

ENVIRONMENT AND FORESTS DEPARTMENT

POLICY NOTE 2006 – 2007

Demand No. 15

FORESTS DEPARTMENT

INTRODUCTION

Forestry is the most natural and sustainable form of land use providing ecological security to the country as a whole and complements all other forms of land uses. The forests conserve water, soil and stabilise the environment. Sustainability of forest eco-system is an essential component of the environmental conservation efforts. Any degradation of forests will have an adverse impact on various systems such as water resources, agriculture, bio-diversity, environment, climate and human health in the communities living in and around the forest areas. A vast section of the rural society, including a majority of the tribals, are dependant on forestry sector for their sustenance and well being. The food and livelihood security of a vast population abutting the forests may be jeopardised, if the forests are not sustainably managed. The success of agriculture and rural prosperity is dependant on a harmonious rural landscape with sufficient tree cover. Forests and tree resources inside and outside the forests provide enormous goods and services to the people and the State. Therefore, this sector has aroused the interests of all sections of the society in the State.

1.1. FOREST POLICY

As per the Indian Constitution, the Directive Principles of State Policy assign duties to the State and all citizens through Article 48 A and Article 51 A (g) which state that the “State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife in the country” and “to protect and improve the natural environment including forests, lakes and rivers and wildlife, and to have compassion for the living creatures”. The principal aim of the Forest Policy is to ensure environmental stability and maintenance of ecological balance including atmospheric equilibrium, which are vital for sustenance of all life forms, human, animal and plant. The derivation of direct economic benefit must be subordinate to this principle aim. The National Forestry Action Plan envisages the following approaches for the holistic development of the forests:-

1. Protect the existing forest resources
2. Improve forest productivity
3. Reduce demand for forest products
4. Strengthen policy and institutional frame work
5. Expand the forest area.

All planning in forestry sector in India is required to follow these cardinal principles.

The management of the forests in the State is guided by the National Forest Policy, 1988 which sets basic objectives, essentials and strategies of forest management in the State. Launching of State Forest Policy in tune with the National Forest Policy is in the final stage of consideration. The

objectives, strategies and management approaches of the National Policy envisage maintenance of environmental stability, restoration of ecological balance through conservation, upgradation and augmentation of tree cover. Today, Forestry is embracing a multidisciplinary and multidimensional approach with the involvement of multitudes of disciplines, institutions and organisations.

1.2. FOREST COVER IN TAMIL NADU

Tamil Nadu has an area of 22877 sq. kms under forests which constitute 17.59% of the geographical area of the State as against 33.33% required under the National Forest Policy, 1988. The variability in climate, topography, soil, water resources, altitude and biotic influences have resulted in formation of different forest communities, commonly known as forest types.

The State has a spectrum of forest vegetation types ranging from wet evergreen forests to moist deciduous, dry deciduous, sholas, grass lands and scrub forests. Invaluable trees like Sandal, Teak and Rosewood and wildlife like tiger, elephant, lion-tailed macaque, grizzled giant squirrel and numerous rare species of fauna and innumerable species of flora including important medicinal plants are found in the forests of the State.

Tamil Nadu, therefore, has adopted a compelling vision to inspire people to protect wilderness, the ecological diversity and species richness. The Tamil Nadu State Forest Act, 1882, The Wildlife Protection Act, 1972, Forest Conservation Act, 1980 and a host of rules formulated under these Acts are being implemented by the Forest Department. Adhering to the best scientific principles and incorporating traditional knowledge, new socio-economically and ecologically sound paradigms for managing forests and wildlife have been incorporated in the management strategies adopted by this department.

1.3. STATE FOREST POLICY

Forest Management requires new policies and approaches. The policies should be ecologically sustainable, socially acceptable and economically feasible. The forestry sector is facing new challenges due to the increased role and the sector plays to boost the peasant income, enhances food security and reduces poverty. Pressures on forests have to be stalled, degradation checked, sustainable development promoted through prudent policy actions, which can bring about stronger rural development of forest fringe inhabitants and the tribals. The basic thrust of the proposed Forest Policy of the State for 2006-07 is directed towards environmental conservation, ecological stabilisation, robust development of the local people in and around forest fringe areas. The Joint Forest Management approach (JFM) fosters the positive relationship between the forest department and village communities. The Village Forest Committees (VFCs) protect and manage the forests and in turn share the usufructuary benefits from the forests. The empowerment of village communities as a source of local self governance in planning, management and development of forests has given new directions to the forest resource management in the State.

1.4. OBJECTIVES

Forests in Tamil Nadu are being managed with the following main objectives:

- To ensure environmental stability by restoring ecological balance in forest ecosystem.
- To increase the forest cover/tree cover in the State and enhance their quality.
- To conserve the wide array of Bio-diversity through scientific management and to improve habitat conditions for improved forest health.
- To protect and develop the forest catchment areas of rivers, lakes, reservoirs and all aquatic eco-systems.
- To meet the genuine requirement of fuel, fodder, non-wood forest produce and small timber to the extent possible on a sustainable basis through the Watershed Development and Joint Forest Management.
- To improve the condition of forest types and to increase the tree cover outside the forests through research, training and extension activities and also to sensitise all sections of the society for conservation success through planning, interpretation, integration and collaboration.
- To increase forest based entrepreneurship to support improved livelihood and to develop efficient market systems.
- To make available the traditional forest produce to the tribal people living inside the forests and make them partners in forest management.
- To develop non-conventional alternative energy sources to meet the energy requirement of remote villages.
- To bring in scientific management of forests for multiple objectives and to strengthen growth, yield and productivity systems.
- To stabilise coastal eco-systems from natural calamities like cyclones, tsunamis, etc.

1.5. STRATEGY

Forest policy plans to chart new paths, forge new relationships and adapt to the rapidly shifting social environment and forest demands by adopting the strategies listed below, which will promote a comprehensive forest based development of the State.

1.5.1. Increasing green cover in the landscape

The Union Planning Commission has recommended that the forest / tree cover in the country should be increased to 25% of the geographical area by 2007 and to 33.33% by 2012 as mandated in the National Forest Policy, 1988. Earnest efforts are being taken to increase the forest cover / tree cover in the State, by encouraging tree cultivation inside and outside reserved forest areas by extension activities, supported by research. The total percentage of area under forest / tree cover is reported as 21.25 % i.e., 27634 sq.kms, of the total geographical area of State (State of Forest Report 2003 as assessed by Forest Survey of India, Dehradun). Action is also being taken to improve the quality of forest types to maintain the ecology and the health of the forests.

1.5.2. Integrated Natural Resource Management, Forest Restoration and Productivity Improvement through Joint Forest Management

The experience of Joint Forest Management in Tamil Nadu has been very impressive. There has been an overall qualitative and quantitative improvement in the nature of forest cover and also perceptible improvement in the Forestry Sector, in general.

Learning from this experience, the same approach will be continued in the management of the forests through Village Forest Committees on the lines of Joint Forest Management. The Joint Forest management is an approach for forest development through democratised participatory methods empowering forest dependant local communities. It balances the local needs with external and environmental needs through increased productivity of the forest resources, reduces dependency on forests through substitution of demand and alternate livelihood opportunities, upgradation of living standards and above all inculcating a sense of ownership and pride among the forest dependant communities engaged in the Joint Forest Management. Tamil Nadu is endowed with some unique and fragile eco-systems like Western Ghats, Eastern Ghats, Nilgiris Bio-sphere, Gulf of Mannar Biosphere, Agasthya Malai Biosphere, Coastal Mangroves and marine areas. These areas require specialised management approaches and treatments for holistic ecological sustainability.

1.5.3. Biodiversity Conservation, Landscape and Protected Areas Management

Tamil Nadu has been a pioneer State in protected area management and development of wildlife. The State has set aside 16.03 % of its forest area i.e., 3669.18 sq. kms. under the network of protected areas in 8 sanctuaries, 5 national parks and 3 biosphere reserves namely Nilgiris Biosphere Reserve, Gulf of Mannar Biosphere Reserve and Agasthya Malai Biosphere Reserve in the State. In addition, there are 12 bird sanctuaries outside the reserve forests declared for protecting the bird habitats. These protected areas of the State hold large samples of eco-system types and habitats containing viable population of wildlife, key stones, species, endemic species and cover significant eco-tones, landscapes and corridors. The protected areas in the State are mainly managed for conservation of biodiversity, education, recreation, historic reasons, unique landscapes and seascapes. Tamil Nadu is unique as it is the meeting point for eastern and western ghats which is a biodiversity hotspot rich in endemism.

Efforts are being made to increase the protected area upto 25% of the forest area of the State under the Wildlife Management as the proposals for declaration of Sathyamangalam Wildlife Sanctuary, Meghamalai Wildlife Sanctuary, Kodaikanal Wildlife Sanctuary and Nellai Wildlife Sanctuary are under consideration of the Government besides enlarging the extent of already proposed wildlife sanctuaries. Many medicinal plants and plants of genetic importance will also be conserved in these areas.

Action is also being taken to resolve human-wildlife conflict through habitat improvement and prompt payment of compensation in problematic sites besides improving the marine eco-system through the Gulf of Mannar Biosphere Project. All wildlife areas and habitats will be mapped through

Remote Sensing, Geographical Information System and Global Positioning Systems. Conservation efforts through the Zoos will also be strengthened.

