia also breeds Human anemia. Micronutrient deficiency in the soil results in micro-nutrient malnutrition in people, since crops grown on such soils tend to be deficient in the nutrients needed to fight hidden hunger. The locally grown nutritional grains in turn would be distributed in Universal PDS system of the State and should be fortified and included in Noon-Meal scheme. This ensures nutritional security of the population in terms of scarcity.

### ***Strategies***

- ◆ The vision of the State Government needs to make Tamil Nadu a "Malnutrition Free State " and to provide a whole life cycle nutrition security programme, with a focus on nutrition for the pregnant and lactating mothers, infants, children and adolescent girls. Sharper focus for the improvement of nutritional status and awareness levels of Adolescent Girls.

- ◆ Adolescent girls of 11 to 18 years will be equipped with information skills, life skills and vocational skills. The Adolescent Girls will be equipped with information on health and family welfare, self hygiene and family hygiene, guidance on existing public services etc.
- ◆ In order to achieve the goal of eradicating severe malnutrition and targeting moderate malnutrition, the protein rich food already provided to them will be continued.
- ◆ "Universalization of ICDS" aimed at the reach of ICDS services to every nook and corner of a village/settlement, without leaving any uncovered areas, giving priority to SC/ST/Minority populated areas the newly emerging slum areas.
- ◆ In order to improve the quality of Anganwadi Services, modernizations of AWC will be undertaken. Convergences of services will be taken in the case of providing drinking water, sanitation services etc.
- ◆ Imparting training to the ICDS functionaries for improving quality of service delivery in ICDS will be recognized.
- ◆ IEC activities will be strengthened. Strengthening of monitoring mechanism also proposed to be carried out.

### **Food security - Public Distribution System (PDS)**

The State of Tamil Nadu is committed to create and maintain a hunger free economy. The State believes that Universal access to cheap food alone will keep hunger at bay because targeted approach is not administratively feasible and can lead to large exclusion of genuinely poor families from Public Distribution System due to estimation and enumeration errors. Therefore the State implements Universal Public Distribution System through 32,760 fair price shops with 1.97 crore family cards.

Food Security will be achieved through Universal Public Distribution System and price check. The Government of Tamil Nadu is committed to not just Food Security, but more importantly, Nutrition Security. Effective price control mechanism is taken up through Special Public Distribution System for of toor dhal, urd dhal, fortified palmolein oil, fortified atta and maligai porulgal packets.

As rise in food prices hit the poor the most and contributes to increase in hunger, the State is committed to keep inflation within manageable limits. Towards this agenda, the State has a three pronged approach such as :- a) issue of essential commodities at subsidies prices through PDS, b) effective implementation of relevant provisions of Essential Commodities Act 1955 and Prevention of Black Marketing and Maintenance of Supplies of Essential Commodities Act, 1980 to prevent hoarding, speculation and black marketing and c) Market intervention to support the market to maintain prices of certain commodities at reasonable level during times of high inflation. The State propose to constitute a Price Stabilisation Fund with an initial corpus of Rs.50 crore and to extend interest free working capital to consumer cooperatives to buy targeted commodities during peak harvest period and to sell them at a reasonable price during inflation. It has been proposed to issue biometric based smart card by replacing existing cards.

## Chapter 9

### Social Security and Inclusive Growth

#### Social Welfare and Nutritious Meal Program

The state has been a forerunner in several schemes and many new policy initiatives for the welfare and development of women and children. There is variety of welfare schemes granting financial assistance to children and women in difficult circumstances to pursue education, marriage/ remarriage. It has provided a healthy environment to girl children and women and formulated many policy interventions for prevention of gender discrimination and improving the status of adolescent girls. Many flagship programmes implemented by the State has been taken as model by the Government of India for Country wide implementation, e.g Mid Day Meal Programme.

New innovative programmes have been implemented for economic and social empowerment of women and for securing gender equality in various social, economic and political aspects. Measures to improve the status of women and their quality of life must be integrated to various economic development programmes. The foremost programme for the empowerment of women “Mahalir Thittam” is implemented by the Tamil Nadu Corporation for Development of women which is fully funded by the State Government in partnership with NGOs and Banks. The prime objective of the Government is to extend its benefit to all the unreached population of the society and uncovered areas of the state with special focus on widows, destitute, transgender and other vulnerable and marginalized sections. Training is imparted to SHGs for undertaking income generating activities and providing marketing support o these SHGs.