1.5.4. Catchment Area Management

In Tamil Nadu, there are 32 river systems, 71 reservoirs, 2,391 canals and 40,319 tanks and majority of their catchment areas lie in forestlands. To improve the forests, an Integrated Watershed Development approach is being implemented by undertaking afforestation and soil and water conservation measures in the affected watersheds. Massive soil and water conservation activities will also be taken up, as such measures will form an integral part of all treatment plans at macro as well as micro level. This would help in arresting soil erosion besides recharging ground water in the catchment area. Such steps would ensure prevention of floods and droughts in the adjacent plains besides benefiting vegetation and wildlife in forest areas. Integrated development of all natural resources including forests would rationalise inputs and maximise outputs.

1.5.5. Eco-System Management

Forest Protection is the most successful attribute for a healthy eco-system management. The natural resources within the eco-system of the State are threatened by various factors such as fire, grazing, encroachment, illicit felling of trees, ganja cultivation and poaching of wildlife. To combat such threats, protection machinery has to be geared up constantly. As the State is endowed with valuable scheduled timbers like sandal, teak, rosewood and a plethora of medicinal plants and a wide diversity of wildlife, the protection machinery has to be bestowed with the state-of-art protection equipments, gadgets and infrastructure like fire arms, ammunitions, wireless sets, fire fighting equipments and supporting activities. These measures have to be supported by Forest Consolidation Activities to protect the boundaries and to prevent encroachments in the forests. Encroachment of forest lands is a serious problem to forest administration. Action is being taken by the Forest Department to evict such encroachments in cooperation with the revenue and police officials and also to prevent fresh encroachments.

1.5.6. Wood and Non-Wood Forest Produce Augmentation

The pressure on forests for timber, fuelwood, medicinal plants and other uses is very high in the State. Extension forestry, Social forestry, Community forestry, Agro forestry, urban forestry have all contributed to built up of wood and non-wood based assets in the State contributing to the household needs and to provide services like livelihood security by promoting artisanal and industrial sectors through rural industrialisation. The growing wood and non-wood demands have to be met through resource augmentation programmes covering forest lands, poromboke lands, private lands, community lands, institutional lands, households which call for multistake holder partnerships. The Department, therefore, envisages promoting of tree-based activities through partnerships, technical support, extension activities, training and support for market linkages.

Encouraging the planting of timber species by public in their lands is one of the main thrusts of the department and steps are being taken up for liberalising various rules regarding growing, transport and utilisation of timber.

1.5.7. Unlocking opportunities for Eco-system People

Tribals live in harmony within the forests in the State. The Department has always stood for the cause of tribal development through various programmes and schemes over the years to benefit them. The current efforts of the department will be to enhance the quality of their lives by providing improved access to education, health, housing, water supply, electrification, roads, and employment through livelihood opportunities with the overall objectives of forest conservation while assuring their social and economic prosperity. While doing so, their customary rights and privileges would also be protected by providing them the Non-wood forest produce collection and sale rights supported by adequate marketing avenues. The approach would also include integration of various schemes operationalised by various line departments for their socio-economic development.

1.5.8. Community Forestry

To meet the demands of the local community and to augment the tree cover outside the forest areas, Community Forestry activities will be taken up in tanks, foreshore areas, community lands, poramboke and wastelands with the support of the local communities and local institutions. This programme will also be extended to institutions, individuals interested in tree based assets. The panchayat plantations raised not only offer best assets to the community but also income as the revenue by sale of plantations are shared between the Panchayats and Forest Department in the ratio of 60:40.

1.5.9. Extension Forestry

Forest development and conservation can succeed only with the willing support and co-operation of the people and therefore to bring out successful interface between the user stakeholders especially the farming community, the Forest Department will strive to provide a forum for interaction and integration of the research outputs, technologies on various tree species for promotion of trees outside forests and thereby augmenting their income and also to strengthen the conservation efforts of the department.

Farmers and other user groups will be provided opportunities through institutions like Forestry Extension Centres located in the districts. Steps would be taken up to have one such centre in each district, which would provide a platform for promotion of tree-based agro business activities. The Forestry Extension Centres have also established demonstration plots of agro-forestry species for providing the requisite technological inputs to the farmers as per their needs.

Under the Tamil Nadu Afforestation Project,(TAP) efforts will be augmented to increase the forestry extension activities through the extension centres to contribute to eco-education and awareness building among youth and children. The goal of the extension forestry activities is to enhance tree cover in the private lands and thereby achieve the required extent of tree cover / forest

cover upto 1/3 of the total geographical area of the State as envisaged in the National Forest Policy, 1988, by 2012 AD.

1.6. FOCAL AREAS OF ATTENTION

1.6.1. Technology for Resource improvement

Forestry Research in Forest Management in the State has always been supported with scientific backing undertaken by the Research Wing encompassing all the agro-climatic zones of the State. Scientific forestry has supported the natural resources management efficiently and the scientific findings have gone to improve plantation forestry, conservation forestry, agro-forestry and other forest based activities, which have been provided to people through the extension centres. Research has been undertaken in multipurpose tree species, non-wood forest produce and other thrust areas like silviculture, bio-diversity conservation, restoration ecology, soil nutrient management, medicinal plants improvement and husbandry, bio-fertilizer production, post-harvest technology which have benefited the forestry will be continued. Existing Research Plans will also be updated not only to meet the current needs but also the future demands for conservation and promotion of agro-forestry coupled with extension services. The main thrust of forest research in Tamil Nadu is on biodiversity conservation and bio-productivity enhancement.

The Research Wing will focus on research programmes to support Species Recovery Programmes and rural forestry based industries. Research on veneer, plywood, energy wood, matchwood and multipurpose tree species will be undertaken in many research centres and field stations.

1.6.2. Human Resource Development

Forest Department of Tamil Nadu was established in the year 1806. Forestry is no longer a unidisciplinary entity as it involves a multidisciplinary approaches and linkages with the combination of traditional and modern approaches. There is a need to update the knowledge, skills and attitude in all spheres related to forestry. With the advent of Joint Forest management, there is an improved integrated approach and inter-sectoral linkages, for better understanding of the role to be played by the workforce. The Human Resource Development revitalises the staff at all levels and provides acumen that is essential to undertake the arduous and challenging tasks which are emerging rapidly in this sector. The Human Resources have to be developed not only within the department but also among the various user-groups that are associated with the forestry sector. The existing Tamil Nadu Forest Academy, Coimbatore and the Tamil Nadu Forestry College, Vaigai Dam, will endeavour to fulfil these challenges. Besides this, the forestry personnel will also be exposed to emerging issues through trainings at various reputed national and international institutions.

1.6.3. Women Empowerment

To ensure household food security, millions of rural women are burdened with duties of collection of firewood, fodder and water and the dwindling forest resources make their work more

difficult. Hence, emphasis will be given to ensure that the rural women with greatest dependence on bio-resources will be involved in decision-making and control over their livelihood resources for a better life as their vital role in natural resources management is being increasingly appreciated and also encouraged by the forestry sector.

Women as prolific users of forests used to spend long hours in collecting minor forest produce, cutting grasses and grazing, etc., In order to reduce biotic pressure on forest, they have been provided with rehabilitation measures by diversification of rural employment for income generation in the form of food processing, fisheries, basket making, weaving, garment making, candle making, agarbathi making, etc., Under the Joint Forest Management, the Women Self-Help Groups would be enthused by the department to seek their qualitative participation to achieve economic upliftment and social empowerment of women in the State. Tamil Nadu Afforestation Project has, therefore, encouraged formation of Women Self Help Groups under various poverty alleviation programmes in 27 districts. At present, there are about 3900 Women Self Help Groups working in the programme villages selected for the afforestation project.

1.6.4. Forestry for Employment Generation and Livelihood Security

Forests are associated with rural livelihoods as a vast majority of the forest fringe area communities are dependant on the forest resources. The programmes and schemes of the forest department to a great extent provide employment opportunities and livelihood support to these communities at their doorsteps. This is also coupled with the assured flow back of the ecological and economic benefits generated through the Joint Forest Management programme. Programmes that contribute to employment generation coupled with ecological restoration will be actively pursued by the Forest Department.

1.6.5. Intersectoral and Cross-sectoral coordination

The benefits of the programmes / schemes of the forest department can be considerably enhanced by the synergistic efforts of the activities of the line departments working in the same project areas. This will ensure better convergence and flow of benefits to the rural poor as most of the schemes of the forest department aim to develop such intersectoral and cross-sectoral coordination for maximising the benefits for the forest dependant communities. The line departments in all such programmes will be coordinated and integrated through district level coordination committees for better results.

1.7. ACHIEVEMENTS DURING 2005-2006

1.7.1. Tamil Nadu Afforestation Project Phase-II (TAP – II)

During the first year of the project, i.e. 2005-06, TAP- II has been implemented at a cost of Rs.76.02 crores for raising plantation over an area of 29,250 hectares including community

development and income generation activities in 135 Programme villages including 30 tribal villages in the State.

1.7.2. Emergency Tsunami Reconstruction Project (ETRP)

During 2005-06, 2000 hectares of shelterbelt and 700 hectares of mangrove plantations have been raised in the coastal districts of Tamil Nadu under this scheme to protect the people and their properties from the natural calamities like tsunami with an outlay of Rs. 857.13 lakhs.

1.7.3. National Afforestation Programme (NAP)

The National Afforestation Programme funded by the Government of India is being implemented in the State from 2002-03 on the Joint Forest Management basis for which 32 Forest Development Agencies have been formed in the implementing divisions. So far, the Government of India has released Rs. 5723.18 lakhs under this scheme and out of which a sum of Rs.5066.36 lakhs has been utilized for covering an area of 35879 hectares.

1.7.4. Part-II schemes of 2005-2006

During 2005-2006, 33 Part-II schemes with an outlay of Rs. 526.75 lakhs for protection of forests, buildings, roads, forest settlement, improvement of zoos, etc. have been undertaken.

1.7.5. Sandalwood Revenue

A sum of Rs. 6070.26 lakhs has been realised as revenue by sale of 236.320 metric tonnes of sandalwood from 3 final cleaning depots at Salem, Tirupattur and Sathyamangalam.

1.7.6. Destruction of Ganja Plants

3598 Ganja plants over an area of 0.0238 hectares worth Rs. 2.51 lakhs were destroyed during 2005-06.

1.7.7. Sale of teak trees in Thanjavur division

An amount of Rs.756.02 lakhs has been realised during 2005-06 from the sale of 10,399 teak trees in Thanjavur division.

1.7.8. Training for I.F.S officers and other forest officers

Forestry is a science, which is witnessing new challenges and it calls for understanding of the eco-systems and their management. In order to understand the areas, concerning and governing forestry and wildlife management, it is essential that the forest officials at all levels including the IFS officers also are exposed to the new trends in forest management. During the year 2005-2006, Officers and staffs have been trained in subjects like forestry, Agro forestry, Wildlife, GIS and allied areas of forestry. Similarly in Tamil Nadu Afforestation Project nearly 160 officers have been trained in various national institutes on aspects of Joint Forest Management. During the current year also it is proposed to send officials and staff for such trainings covering various aspects of forestry.

1.7.9. Geomatics Centre

The Geomatics Centre has prepared many maps of administrative boundary such as division, range, beat, reserved forests with the help of organized indigenous database and supplied to Forest Divisions, Wildlife Wings and Working Plan Offices for preparation of Management Plans, Wildlife Census etc., In-house training on ArcGIS Software was imparted to 264 personnel comprising Forest Rangers, Foresters, Forest Guards, Draughting Officers and Ministerial Staff of all Circles in 40 batches in the State by the resource persons of the Geomatics Centre.

Forest Fire Mapping using Satellite Imagery has been completed for the years 2001-2005 for the forest of Tamil Nadu. GPS receivers have been supplied to all circles and training on usage of GPS receivers has been imparted to field staff as well as office staff at circle levels for field surveying, plotting and mapping.

The Tamil Nadu Forest Department has done good work in the field of Geographic Information System (GIS) in the field of creation of a digital database of the forest cover in the State by using Remote Sensing. The Geomatics Center established by the Forest Department has received the "Special Achievement in GIS Award", from the ESRI, India, New Delhi.

1.8. FOREST REVENUE AND EXPENDITURE

1.8.1. Revenue

Felling of natural trees in the reserved forests has been discontinued since 1979 and since then the major sources of revenue is by sale of sandalwood, supply of raw materials to forest based industries and sale of farm forestry plantations. Dead sandalwood trees alone are extracted for sale. Supplies of raw materials are from matured plantations and are allotted to certain paper and tannin industries. The farm forestry plantations raised in irrigation tanks are sold in auction to raise revenue.

The revenue receipt during 2005-2006 (Revised Estimate) and proposed Budget Estimate for 2006-2007 are detailed below:

(Rs. in lakhs)

Sl. No.	Source of revenue	2005-2006 (Revised Estimate)	2006-2007 (Budget Estimate)
a)	Sandalwood	9000.00	10200.00
b)	Timber	1144.47	1027.60
c)	Supply of raw materials to industries	1744.94	1853.90
d)	Other Minor Forest Produce	50.15	50.17
e)	Farm Forestry plantations	1050.00	1050.00
f)	Sale of Bamboo, Cashew and Softwood plantations	23.00	22.80
g)	Other receipts	2572.40	2938.93
	Sub total	15584.96	17143.40

Sl. No.	Source of revenue	2005-2006 (Revised Estimate)	2006-2007 (Budget Estimate)
	Deduct refunds (-)	7.38	5.20
	Total	15577.58	17138.20

1.8.2. Expenditure and outlay

The plan outlay under forests during 2006-2007 is Rs 19375.21 lakhs. Details of expenditure incurred during 2004-2005 and 2005-2006 under various schemes is given below:

(Rs. in lakhs)

Name of the Scheme(s)	Expenditure during 2004-2005 (Actuals)	Expenditure during 2005-2006 (Revised Estimate)	Budget Estimate for 2006-2007 (Proposed)
State Forestry Schemes	11136.40	15387.19	18134.95
Centrally Sponsored Schemes (100%)	488.90	545.56	564.13
Schemes shared between State and Centre	499.26	608.04	676.13
Total	12124.56	16540.79	19375.21

1.9. MAJOR SCHEMES FOR 2006-2007 (ONGOING SCHEMES)

1.9.1. Tamil Nadu Afforestation Project (TAP)

Forests in Tamil Nadu are mostly confined to the Western Ghats, Eastern Ghats and the Deccan plateau in between. Owing to excessive grazing, forest fires and head load removals, these forests have been subjected to heavy biotic pressure and consequently a sizeable extent has become degraded. Poverty leading to destruction of forests and destruction of forests leading to poverty constitute a vicious circle. This trend was reversed over an extent of 4.80 lakh hectares of degraded forests along with the concurrent development of 1367 villages lying in the fringes of these forests during the period from 1997-98 to 2004-05 with overall expenditure of Rs. 688 crores under this project. There was an immediate need to continue and consolidate the Joint Forest Management (JFM) gains in more number of forest fringe villages and to restore the residual degraded forests and therefore, the Tamil Nadu Afforestation Project Phase II was conceptualized and posed to the Japan Bank for International Co-operation (JBIC) which was agreed to by the JBIC, Tokyo.

Under TAP Phase-II, it is proposed to cover 800 interface villages including 150 tribal villages covering 1,77,500 hectares of degraded forests. The main strategy is to treat the area through Joint Forest Management on integrated watershed basis. Socio-economic upliftment by poverty alleviation and emancipation of women through Self Help Groups (SHGs) will also get due priority in the

programme villages under Buffer Zone activities. Tribal life support system has been affected due to various factors. As the tribals are vital for biodiversity conservation, Integrated Tribal Development Programme (ITDP) will be implemented in 150 villages out of those 800 villages covered under the TAP-II programme to uplift the economic conditions of the tribals. Tribal people will also be encouraged for alternate employment avenues. In addition, Geographical Information System (GIS), Forestry Extension, Forestry Research, Infrastructure Development and Human Resources Development, etc., will also be given a very big thrust under the Project. This TAP-II Project is being implemented from 2005-2006 to 2012-2013 with a financial outlay of Rs.567.42 crores. During the second year of the TAP Phase-II project i.e., 2006-2007, it is proposed to implement it at a total cost of Rs.101.42 crores covering 45250 hectares of degraded forests of 205 forest fringe villages including 40 tribal villages.

1.9.2. National Afforestation Programme (NAP)

In order to establish linkages between rural development, assured rural employment generation and forest conservation, the Government of India has contemplated a concept of Forest Development Agency with interlink approaches under a single umbrella scheme called "National Afforestation Programme". The Government of India funded this scheme and is being implemented from the year 2002-2003 onwards through the 32 Forest Development Agencies on Joint Forest Management basis in the implementing divisions covering territorial and wildlife divisions with the total outlay of Rs.9159.44 lakhs up to 2006-2007. Under this programme, the Government of India has released Rs. 5723.18 lakhs and the expenditure incurred till the end of 2005-06 stands at Rs. 5066.36 lakhs. For the year 2006-2007, the Government of India has sanctioned Rs. 1815.08 lakhs for these 32 Forest Development Agencies.

1.9.3. Wildlife Schemes

Wildlife schemes in the State are implemented with the main objective to conserve and protect the flora and fauna of the protected areas. Protected area management, wildlife protection and conservation have been given a new scientific orientation by undertaking development works like habitat improvement measures, research and development, conducting of scientific census, education awareness programmes, protection measures, eco-tourism, anti-poaching camps, fireline clearing, providing drinking water facilities to the local villagers, health camps and erection of publicity hoarding etc., in Sanctuaries, National Parks and Biosphere Reserves of the State. Wild conflict resolution through habitat improvement and timely compensation relief are new areas of attention. Habitat mapping, zonation, habitat and multiple species conservation are the new strategies adopted.

Arignar Anna Zoological Park is one of the biggest and most scientifically managed zoos in India. Special emphasis is given for ex-situ conservation of endangered species, enclosure enrichment, zoo education, zoo sanitation, landscaping and public amenities in the zoo. Wildlife conservation outside protected areas and national parks are also being given adequate attention through various programmes. The zoo has taken the responsibility for the rescue and rehabilitation of problematic and surplus animals from circuses and other agencies.

During 2005-2006, these schemes have been implemented at a cost of Rs. 789.17 lakhs. During 2006-2007, the outlay for this scheme is Rs. 971.10 lakhs.

1.9.4. Tank Foreshore Plantations

Tamil Nadu Forest Department had been implementing the Social Forestry Project with the financial assistance from the Swedish International Development Authority, Sweden since 1981. Raising of karuvel trees in the lakes and tank foreshores was the major component under this scheme. The financial assistance from Sweden was stopped from 1996. During 2005-2006, this scheme was implemented under State fund at a cost of Rs.342.36 lakhs over 2930 hectares. It is proposed to continue this scheme during 2006-2007 at a cost of Rs. 350.00 lakhs over 2880 hectares.