#### ***Girl child protection***

The Girl Child Protection Scheme is a unique scheme which serves the purpose of encouraging education amongst girl children, preventing female

infanticide as well as promoting the small family norm. The Cradle Baby Scheme, has had proven success, which is evidenced by the improvement in the Child Sex Ratio of the State as a whole and in respect of the districts in which the scheme was introduced. The Government has now decided to extend the scheme to districts where the Child Sex Ratio needs special attention

The vision of the State Government is towards women specific and women related legislation has to be reviewed periodically and also to ensure equal opportunities for men and women, raising women's literacy and status, reducing the gender gap, countering the menace of female infanticide, creating important avenues for the care and protection of orphaned, abandoned, destitute and neglected children in the family environment and providing an atmosphere of happiness.

### ***Strategies***

- ◆ Efforts to enhance the education status of the girls by the Government by providing upto Rs.50000/- assistance to the marriage of the poor girls who have completed degree / diploma course.
- ◆ Integrated Complex of Special Homes catering to both aged persons and destitute children will be established for providing new opportunity of social interaction between two emotionally deprived groups in society.
- ◆ Financial assistance for transgender and poor women will be provided to undertake income generating activities.
- ◆ In order to give substantial relief to the vulnerable sections of the society, the monthly pension scheme has been enhanced.

Mobilize families, civil society and community to respond to the need of children in difficult circumstances and help them access protective and developmental services for children:

- ◆ Provide temporary shelters and in some cases institutional care for street and other children in exploitative circumstances, in partnership with NGOs and community based organizations,
- ◆ Facilitate early repatriation of children in institutions to families thereby promoting/encouraging de-institutionalization of children. Ensure that all institutions, housing or care facilities and protective services where children live, meet established standards and are upgraded and further expanded.
- ◆ Enhance awareness regarding adoption, foster-care and sponsorship and putting systems, including programmes and schemes in place to facilitate these,
- ◆ To register all child care institutions (Government / NGO) under Juvenile Justice Act in order to safeguard the rights of the children,
- ◆ To effectively promote Public Private Partnership (PPP) Corporate Social Responsibility (CSR) initiatives to extend services to children in need and to organizations working in the sector.

### **Differently Abled Persons**

Tamil Nadu has always been a pioneer in the implementation of welfare schemes for all sections of socially disadvantaged groups. In order to provide effective rehabilitation services to the Differently Abled Persons a comprehensive state policy for the welfare of the Differently Abled Persons was formulated. Awareness is being created among public to accept them as natural partners of growth and provide them access to various services and equal participation in social life to create an inclusive society. Various policies and initiatives have been extended to give full support to the Differently Abled Persons in their pursuit of full and equal involvement in every aspect of society. A Committee will be constituted to oversee the implementation of 3 percent reservation in all Government employment. Ensuring provision of barrier free environment for Differently Abled

Persons in Chennai Metropolitan will be extended to all other Corporations/ Municipalities/ Panchayats by amending the relevant acts.

### **Welfare of Scheduled Castes, Scheduled Tribes and Other Backward Classes**

The state has given emphasis for improving the quality of life of the socially disadvantaged groups viz., Scheduled Castes and Scheduled Tribes, Other Backward Classes and Minorities. Several steps have been taken up for framing appropriate policies and formulating many progressive schemes to achieve the goal for creating a conducive atmosphere to ensure speedy socio-economic and educational development of SCs, STs, OBCs and Minorities on par with other sections of the society.

The vision of the State Government is to achieve the cent percent literacy among SCs/ STs, 100% of infrastructure coverage facilities, provision of protected water supply to all SCs/ STs habitations, complete electrification in SCs/STs habitations, creation of good environment in SCs/STs schools/ hostels, job oriented skill training to be imparted to SCs/STs population. In order to enhance the position in the field of education, employment and profession, more opportunities will be provided.