1.9.5. Hill Area Development Programme (HADP)

This scheme is being implemented for eco-restoration in the Nilgiris District with the objective of enlarging the permanent green cover and regulating the biotic interference in the forests to preserve, protect and develop the ecological conditions through afforestation and soil conservation and other developmental activities. Activities like tree planting in the degraded forest areas, erection of chainlink fence around shola forests and also for Reserve Forests where so many wildlife animals live enriching degraded sholas through soil and water conservation measures, scraping and maintenance of fire lines to prevent forest fire are being executed under this scheme. During the year 2005-2006, this scheme has been implemented at a cost of Rs.383.79 lakhs and for the current year of 2006-07, it is proposed to implement this scheme with the financial outlay of Rs. 282.87 lakhs for implementation of forestry sector schemes in the Nilgiris District.

1.9.6. Western Ghats Development Programme (WGDP)

The Western Ghats in Tamil Nadu cover an area of 5596 sq. kms of forests of the total forest area of the State. To avoid the degradation of forest eco-system and to improve the existing status of forests with the enriched fauna and flora of Western Ghats, gap planting, construction of water harvesting structures in micro watersheds, planting with minor forest produce species and habitat amelioration and manipulation for wildlife are being undertaken by involving people through Joint Forest Management on integrated watershed basis.

This scheme has been implemented at a cost of Rs.364.28 lakhs during 2005-2006 and is going to be implemented with a financial outlay of Rs. 400.00 lakhs during 2006-2007.

1.9.7. Raising teak plantations on padugai lands

The Government have accorded administrative sanction for raising teak plantations in Padugai lands of Thanjavur, Tiruchirappalli, Madurai, Erode and Salem divisions at a cost of Rs. 2,139.827 lakhs during the period of 5 years from 2003-2004 to 2007-2008 covering an area of 16,050 hectares. This scheme has been implemented at a cost of Rs.470.00 lakhs covering 3295

hectares during 2005-06. During the current year 2006-07, an area of 3280 hectares would be covered at a cost of Rs. 470.00 lakhs.

1.9.8. Integrated Forest Protection

The main objective of this scheme is to control forest fires and strengthen the forest protection in Tamil Nadu. To achieve these objectives, the Forest Department is undertaking works like fireline clearing, creation of water bodies, assistance to Joint Forest Management Committees to purchase vehicles and communication equipments to improve surveillance mechanism besides purchase of fire fighting tools, etc.

During 2005-2006, this scheme has been implemented at a cost of Rs.200.00 lakhs. During 2006-2007, it has been proposed to continue this scheme with an outlay of Rs. 485.00 lakhs

1.9.9. Integrated Tribal Development Programme (ITDP)

Under this scheme, raising of plantations in tribal areas, construction of school buildings, formation of roads in tribal areas and departmental activities in sandal estates are proposed to be carried out.

1.9.10. Village energy security through bio-mass

In Tamil Nadu, there are many remote villages and hamlets, which do not have the supply of electricity as they are not covered through grid extension. To provide electricity to such households in remote villages and hamlets it is proposed to provide electricity through renewables energy resources under a project titled "Village Energy Security through Bio-mass" to produce electricity as sanctioned by the Government of India through the Tamil Nadu Energy Development Agency (TEDA) at a cost of Rs. 56.36 lakhs.

1.9.11. Forest Research

The main focus and thrust of forest research in Tamil Nadu is in the fields of bio-diversity conservation and bio-productivity enhancement. The above scheme was implemented at a cost of Rs.203.00 lakhs during 2005-2006, and it is being continued during 2006-2007 at a cost of Rs.203.00 lakhs.

1.9.12. Gulf of Mannar Biosphere (GoMB)

This GEF-UNDP supported project is designed to demonstrate how to integrate bio-diversity conservation into coastal marine management plan and implement the same in a large biosphere reserve with various multiple uses. The project has also aimed at committed and innovative approach to develop a long-term multisectoral conservation programme in the Gulf of Mannar Biosphere Reserve Area. The project stipulated establishment of a Trust (Gulf of Mannar Biosphere Reserve Trust – GOMBRT) as an independent governmental statutory body to holistically implement the activities and to play more than an advisory role as a flexible transparent system which will facilitate appropriate integrated coastal development. The total project cost is Rs.140 crores, which includes

contribution of Rs.40.00 crores from GEF-UNDP and Rs. 100.00 crores from the Government of Tamil Nadu, the Government of India and Private sector.

Release and utilization of funds:

Year	Opening Balance Rs.	Amount received from UNDP Rs.	Approved work-plan Rs.	Amount spent Rs.	Balance Rs.
2003	--	50,00,000	--	35,02,487	14,97,513
2004	14,97,513	80,00,000	1,60,43,500	84,73,687	10,23,826
2005	10,23,826	91,22,000	2,85,15,000	86,58,886	14,86,940

1.10. NEW PROJECTS

1.10.1. Raising of Jatropha seedlings;

The Government of India, Ministry of Rural Development has sanctioned Rs. 1050 lakhs for raising 350 lakhs of Jatropha seedlings through 26 Forest Development Agencies (FDA) for the year 2006-07. The seedlings produced are to be distributed free of cost for cultivation in waste and common lands of Tamil Nadu. The main objective of the scheme is to achieve economic development of farmers, and to help produce "bio-diesel" as an energy resource.

1.10.2. Biodiversity conservation and ecological security of coastal eco-system under Emergency Tsunami Reconstruction Project(ETRP)

The shelterbelt and mangrove plantations along the coastline of Tamil Nadu protected the people and their properties from the tsunami waves which struck the State on 26.12.2004. Coastal areas of the State are susceptible to the periodical cyclonic storms and therefore during 2005-06, 2000 hectares of shelterbelt and 700 hectares of mangrove plantations have been raised in the coastal districts of Tamil Nadu to protect life and property of the coastal people from natural calamities like tsunami and cyclone etc. This project will further be implemented during the year 2006-2007 at the cost of Rs.10.73 crore to raise shelterbelts over 2000 hectares and mangrove plantations over 700 hectares.

1.10.3. National Cyclone Risk Mitigation Project

Under this project, a proposal has been sent to the Special Commissioner and Commissioner of Revenue Administration on raising shelterbelt and mangrove plantations in the coastal areas of the State at a cost of Rs. 2491.48 lakhs covering an area of 3200 hectares of mangroves and 3600 hectares of shelterbelt plantations to protect the people and property from natural calamities like cyclone and tsunami. The main objective of this project is to provide permanent protection to the people living in the coastal areas from natural calamities viz., cyclone and tsunami.

1.10.4. Infrastructure development of tribal schools run by Forest Department

A proposal to improve the facilities like toilet, drinking water at school premises and to construct new hostel and additional class rooms to the existing 19 Tribal schools run by the forest department at a cost Rs.481.63 lakhs is being posed to NABARD for funding, during the current year 2006-2007.

1.10.5. Forest maintenance works as per the recommendation of 12th Finance Commission

As per the recommendations of 12th Finance Commission, the State Government has sanctioned a sum of Rs.30.00 crores for the maintenance of forests from 2006-2007 to 2009–2010. A sum of Rs. 1332.00 lakhs has been released for carrying out the maintenance of forests during 2006-2007 under following components:

	(Rs. in lakhs)
➤ Conservation and Eco-restoration of degraded forests in Nilgiris and Palani Hills	238.50
➤ Improving communication network by improving roads	577.50
➤ Bio diversity conservation by habitat improvement	362.00
➤ Maintenance and special repairs of forest buildings	135.00
➤ Raising shola seedlings for afforestation of clear felled pine and blue gum plantations in Kodaikanal division.	19.00
Total	1332.00

1.10.6. Part– II schemes of 2006-2007

The following 24 Part-II Schemes, with an outlay of Rs.886.20 lakhs, for protection, buildings, roads, forest settlement, improvement of zoos, etc. have been approved by Standing Finance Committee for implementation during 2006-2007.

Sl. No	Name of the Scheme	Amount (Rs. in lakhs)
1	Providing drinking water facilities to wild animals in 15 divisions.	30.00
2	Improvement and maintenance of 12 Medicinal Plants Conservation Areas and 8 Medicinal Plants Development Areas	10.00
3	Carrying out wildlife census in reserve forests outside protected areas in 25 divisions	5.00
4	Mapping and assessment of biodiversity and preparation of Working Plans by 4 Working Plan circles.	8.00
5	Habitat improvement for 5 bird sanctuaries	10.00
6	Improvement and renovation of park house in Guindy National Park	3.00

Sl. No	Name of the Scheme	Amount (Rs. in lakhs)
	house in Guindy National Park	
7	Management of Kalakkadu Mundanthurai Tiger Reserve	13.00
8	Improvement of Children's Park in Guindy National Park	25.00
9	Driving menaceful animals into forests	30.00
10	Raising Shola forest in clear felled pine areas over 500 hectares at Kodaikanal	100.00
11	Raising bamboo plantation in 300 hectares in 3 divisions	28.00
12	Carrying out afforestation works in the encroachment evicted areas in Madurai and Coimbatore circles over an area of 170 hectares	12.00
13	Forest Settlement – construction of 1500 cairns during 2006-2007	12.00
14	Imparting weapon training to Forest Personnel	7.50
15	Lorry for elephant rescue, transport and management, Mudumalai Wildlife Sanctuary and National Park	11.00
16	Proposal for providing assured and safe drinking water to 12 tribal settlements through pipelines	30.00
17	Raising 1,00,000 taller seedlings in 30 x 45 cm container	30.00
18	Research of mass multiplication of various types of species	5.00
19	Improvement of infrastructure facilities in Tamil Nadu Forest Academy, Coimbatore	25.00
20	Conducting in -service training to field staff at Tamil Nadu Forest Training College, Vaigai Dam	15.50
21	Improvement to Panagal Building	30.00
22	Extension of Laboratories at State Forest Research Institute, Kolapakkam	40.00
23	Improvement of Kurumpapatti Mini Zoo at Salem	45.70
24	Improvement of Roads in forest areas	
(i)	Improvement to Kanavaipudur to Kannapadi Road – 4.5 kms in Salem district.	13.50
(ii)	Improvement to Kanjery to Kondayanur road – 5 kms in Salem district.	15.00
(iii)	Improvement to Kanjery to Pannaikaradu road - 4 kms in Salem District	12.00

Sl. No	Name of the Scheme	Amount (Rs. in lakhs)
(iv)	Improvement to Malaiyandipatti to Nellivasel road - 2.6 kms in Vellore district	30.00
(v)	Improvement to Arakadavu to Mannukuttai road - 3 kms in Coimbatore district	45.00
(vi)	Improvement to Nallavanaipatti to Naduvalavu road – 1.6 kms in Tiruchirappalli District	20.00
(vii)	Improvement to Moolakadu – Sembullchampatty Road in the Pachamalais (Thuraiyur Taluk)- 10.0 kms in Tiruchirappalli District	100.00
(viii)	Improvement to R. Combai – Methapatty road – 2.84 kms (Rs. 8.80 lakhs/ km) in Dindigul district	25.00
(ix)	Improvement and Maintenance of Omandur to Pulivalam Road in Musiri Taluk of Tiruchirappalli District (3.75 kms)	32.70
(x)	Improvement and Maintenance of Omandur to Thinnanur Road in Musiri Taluk of Tiruchirappalli District (3.2 Kms).	23.50
(xi)	Maintenance of Forests roads from Top Slip to Monambally via Varagaliyar in Indira Gandhi Wildlife Sanctuary, Pollachi of Coimbatore District (34 Kms)	43.80
	Total	886.20

1.11. CORPORATIONS

1.11.1. Tamil Nadu Forest Plantation Corporation Limited (TAFORN), Tiruchirappalli

Tamilnadu Forest Plantation Corporation Limited was formed during 1974 with headquarters at Tiruchirappalli comprising six regions namely, Pudukottai, Aranthangi, Karaikudi, Vridhachalam, Villupuram and Tirukoilur with 74,917 hectares of forest areas taken on lease from the Tamilnadu Forest Department.

The main objective of the Corporation is to produce and supply industrial raw materials like pulpwood to Paper Mills in Tamilnadu mainly Tvl. Tamil Nadu News Print and Papers Board Limited, Karur and Seshashayee Paper and Boards Limited, Pallipalayam, Namakkal District. Apart from this, Cashew plantations are raised and maintained from which Cashew nuts are procured and sold. Raising of timber, plywood, matchwood and other product yielding species is also one of the objectives of the Corporation.

Very high yielding hybrid varieties with seeds imported from Australia are being raised. Fast growing Eucalyptus hybrid clonal plantations are raised every year with bio-fertilizer and bio-nutrients

inputs. These techniques will result in enhancing the pulpwood production from 1-lakh tonnes per year to around 3 lakh tonnes per year in future years. Similarly, appropriate package of practice with research inputs is being adopted in raising high yield Cashew plantations.

Casuarina and Teak were grown in the Cauvery and Agniyaru Padugai basins in the past. They have dried up because of the lack of regular flow of water in the river. Therefore, new varieties of Casuarina that could withstand the moisture stress have been identified and seeds have been imported from Australia and Indonesia and plantations are raised. Seeds from the very superior trees from these plantations will be used for seed collection and the seeds will be supplied to the public also.

To meet the requirement of timber, fast growing, drought tolerant superior quality timber species like African mahogany are being planted in these regions. Seeds are being imported from Africa for this purpose.

For the production of Bio-diesel, seeds from the very high yielding varieties of Jatropa have been imported from Zimbabwe and plantations are being established in all the six regions. Best performing plants will be identified and multiplied for raising large-scale plantations in the regions concerned. These seeds will be supplied to the public. Similarly, it is proposed to set apart Bio-diesel Zone in the Melchengam Farm consisting of 4000 hectares. In this Farm, apart from the Bio-diesel plants like Jatropa and Pungan, very superior fast growing pulpwood species and thornless bamboos will be cultivated.

Last year (2005-06) 80 lakhs of Eucalyptus clonal plants were produced and this year (2006-07) it is proposed to produce about 100 lakhs clonal plants out of which 80 lakhs will be utilized for TAF CORN planting and 20 lakhs will be sold to Tamil Nadu News Print and Paper Board (TNPL) for contract farming to be planted in farm lands by agriculturists.

In the Sandalwood Products Factory of Thekkupattu (Vellore District), apart from sandalwood oil, sandalwood products like chips, powder etc., are being manufactured and sold to the public. For the year 2006-07, the budgeted profit of the Sandalwood Product Factory, Vaniambodi will be Rs.339.38 lakhs. The possibilities of setting up Raw Cashewnut Processing Unit in this Factory campus is also under consideration of the Corporation.

This Corporation has been consistently making profit every year. The following are the financial achievements of the Corporation: -

Financial achievement

Sl. No.	Item	2004-2005 (Actuals)	2005-2006 (Revised Estimate)
		Rs. in Lakhs	
a)	Total income	3765.60	3580.75

b)	Total expenditure	3082.58	2844.35
	Net Profit (+) / Loss (-) (a-b)	(+) 683.02	(+) 736.40

The Corporation will strive hard to improve its performance during the current year also.

**1.11.2. Tamil Nadu Tea Plantation Corporation Limited
(TANTEA), Coonoor, The Nilgiris District**

With a socio-economic objective of rehabilitation of the repatriates from Sri Lanka to India under the Shastri - Srimavo Pact, a project for raising Tea Plantation was started by the Government of Tamil Nadu as Government Tea Project in 1968 and implemented through the Forest Department. Subsequently, the project was registered as a Government Undertaking under the Companies Act, 1956 called "Tamil Nadu Tea Plantation Corporation Limited" and is popularly known as TANTEA. It came into effect from 01.04.1976. The authorized share capital of this Corporation is Rs.10.00 crore and the paid-up share capital is Rs.5.96 crore.

The planting and rehabilitation programmes were implemented in a phased manner. This Corporation has raised tea plantation over an area of 4431.92 hectares and rehabilitated 2445 families repatriated from Sri Lanka. At present, the Corporation is providing employment to about 6250 permanent workers and about 3000 casual workers.

The Corporation is providing housing and other amenities like free water supply, free medical attendance, crèche, primary education, maternity benefit, sickness benefit, leave with wages, national and festival holiday wages, warm clothing, bonus, gratuity, provident fund, etc., to the permanent workers.

The actual physical achievement of green tea leaves and made-tea for the year 2005-2006 and estimates for the year 2006-2007 are furnished below: -

1.11.3. (a). Yield of green tea leaves:

(lakhs kilograms)

2005-2006 (Actuals)	Estimate for 2006-2007
443.24	480.45

(b) Made-tea production:

(lakhs kilograms)

2005-2006 (Actuals)	Estimate for 2006-2007
106.38	115.31

1.11.4. Income and expenditure details

(Rs. in lakhs)

Year	Revenue by sale of tea and other items	Expenditure	Profit (+) Loss (-)
2004-2005 (Actuals)	5394.13	4871.16	(+) 522.97
2005-2006 (Provisional)	4213.00	4913.10	(-) 700.10
2006-2007 (Provisional)	5349.00	5269.00	(+) 80.00

1.11.5. Arasu Rubber Corporation Limited (ARC), Nagercoil

Arasu Rubber Corporation Limited (ARC) has rubber plantations over an area of 4279.78 hectares of forestlands taken on lease from the Forest Department in Kanyakumari district, which is the only district in the State with soil, climate and topography suitable for the growth of rubber trees. Arasu Rubber Corporation was registered on 20.08.1984 under the Companies Act, 1956. The authorised capital of the Corporation is Rs.4 crore. The paid-up share capital is Rs. 2.00 crore. There are 1588 permanent workers including 386 Sri Lankan repatriates.

More than 70% of rubber trees under the control of Arasu Rubber Corporation were planted during 1960s and 1970s. As per the guidelines of the Rubber Board, the trees which have attained 30 years or more, will yield less and therefore it is uneconomical to maintain such plantations. In order to meet out the loss in production and to make the Corporation more viable and to provide continuous employment opportunities to the workers, a decision was taken to undertake replanting works with high yielding clones as advised by the Rubber Board, after felling of matured rubber trees. During 2004-2005, replanting works were completed in 95.20 hectares. During 2005-2006, replanting was done over 10.20 hectares. A nursery is being raised and maintained for replanting during 2006-2007.