### ***Strategies***

- ◆ To narrow the gap between SCs, STs, OBCs & Minorities and the rest of the society, continuous effects on education and employment to be focused.
- ◆ Special efforts will be taken to improve the position of SCs, STs, OBCs and Minorities in school enrollment and in parameters such as literacy and the percentage of people below the poverty line. But gaps still persist, and further efforts are needed.
- ◆ Specific scholarship schemes to those who pursue higher studies may be boon to them to continue their education.

- ◆ To improve the enrolment ratios and to reduce dropout rates especially for girl children. Special incentives already given may be enhanced.
- ◆ Government accords top priority to the socio-economic development of the people belonging to SCs, STs, OBCs and Minorities. Programmes for skill training, entrepreneurship development etc., will be implemented enabling them to avail the benefits in upcoming sectors like Information Technology (IT) and Information Technology and Enabled Services (ITES).
- ◆ Scheduled Castes Sub Plan and Tribal Sub plan to be more effective and allocation of funds to be utilized to the optimal level to the desired goals.

## **Chapter 10**

### **Natural Resource Management**

#### **Environment and Climate Change**

Environmental conservation is an integral part of the socio economic development. Degradation of the environment imposes the maximum costs on the poor and under privileged. Decisive steps aimed at preserving the natural resources of air, water and land are being initiated for ensuring sustainable development. Urbanization, industrialization and rising population has put enormous pressure on our natural resources. Pollution of air, soil, and fresh waters has become serious and continuing threat to the health of human and other species. Integration of environmental conservation with development applied across sectors would evolve a flexible process without being detrimental to the resource base.

Several initiatives have been taken by the Government for pollution abatement in rivers and lakes besides promoting environmental consciousness among the school children and the public. With the rapid industrialization in Tamil Nadu, there has been a marked increase in the need for continuous monitoring of pollution of industrial activities. The Tamil Nadu Pollution Control Board (TNPCB) inspects industries under their jurisdictions periodically to assess the adequacy and quality of pollution control measures..

The success of sustainable development, on one hand requires a review of enactments and legislations, its enforcement, organizational ability, training of personnel and productive capacity of the resource base. On the other hand it has to develop co-ordination among the different stakeholders i.e., Government agencies, Local communities, donor agencies, NGOs, environmentalists, experts, for the sustainable utilization of resources manner and strengthen environmental management.

### ***Objectives***

The major objectives proposed for the Twelfth Five year Plan are, (a) Evolving environmental education to ensure peoples participation in Climate Change and environmental awareness campaign (b) Initiatives for tackling the problems of air, water, land and noise pollution and safe disposal of solid waste, hazardous waste etc and (c) rationalizing the environmental regulations governing issues, viz., Environmental Impact Assessment, Coastal Zone Management, Pollution Abatement in Industries and valuation of Environment Impact, (d) Policy Framework – New and Emerging Interventions.

### ***Strategies***

The strategies proposed for achieving optimum results and for combating pollution requires action plans, which has been detailed as below: (1) Adopting cost effective, innovative technologies, ameliorative management to restore and rehabilitate the ecologically fragile and sensitive eco-systems; (2) Environmental awareness and education programmes for all section of the society; (3) Reclamation of wasteland through useful plantations/ greening activities; (4) Encouraging recycling, reuse of solid wastes; (5) Introduction of zero discharge/ zero garbage concepts in all sectoral activities to prevent pollution of source, long term river cleaning activities and long term monitoring for the improvement of quality of rivers and other water bodies; (6) Improving ground water potential by recharging techniques such as rain water harvesting, recycling of waste water, preventing salt water intrusion etc.; (7) Development of green belts; (8) Carrying capacity based development of coastal areas with adequate surveillance on violations; (9) To inspect sewage and trade effluent treatment plants for their effectiveness and review plans, specifications for corrective measures; (10) To evolve best economically viable treatment technology for sewage and trade effluents; (11) To evolve efficient methods of disposal of sewage and trade effluent on land; (12) To monitor the generation, transportation, treatment, storage and disposal of

hazardous wastes: (13) To identify and monitor the isolated storage of hazardous chemicals; (14) To collaborate with Central Pollution Control Board in organizing the training of persons engaged or to be engaged in programmes relating to prevention, control or abatement of water/air pollution and to organize mass education programme relating thereto and (15) Formulation of State Action Plan on Climate Change on the lines of National Action Plan for Climate Change (NAPCC) that can be dovetailed to the National Action Plan for Climate Change. (16) Identification of effective adaptation strategies for addressing adverse effects of climate change on vulnerable regions and population; and synchronization of such strategies with the developmental activities to 'mainstream' the adaptation to climate change. Incentive schemes for reducing energy intensity and for promoting energy conservation; and promotion of renewable resources such as wind for electricity generation to reduce carbon intensity of output. Developing authentic and quality database on all relevant aspects of climate change to facilitate informed policymaking based on sound analysis. (17) Introduction of Policy Framework – New and Emerging Interventions viz., Environmental Tax Reforms- Facilitating gradual shift towards management of environment and natural resources using market based instruments (e.g., eco-taxes), Green Economy and Green Growth – Facilitating move towards green economy and inclusive growth; and development of statistical systems that estimate environmentally adjusted growth and Public Private Partnership in environmental sector.

### **Forests and Wildlife**

Forests provide the basic life supporting system to all the living entities of the mother earth including the mankind. Degradation of forests will have adverse impact on these life supporting systems such as fresh air, water resources, fertile soil and agriculture, bio-diversity and environment. Vast sections of the rural society, including a majority of the tribal, are directly dependent on forests for their livelihood. Tamil Nadu has a rich tradition of forest management, forest protection practices, legislations and policies. The unique geographic location of the State enables it to host a wide range of forest biodiversity.

## **Extent of Forests and its significance**

Tamil Nadu has 22,877 sq.km of recorded forest area, which is 17.59 percent of the total geographical area of 1, 30, 058 sq. km of the State. The forest and tree cover of the State is 28,306sq.km, which is 21.76% of its total geographical area, as assessed by the Forest Survey of India (State of Forest Report 2009) as against 33.33% envisaged in National Forest Policy, 1988. The State has three Biogeography zones- The Western Ghats, the Eastern Ghats and the East Coast. The forests and vegetation types of these Bio-geographic zones are unique and have evolved over millions of years. The Western Ghats is one of the 25 Global Biodiversity hot spots and a mega centre of endemism. Tamil Nadu is rich in Wild Biodiversity with 5,640 species of angiosperms recorded in the country. It has a vast network of protected areas with 10 Wild Life Sanctuaries, 5 National Parks, 13 Bird Sanctuaries and one Conservation Reserve.

## ***Objectives***

Climate change is one of the most significant threats to human civilization in current times. Rapid industrialization has not only increased the concentration of Green House Gases (GHGs) in the atmosphere, it has also reduced the planet's capacity to absorb GHGs by land-use changes including deforestation. Forests are one of the world's major carbon sinks. The forests contribute significantly to assimilation of global carbon dioxide accumulated from past emissions in the atmosphere and sequester it in soil, vegetation and wood biomass. In order to mitigate the ill effects of climate change several Afforestation programmes have been undertaken in the State in the recent years. The programmes help in increasing the forest and tree cover and consequently more carbon is absorbed from the atmosphere. Therefore, there is an urgent need to increase the forest/tree cover of the State.

The basic thrusts of the draft Tamil Nadu State Forest Policy is towards ecological stabilization, protection of forests, wildlife conservation, conserving the

genetic resources and eco-systems and maintenance of the forests' water resources and also increasing the forest and tree cover in the state.

The forests of Tamil Nadu are being managed with the following broad objectives: (1) Biodiversity and genetic resource conservation by protection of forests and wildlife; (2) Augmentation of water resources in forest areas; (3) Rehabilitation and restoration of degraded forests for improvement of forest cover; (4) Enhancing tree cover outside forests for livelihood security and climate change mitigation and (5) Welfare of tribal and forest fringe villagers to ensure economic prosperity and ecological stability.

### ***Strategies***

Forest Management in the present day context has to be focused in maintaining this natural resource as life-support system, particularly for the tribal and forest fringe communities. Forests are also seen as a natural resource, from which the communities will derive maximum ecological services than direct economic returns. This thinking is entirely in tune with the National Policy framework.