1.11.6. Production and Sales (Revenue and Expenditure)

(Rs. in lakhs)

Year	Field latex production	Revenue by sale of rubber and other items	Expenditure	Profit (+) Loss (-)
2004-2005 (Actuals)	2037.00	1492.01	1471.09	(+) 20.92
2005-2006 (Estimate)	2500.00	1979.79	1699.80	(+) 279.99
2006-2007 (Budget Estimate)	2500.00	1872.28	1534.00	(+) 338.28

1.12. THE PATH AHEAD

The forests and wildlife will be conserved and developed to stabilize environmental security and all appropriate measures will be undertaken for protecting and conserving the natural resources including birds and wildlife unique in Tamil Nadu to achieve sustainable development of the State.

2. DEPARTMENT OF ENVIRONMENT

The survival and well-being of any nation depends on sustainable social and economic progress that satisfies the needs and aspiration of the present generation without compromising the interest of future generations. Environmental conservation is an integral part of the socio-economic development but due to population explosion and increasing industrialization a serious challenge has been posed to the preservation of our terrestrial and aquatic ecosystems. Conservation and enhancement of life support systems like land, water, forests and biodiversity are important for ecological balance. 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 at large.

2.1 OBJECTIVES OF DEPARTMENT OF ENVIRONMENT

The Department of Environment was created in 1995 as the Nodal Department for dealing with environmental management of the State. The Department is entrusted with the implementation of major projects like pollution abatement in the rivers Cauvery, Vaigai and Tamiraparani; Pollution abatement in Chennai City waterways; National Lake Conservation Programme besides all aspects of Environment other than those dealt with by the Tamil Nadu Pollution Control Board.

Activities such as recycling of solid and liquid wastes, bio-composting, rainwater harvesting, tree planting, etc., are important in achieving environmental conservation. Environment conservation requires attitudinal change and generation of awareness among the people. This is best done by infusing these ideas in the young minds of school children. Therefore, the schemes proposed for 2006-2007 include components, which are in line with the Tenth Five Year Plan Proposals.

2.2. COASTAL ZONE MANAGEMENT

In order to protect the coastal areas and implement Coastal Regulation Zone Notification 1991, Government of India have constituted a State Level Coastal Zone Management Authority with the Secretary to Government, Environment and Forests Department as the Chairman and the Director of Environment as Member Secretary. Various proposals are scrutinized and processed by this Authority. Similarly, the functions of the 'Expert Committee for issue of environmental clearance for Thermal Power Projects' and "Committee for monitoring Fly Ash Notification" are also coordinated by this department.

2.3. ENVIRONMENT MANAGEMENT AGENCY OF TAMIL NADU (EMAT)

2.3.1 In order to coordinate with the Government of India and various other implementing agencies and effective monitoring of implementation of the works under the "National River Conservation Plan", "National Lake Conservation Plan", an autonomous agency called "**Environment Management Agency of Tamil Nadu(EMAT)**" has been constituted in 2002. This agency is coordinating to strengthen the river & lake cleaning activities of the Department of Environment. The following schemes are coordinated by Environment Management Agency of Tamil Nadu.

2.3.2 National River Conservation Plan (NRCP)

The department has been implementing a centrally sponsored scheme namely, "Abatement of Pollution in five polluted stretches of river Cauvery in Tamil Nadu" at an overall project cost of Rs.3627.75 lakhs for a period of 10 years since 1996-1997. A sum of Rs.2105.33 lakhs has been spent by the executing agencies viz., Tamil Nadu Water Supply and Drainage Board and local bodies concerned till 31.03.2006. The above project is being continued as a 100% centrally sponsored scheme till 2006-2007.

Under Non-core schemes, construction of low cost sanitation facility, crematoria and river front development have been completed by the local bodies. Under Core-schemes, interception and diversion as well as sewage treatment works are being implemented through the Tamil Nadu Water Supply and Drainage Board in Erode, Bhavani, Komarapalayam, Pallipalayam and Tiruchy towns. All the works in Tiruchy, Komarapalayam and Erode have been completed. The works in Bhavani are under progress. Approval of Detailed Project Report is awaited in respect of Pallipalayam.

2.3.3. Chennai City River Conservation Project (CCRCP)

Government of India have approved a project costing Rs.49,152 lakhs for intercepting and treating sewage in six Chennai City Waterways. The Chennai City River Conservation Project is being implemented through Chennai Metropolitan Water Supply and Sewerage Board. The project mainly endeavours to intercept over 314 sewage outfalls joining the Chennai City Waterways viz., Cooum, Buckingham Canal, Adyar, Otteri Nullah, Captain Cotton Canal and Mambalam drain. Out of the 16 packages under this project, 13 packages have been completed and rest of the works are in progress in 3 packages. Over 99.8% physical work has been completed and a total expenditure of Rs.35,845.90 lakhs has been incurred under this project upto March 2006.

2.3.4. National River Conservation Programme – Seven Additional Towns

Government of India have approved a proposal for cleaning the River Cauvery, Vaigai and Tamiraparani along seven towns viz., Tiruchy, Thanjavur, Kumbakonam, Karur, Mayiladuthurai, Madurai and Tirunelveli at a total cost of Rs.57530 lakhs. Of this, Rs.28,215 lakhs will be grant from Government of India and the rest will be met by Government of Tamil Nadu and the local bodies concerned and public participation. The project spread over 4 years, envisages provision of underground sewerage system, sewage treatment plants, low cost sanitation and solid waste management to rid these rivers of pollution.

Pollution abatement schemes in the above 7 additional towns will be continued during 2006-2007 with the assistance of National River Conservation Directorate, Government of India. The Detailed Project Reports have been approved by the Government of India for all the seven towns. The core works are being executed by Chennai Metro Water Supply and Sewerage Board in Madurai and Kumbakonam. The works in respect of Karur, Mayiladuthurai, Thanjavur, Tirunelveli and Tiruchy

are being implemented through Tamil Nadu Water Supply and Drainage Board. An amount of Rs.32,592.38 lakhs has been spent upto March 2006 towards the scheme.

2.3.5. Palar River Conservation

A project was prepared and submitted to Government of India for approval for providing underground sewerage to **Ambur** Municipality besides diluting the treated industrial effluent containing high Total Dissolved Solids (TDS) with treated domestic wastewater at an estimated total cost of Rs.25 crores. Similar proposals for Ranipet and Wallajahpet municipalities by providing underground sewerage system to minimize pollution of the river Palar besides bringing down the total dissolved solids of the treated industrial effluent was prepared and sent to Government of India for approval. The project will be undertaken with 70% financial assistance of the Ministry of Environment and Forests Government of India and the rest from the contribution of the Municipalities (25%) and industries (5%). The Government of India's approval is awaited for these two schemes.

2.3.6. National Lake Conservation Programme (NLCP)

Environmental upgradation through bioremediation of Ooty and Kodaikanal Lakes is being undertaken under the National Lake Conservation Programme at a total cost of Rs.688 lakhs. The works are being executed by the Tamil Nadu Water Supply and Drainage Board, the Public Works Department and the local bodies. An expenditure of Rs.33.90 lakhs has been incurred on Kodaikanal Lake Project and Rs.162.90 lakhs has been incurred on Ooty Lake project upto March 2006. Revival of Ooty lake has been completed. Ooty lake has become clean now after treatment

2.4. OTHER ACTIVITIES OF THE DEPARTMENT

2.4.1. Environmental Awards

The State Government honour the best Non-Government Organisations, experts and individuals in recognition of their excellent contribution in the field of environment and distribute the environment awards during the World Environment Day celebrations on June 5th every year.

2.4.2. Eco-Clubs

To create environmental awareness among school students, 1260 eco-clubs have been formed in 30 districts by this department involving educational institutions and non-government organisations. Besides these Eco-Clubs, workshops and seminars are also conducted on environment and allied fields with the help of forest officials in the districts. This scheme will be continued during 2006-07 also.

2.4.3. Environmental Research & Development

Innovative environmental research projects have been promoted in the areas of bio-remediation of lakes and remediation of effluent affected sites using appropriate tree species. A Rapid Environmental Impact Assessment of Tsunami affected coastal and marine areas has been undertaken during February-March 2005.

Out of a sum of Rs.10 lakhs allotted for the year 2004-2005, a sum of Rs.4.94 lakhs has been released to the institutions. The balance amount will be released during 2006-2007.

2.4.4. Conservation of Coastal Eco System

Coastal area forms a highly complex and dynamic eco-system, sensitive to developmental pressures such as industrialization. These could be minimized through prudent Coastal Zone Management practices. Conservation and regeneration of existing mangroves along the coast is being undertaken by the Forest Department and tourism activities by the Department of Tourism. Fisheries, Ports and Industries have also important role in the coastal development.

A pilot Integrated Coastal Zone Management Plan involving various departments, agencies and all the stakeholders is being prepared for the Pulicat to Palar stretch of Tamil Nadu coast by the Institute of Ocean Management, Anna University, Chennai. This work will be completed during the current year. Out of the total sanction of Rs.10 lakhs, Rs.4.95 lakhs was released during the year 2004-05. The balance will be released in the current financial year after receipt of final report.

This Department is also implementing Coastal Regulation Zone Notification, 1991 issued under the Environment (Protection) Act. 1986. The Government of India have emphasized that violation along the coast should be checked by the State Government through increased surveillance. A green squad for coastal conservation for checking Coastal Regulation Zone violations has been formed. A sum of Rs.2 lakhs has been sanctioned as recurring expenditure towards the functioning of the coastal green squad.