In consonance with the above, the State Forest Policy plans to chart new paths, forge new relationships and adapt to the rapidly shifting social environment and forest demands by adopting the thrust areas listed below, which will promote a comprehensive forest based development of the State. The paradigm shift in Forest Management priorities from that of a revenue generation sector to that of an ecological service provider have called for identification of thrust areas, which have to be addressed in the Twelfth Five Year Plan for the Conservation, Development and Augmentation of Forest and Tree Resources of the State

The Strategies suggested are ; (1) Conservation of Forests and Wildlife (2) Forest Protection and Forest Resource Management; (3) Catchment Area Management for augmentation of Water Resources; (4) Increase Forest Cover inside forests to ensure ecological security to the people; (5) Increase Tree Cover outside forests for livelihood security and environmental amelioration; (6) Tribal

Development to ensure ecological stability and economic prosperity; (7) Coastal Ecosystem Conservation and Management; (8) Research And Technology Support, for scientific forest management; (9) Empowerment of Women for Sustainable Forest Management; (10) Human Resources Management and Infrastructural development for efficient delivery mechanism; (11) Eco Tourism to create awareness among common people and the younger generations, (12) Man-Animal conflict:- Effective measures will be taken to mitigate human-wild animal conflict

### **Tourism**

Tourism is seen as an engine of development, catalyst to economic prosperity of a country. Tourism ensures an all round growth through economic multiplier effect which percolates to various stake-holding sectors like the airlines, railways, surface transport, cruises, hotels, telecommunication etc. A thrust is being given for providing tourist infrastructure of international standard and marketing of destinations.

Tourism in the past was regarded as a religious or leisure activity. Now, the improved connectivity, quality Roads and easy access to tourist attractions, e-booking, etc. have made travel easier. Monotony of work, stressful lifestyle, and desire to explore new places has necessitated travel and tourism. The free trade and open-sky aviation policies have also contributed to tourism growth.

#### ***Tourism Trends in Tamil Nadu***

	<b>Domestic Tourists (In Lakhs)</b>	<b>Growth Rate (%)</b>	<b>Foreign Tourists (In Lakhs)</b>	<b>Growth rate (%)</b>	<b>Total (In Lakhs)</b>	<b>Growth Rate (%)</b>
2007	506.5	28.2	17.5	30.6	524.0	28.2
2008	626.2	23.6	20.4	16.6	646.6	23.4
2009	780.4	24.6	23.7	16.2	804.1	24.4
2010	1,030.1	32.0	28.04	18.3	1,058.1	31.6

The above table shows that the trend of the Domestic and foreign tourists visited Tamil Nadu during 2007 and 2010. Tamil Nadu alone contributed Rs.9,889 crore towards the foreign exchange for the year 2010. The Growth rate of foreign exchange earnings is 45.54% for the year 2010 as compared to Growth rate of 9% for the year 2009. The targets, Goals and expected Growth rate accordingly to be fixed in the above trend derived from 2007 to 2010.

### ***Tamil Nadu Tourism – Potential and Prospects***

The Vision of the Government of Tamil Nadu is to promote Tamil Nadu as an attractive tourist destination at the International level and to preserve the rich cultural heritage and monuments of architectural splendor. The mission of the State is to strengthen the existing tourism infrastructure including basic amenities like toilet, Drinking water, food courts etc., in the State, to exploit the tremendous unexploited potential for the promotion of Tourism. Special emphasis to make Tamil Nadu the top destination in India for attracting domestic and foreign tourists by increasing tourist arrivals, length of stay, the average spending by foreign as well as domestic tourists per day.

### ***Strategies***

The Government is developing tourism in a sustainable and inclusive way through a multipronged strategy of augmenting tourism infrastructure, promotion and marketing in domestic and overseas markets, development of accommodation and development of skilled manpower in the sector. The following strategies are proposed to achieve the objectives of the Twelfth Five Year Plan.

- ◆ Integrated development of high-priority tourism circuits. Enhanced connectivity and improved environment, utilities and tourist services.
- ◆ Improvement of institutional and regulatory frameworks that will ensure coordinated efforts of multiple agencies in the promotion of environmentally and culturally sustainable and socially inclusive tourism development.

- ◆ Encouragement of private sector and community participation in tourism and Capacity building and human resources development for sustainable tourism and destination management through employment generation, poverty alleviation, environmental regeneration, advancement of women and disadvantaged groups.