2.5. ACHIEVEMENT IN THE SCHEMES IMPLEMENTED WITH 100% GOVERNMENT OF INDIA GRANT DURING 2005-2006

2.5.1. National Green Corps (NGC)

In order to strengthen environmental consciousness among students, a National Green Corps have been launched in 4500 schools located in 30 districts @ 150 schools per district. The Government of India have approved a grant of Rs.2500/- per school every year. Training was given to master trainers and teacher coordinators of each district. State level steering committee and district level monitoring committees have been formed to monitor the implementation of this programme. This ongoing scheme with 100% Government of India grant will be continued during this year also. The Government of India have informed that additional 100 schools per district will be supported from the current year 2006-2007. Hence, 3000 more schools will benefit from this programme. Nearly 2.50 lakh children are participating in the awareness movement involving National Green Corps and eco-clubs. During the current year 1,50,000 children will be enrolled additionally under this scheme.

2.5.2. Environmental Information System (ENVIS)

The Environmental Information System Cell sponsored by the Government of India is functioning in the Department of Environment. This environment information system cell will provide

information on various aspects about the state of environment of Tamil Nadu covering its rich biodiversity and river cleaning activities undertaken in this state through a web based information system. For this scheme 100% assistance from Government of India will be available during 2006-2007.

2.5.3. State of Environment (SoE)

The preparation of a State of Environment Report has been undertaken at a total cost of Rs.12.50 lakhs with the financial assistance from the Government of India and a sum of Rs.5 lakhs received so far has been spent on this programme. This scheme will be continued during the current year 2006-2007 with additional features like State of Environment atlas, State of Environment photo catalogues, State of Environment video and an interactive website on State of Environment of Tamil Nadu.

2.6. SCHEMES TO BE CONTINUED DURING 2006-2007 WITH WORLD BANK ASSISTANCE

2.6.1. Demarcation of High Tide Line (HTL) along the Coast of Tamil Nadu from Palar River Mouth to Thengapattinam in Kanyakumari District

The Department of Environment has already undertaken high tide line demarcation from Pulicat Lake to Palar River Mouth through the Chief Naval Hydrographer, Dehradun at a cost of Rs.50 lakhs. Demarcation of high tide line for the remaining stretch of the coastline including tidal influenced water bodies will be undertaken and the high tide line reference points will also be superimposed on coastal regulation zone maps in 1:25000 scale and also on the village cadastral maps containing survey numbers in 1:5000 scale at a cost of Rs.2 crore. The work will be commenced during the year 2006-07.

2.6.2. Erection of Stone Pillars on High Tide Line (HTL) reference points

In order to facilitate the coastal community to identify the high tide line on ground, high tide line stone pillars will be fixed along the coast wherever necessary at a cost of Rs.1 crore. This work will be commenced during the year 2006-07.

2.6.3. Preparation of Integrated Coastal Zone Management Plan (ICZMP)

The coast of Tamil Nadu is replete with several economic activities like industries, tourism and fisheries. To minimize the conflicts of interest, an appropriate management plan rationally integrating the activities of all the stakeholders will be essential. In order to achieve economic prosperity without sacrificing ecological security, Integrated Coastal Zone Management Plan is being prepared for the coastline of Tamil Nadu at a cost of Rs.2.50 crore. The work will be commenced during the year 2006-07.

2.6.4. Preparation of Coastal Vulnerability Maps

The setback lines in the coastal areas will be drawn based on the vulnerability of the coast to natural and manmade hazards. For the purpose of assessment of the vulnerability of the coast,

seven parameters of coast, as suggested by Swaminathan Committee Report, will be taken into account viz., elevation, geology, geomorphology, sea level trends, horizontal shore line displacement (erosion / accretion), tidal ranges and wave heights. The preparation of these Coastal Vulnerability Maps will be undertaken at cost of Rs.2 crore. This work will be commenced during the year 2006-07.

2.6.5. Bioremediation of Selected Water Bodies in Chennai, Cuddalore, Nagapattinam and Kanyakumari Districts

The ground water potential available and the ground water quality in an area has to be taken into account before embarking on any new development activities such as housing schemes for those affected by Tsunami in Chennai, Cuddalore, Nagapattinam and Kanyakumari Districts. In order to improve the fish catch and the surface water quality, a detailed study is required to identify coastal water bodies that are polluted and to take up suitable measures for abatement of pollution in them through bioremediation. This will help to improve the immediate environment and quality of life of the people proposed to be rehabilitated. Considering these issues bioremediation of selected water bodies in 4 districts viz Chennai, Cuddalore, Nagapattinam and Kanyakumari, has been sanctioned at a cost of Rs.4 crore. This work will be commenced during the year 2006-07.

2.6.6. Capacity Building and Awareness Creation:

The concept of Integrated Coastal Zone Management Plan and coastal vulnerabilities being relatively new, it is important to develop awareness about the actual spirit of these plans among various stakeholders. Therefore, to develop suitable training modules for various stakeholders and also create awareness among the coastal communities about the coastal regulation zone, importance and advantage of Integrated Coastal Zone Management Plan and Vulnerability Maps, Rs.one crore has been sanctioned. Training programmes at different levels will be taken up for the Panchayat leaders, officials of the Government departments and the local bodies. Special awareness programme on Coastal Regulation Zone / Integrated Coastal Zone Management Plan will be conducted for better understanding of these concepts by the Coastal community and students of National Green Corps. The local academicians and non-government organisations will be involved in conducting workshops / seminars / street plays / exhibitions, etc. The work will be commenced during the year 2006-07.

2.6.7. Formation of One technical Cell at Chennai and two Project Co-ordination units at Nagapattinam and Thoothukudi

In order to facilitate the smooth progress of the projects and for better co-ordination between the projects preparing consultants and other Government Departments, one technical cell at Chennai and two project co-ordination units at Nagapattinam and Thoothukudi have been set up at a cost of Rs.53 lakhs. Strengthening of these units will be taken up during the year 2006-07. Similarly the Technical Cell at Chennai will be established during 2006-07.

2.6.8. Awareness programmes on Coastal Regulation Zone

In order to create awareness on Coastal Regulation Zone issues among field level functionaries of Government and Non-Governmental agencies in Coast Districts of Tamil Nadu sanction has been accorded for Rs.4.84 lakhs to conduct awareness workshops / seminars/ programmes. This work will be commenced during the year 2006-07.

2.7. SCHEMES TO BE CONTINUED DURING 2006-2007 WITH STATE GOVERNMENT FUNDS

2.7.1. Eco-city plan for Tiruvannamalai

For preparing the Environment Management Plan for the heritage town of Thiruvannamalai a sum of Rs.6 lakhs has been spent during the year 2005-06 and the balance amount of Rs.2 lakhs will be spent during this year.

2.7.2. Aesthetic Amelioration of Temple Hillock at Palani

The aesthetic amelioration of temple hillock of Arulmigu Dhandayuthapani Swamy of Palani in Dindigul district has been commenced at an expenditure of Rs. 5 lakhs in the year 2005-06 and a sum of Rs.5 lakhs will be spent during the current year for completion of the scheme.

2.7.3 Eco-Restoration Plan for Selected Lakes in and around Chennai City

Action is underway to prepare Detailed Project Report for comprehensive eco-restoration, for the following lakes in and around Chennai city at a cost of Rs.10 lakhs. 1. Pallikaranai marsh, 2. Chitalapakkam Lake, 3.Periya Eri-Tiruneermalai, 4. Palkani-Pallavaram 5. Madipakkam lake. Rs.3 lakhs has been spent and the balance amount will be spent during this year and the detailed project reports will be sent to Government of India for getting funds.

2.8. PART-II SCHEMES TO BE UNDERTAKEN DURING 2006-2007

2.8.1. Conducting competition on Environmental Awareness in each District

In order to create awareness among the members of eco-clubs / NGC's, competitions on environment topics will be conducted in each district at a cost of Rs.25,000/-. The scheme will be implemented at a total cost of Rs.7.50 lakhs during 2006-2007.

2.8.2. Conducting Environmental Awareness Camps

The Department of Environment has proposed to conduct environmental awareness camps for the students who participated in the environmental awareness competitions and teacher co-ordinators for three days. The scheme will be implemented at a total cost of Rs.15 lakhs at the rate of Rs.50,000/- per district during 2006-2007.

2.8.3. Grey water harvesting unit at K.K. Nagar, Tamil Nadu Housing Board Quarters complex

Grey water is specifically wash water, i.e. bath, dish, and laundry water excluding toilet wastes. When properly managed, grey water can be a valuable resource, which horticultural and

agricultural growers as well as home gardeners can benefit from. It can also be valuable to landscape planners, builders, developers and contractors because of the design and landscaping advantages of on-site grey water treatment / management.

Advantages of grey water harvesting:

- Reduction of load in Sewage Treatment Plants and hence reduction in cost of treatment
- Conservation of fresh water resources
- Improved aesthetic appeal when reused for gardening, parks and landscaping
- Involves people's participation

Activities involved:

- Installation of collection system and grey water harvesting units to collect 10,000 litres / day
- Installation of pumpset and accessories
- Installation of storage units and distribution system
- Developing parks/landscaping

The scheme will be implemented at a total cost of Rs.5 lakhs during 2006-2007.

3. TAMIL NADU POLLUTION CONTROL BOARD

INTRODUCTION

Tamil Nadu Pollution Control Board (TNPCB) enforces the provisions of the Water (Prevention and Control of Pollution) Act, 1974 as amended in 1978 and 1988, the Water (Prevention and Control of Pollution) Cess Act, 1977, as amended in 1991, the Air (Prevention and Control of Pollution) Act, 1981, as amended in 1987 and the provision/rules made under the Environment (Protection) Act, 1986 to prevent, control and abate pollution and for protection of environment.

3.1. ORGANISATIONAL SET UP

The TNPCB was established in 1982 and functions with its organization structure consisting of head-office at Chennai and 25 district offices. The Board has established 3 Advanced Environmental Laboratories, 10 District Environmental Laboratories, and one Mobile Environmental Laboratory.

3.2. MONITORING OF INDUSTRIES AND ISSUE OF CONSENT

The TNPCB is monitoring the industrial activities for prevention and abatement of pollution by periodical inspections and analysis of samples. As on 31.03.2006, TNPC Board has granted 6,034 and 5,962 consent orders for establishing the industry under Water and Air Act, respectively. The Board has also issued 24,957 and 22,103 consent orders for operating the industry under Water and Air Act, respectively. Continuous emphasis is given on compliance of pollution control norms by the industries. By closely monitoring the functions of pollution control systems, renewal of consent is given in time to all the industries, which have complied with the pollution control norms.

3.3. COMMON EFFLUENT TREATMENT PLANTS

The TNPCB plays an important role in the establishment of Common Effluent Treatment Plants (CETPs) for clusters of small scale industries in various parts of the State. The Board assists the units in mobilization of financial resources and in the technical scrutiny of the proposals for the common effluent treatment plants.

50 Common effluent treatment plants have been formulated in the following sectors:

<u>Sector</u>	<u>No. of CETPs</u>
Tanneries	24 Schemes
Textile (Bleaching & Dyeing Units)	25 Schemes
Hotels & Lodges	1 Scheme

Out of 50 CETPs formulated, 14 CETP schemes for tanneries, 18 CETP schemes for textile dyeing units and 1 CETP scheme for hotels and lodges are under operation. 10 CETP schemes for

tanneries and 7 CETP schemes for textile dyeing units are under various stages of implementation. State and Central Governments sanction the subsidy for implementing the CETP schemes.

The Government of Tamil Nadu has sanctioned Rs.25.90 crores towards subsidy for 48 common effluent treatment plants and out of this Rs.22.66 crores have been released as on 31.03.2003 through the Tamil Nadu Pollution Control Board and Tamil Nadu Leather Development Corporation. During 2003-2004, 2004-2005 and 2005-2006, State subsidy of Rs.86.49 lakhs to M/s. Kovai Telungupalayam Common Effluent Treatment Private Limited and Rs 114.32 lakhs to M/s Perundurai CETP has been granted.

3.4. AIR QUALITY MONITORING

With the increased industrial and commercial activities in the vicinity of major cities, the quality of the ambient air is being affected by emissions from the industries and from the ever increasing vehicular population. As per the provision of Air (Prevention and Control of Pollution) Act, 1981, the entire state of Tamilnadu has been declared as an air pollution control area.

3.4.1. Ambient Air quality Monitoring Programme

The Board is monitoring the ambient air quality in Chennai (3 stations), Coimbatore (3 stations), Thoothukudi (3 stations), Madurai (3 stations) and Salem (1 station) under the National Ambient Air Quality Monitoring Programme. Under the State Ambient Air Quality Monitoring Programme, the Board has established 5 ambient air quality monitoring stations in Chennai city and 5 in Tiruchirapalli. The programmes monitor the air quality in residential, commercial and sensitive zones of the cities.

3.4.2. Vehicular Emission Monitoring

The TNPCB is carrying out the vehicle emission monitoring since 1992 for testing the emissions from goods transport vehicles in and around Chennai city in three locations at Alandur, Madhavaram and Ambattur. Vehicles that do not comply with the emission standards are instructed to carry out corrective measures to comply with the emission standards. Emissions under control certificate are issued to only those vehicles which comply with the emission standards in the subsequent tests. In addition, 97 private agencies have been authorized by the Transport Department in Chennai urban agglomeration area to check the emission levels of the vehicles.

3.5. WATER QUALITY MONITORING

The basic objective of the Water (Prevention and Control of Pollution) Act, 1974 is to maintain and restore the wholesomeness of water. To ensure this objective, regular monitoring of water quality is required. The TNPCB is monitoring the inland water quality under two major programmes namely, Monitoring of Indian National Aquatic Resources (MINARS). Global Environmental Monitoring System (GEMS). Under MINARS programme, the rivers Thamiraparani, Palar and Vaigai and lakes

such as Udhamandalam lake, Kodaikanal lake and Yercaud lake are being monitored. Under the above two programmes the river Cauvery is being monitored. The programmes are funded by the Central Pollution Control Board, New Delhi. The TNPCB is also monitoring Chennai city water ways to assess the level of pollution by collecting water samples every month both at water bodies and industrial outlets.

3.6. MANAGEMENT OF HAZARDOUS WASTES AND CHEMICALS

The TNPCB is taking effective steps for safe handling of hazardous chemicals and for management and treatment and disposal of hazardous wastes in an environmentally safe manner. The Board has identified 2610 units generating hazardous wastes for which 2512 authorization under the Hazardous Wastes(Management and Handling)Rules, 1989 as amended in 2000 and 2003 have been issued.

A site has been identified at SIPCOT Industrial Estate, Gummidipoondi as a site for establishing a Common Hazardous Waste treatment Storage and Disposal facility and it has been notified by the Government. Though, consent to establish has been issued to establish the facility, further progress could not be made due to a writ petition filed in the High Court of Judicature at Madras.

Besides, the Federation of common effluent treatment plants, Tiruppur and Karur has identified a site at Nallur village, Karupagoundarpalayam, Tiruppur Taluk, Coimbatore District and Mathagiri village, Krishnarayapuram Taluk, Karur district for establishing Common Hazardous Waste Treatment storage and Disposal facilities. These sites have been notified for establishing common hazardous waste treatment and disposal facilities.

3.7. MANAGEMENT OF BIOMEDICAL WASTES

The Board has so far inventorised 2449 private hospitals, 317 Government hospitals in the State. Site for 11 common facilities for Biomedical Wastes treatment and disposal have been identified for the private sector health care units, in the State, of which 9 common facilities are under operation and the remaining 2 facilities are under various stages of implementation.

3.8. MANAGEMENT OF MUNICIPAL SOLID WASTES

With increasing urbanization and rising levels of municipal solid waste there is an urgent need to evolve scientific approaches to the management of municipal solid wastes.

The Board has issued NOC to 90 municipalities and one corporation for composting of municipal solid waste and setting up of waste processing facility. NOCs issued for 45 municipalities have been converted as authorisation. In order to develop one Municipality or one Special Village Panchayat in each district as a Model town in Municipal Solid Waste Management, a seed money of

Rs.2 Lakhs to one Municipality or Rs.1 Lakh to one Special Village Panchayat in each district has been given by the Board through District Collectors.

3.9. MANAGEMENT OF PLASTIC WASTES

The environmental problems arising due to indiscriminate use and disposal of throwaway plastic items have been recognized and the Board has embarked upon an intensive awareness campaign. The awareness campaign has focused on preventing the use of throwaway plastic as well as eco friendly substitutes to plastic items. The Board has issued consent to operate for 1635 plastic products manufacturing units.

3.10. OTHER ACTIVITIES OF THE BOARD

3.10.1. Environmental Training Institute

An Environmental Training Institute (ETI) has been established with financial assistance from DANIDA, Denmark in the year 1994 at head office, Guindy, Chennai. The Environmental Training Institute has conducted 293 training programmes and trained 12618 participants from its inception upto 31.03.2006.

3.10.2. Environmental awareness and public participation

In 1994, an awareness cell was established in the head office, Guindy, Chennai to promote environmental awareness. Various awareness campaigns, workshops, rallies are being conducted regularly to highlight important environmental issues. A special awareness campaign was launched against air and noise pollution during festival seasons such as Deepavali and Bhogi.

3.10.3. Cleaner Technologies

The TNPCB has been involved in promoting a holistic approach of environment protection by going in for cleaner technologies options rather than mere end of pipe treatment. With active support and encouragement from the Board, industrial units in Tamilnadu have switched over to cleaner technologies in phased manner.

3.10.4. Green Cover Programme

As a measure of pollution check, industries have been directed to develop 25% of the land area as green belt with trees having a thick canopy cover. Accordingly, industries have taken action to plant adequate number of trees in and around industrial premises.

3.10.5. Environmental Atlas

The TNPCB, in co-ordination with Central Pollution Control Board (CPCB), is implementing the Programme of Zoning Atlas on environmental features through the GIS cell of the Board. Initially, the Zoning Atlas was taken up for Thiruvallur and Kancheepuram Districts. Subsequently, the preparation of district wise Environmental Atlas for the districts of Coimbatore, Vellore and Thoothukudi and Environmental Management Plan for Chennai city was taken up. Presently, the project on preparation of District Environmental Atlas for the districts of Cuddalore and Villupuram are being undertaken.

3.10.6. Green Awards

The Government of Tamilnadu has instituted green awards to encourage District Collectors to play a proactive role in promoting sustainable development in their districts. Green awards are given to the District Collectors based on the assessment of their personnel contribution to the promotion of environmental protection and sustainable development. The selection of the District Collectors for this award is done by a Committee constituted under the Chairmanship of Secretary, Environment and Forests Department.

**N. SELVARAJ
MINISTER FOR FORESTS**