ENVIRONMENT AND FORESTS DEPARTMENT

POLICY NOTE -2009 – 2010

DEMAND NO. 15

FOREST DEPARTMENT

1. Introduction

Among various land uses forestry is the most natural and sustainable one. Tamil Nadu has a great tradition of preserving its forest wealth and green cover for providing ecological security to its people. The forest eco-system of the state consists of a variety of flora and fauna representing remarkable bio diversity which is essential for environmental stability and food security. Forests not only play a major role in the life on earth but also play a pivotal role in the state's economy and natural resource management. Forests also prevent soil erosion and serve as a foster mother to agriculture. Forests are dynamic, diverse and integrated systems which have become all the more important today than ever before because of the realization that they alone are the solution to combat the impact of obnoxious gases, reduced yield in agriculture, increasing pollution levels, water shortages and rapid climate changes due to global warming that are being experienced.

2. Extent of Forests

Tamil Nadu has 22,877 sq.kms. of recorded forest area which is 17.59% of the geographical area of the State. Forest and tree cover put together covers 22.04% of the total geographical area of the State as assessed by the Forest Survey of India 2005 as against 33.33% envisaged in National Forest Policy, 1988. There is an urgent need to improve the forest / tree cover of the State.

3. Forest cover and green cover

In the present scenario it is increasingly important that every state takes effort to increase the green cover on the total extent of landmass available to it. Besides increasing forest cover, encouraging tree cultivation outside forests can contribute to increase green cover.

Tamil Nadu has been able to make a landmark achievement in green cover increase, by increasing the forest cover and tree cover, particularly during the last three years. The tree cultivation in Private lands (TCPL) programme has been done in 28,760 acres during 2007-2008 and in 25,800 acres during 2008-2009 and this has been responsible for increasing the tree cover in the State by 54560 acres. Besides this, the scheme of teak planting on Padugais and canal banks has resulted in an increase of 12626 hectares during the last 3 years.

4. Forest Protection

The forests in the state are under severe anthropogenic pressures and the forest resources are under constant threat due to various factors. The threats include sandalwood smuggling, illicit felling, encroachments, forest fires, grazing, ganja cultivation in forest areas, theft of medicinal plants etc. All these threats are being tackled through various projects and schemes. The forest personnel are being specially trained to handle latest weapons in order to take up innovative combative and patrol strategies and offence detection methodologies. The protection works include consolidation of forest boundaries by erecting cairns, fire protection through fire line maintenance and cutting new fire lines, involving local people in fire fighting through the creation of Joint Fire Management Committees, engaging fire watchers on a regular basis during the dry season, constructing fire watch towers, engaging

anti-poaching watchers and controlling use of forest land for illicit activities like ganja cultivation.

5. Bio-diversity conservation

Forest management in Tamil Nadu is focused on conservation of Bio-diversity. The State has set apart 4309 sq.kms under the network of protected areas in 9 Sanctuaries, 5 National parks, 12 bird sanctuaries and one conservation reserve. Tamil Nadu also has 1 Zoological Park and 8 Zoos for wildlife conservation. The State is also home to 3 Biosphere Reserves viz. Nilgiris Biosphere Reserve, Gulf of Mannar Bisophere Reserve and Agasthiyar Malai Bisophere Reserve. Kalakkadu Mundanthurai Tiger Reserve was declared in 1988 as Project Tiger area. During 2007, The Anamalai Wildlife Sanctuary and Mudumalai Wildlife Sanctuary were declared as two new Tiger reserves. During the year 2008, Sathyamangalam Wildlife Sanctuary has been declared. These protected areas hold large habitats of viable population of wildlife, endemic species, keystone species and cover significant landscapes and corridors for large mammals.

Efforts are being made to increase the extent of protected areas to 25% of the forest area of the State. The protected areas in the State are mainly managed for conservation of biodiversity, education, research recreation, historical importance, unique landscapes and seascapes.

The Western Ghats is one of the 25 global hotspots and one of the 3 mega centers of endemism in India. The forests of Kanyakumari, Kalakadu Mundanthurai Tiger Reserve, Annamalais, Mudumalais, Mukkurthi, Srivilliputtur, owe its richness in flora and fauna due to their position in the Western Ghats.

The management plans for protected areas and working plans for all divisions have contributed significantly towards development and conservation of biodiversity in the State.

6. Climate change and role of forests in mitigating its effects

The increased vehicular flow, rapid industrialization, urbanization and the emissions on account of these developments are contributing to the destabilization and alterations of the hitherto stable climatic conditions. Climate change is known to result in melting of glaciers, leading to rise in the sea levels, acidification of sea water, and the associated natural calamities and disasters.

The IPCC (Intergovernmental Panel on Climate Change) has warned that if the production of greenhouse gases continues to soar, global temperatures could rise by upto 6.4 degrees Celsius by the end of this century. There has been acceleration in Sea level rise since 1993. Between 1993 and 2003, the rate of rise has nearly doubled to 3.1 mm a year compared to 1.8 mm a year between 1961 and 2003. The United Nations Environment Programme includes India among 27 countries, which are most vulnerab le to sea level rise. Tamilnadu with its long coastline (1076 Kms) is likely to be largely impacted by the sea level rise.

Change in temperature and rainfall associated with global warming are bound to have a significant impact on the forests and the Wildlife they support. As forests in our state are highly fragmented, many species of plants and animals might not be able to copeup with climate change and could therefore face extinction. There is increasing consensus that we need to limit concentration of CO_2 to 400 ppm or below (compared with 280 ppm in the pre- industrial era and 430 ppm today).

Forests and tree cover offer a low maintenance and a naturally efficient overhead element for offsetting greenhouse gas emissions through carbon sequestration. It is estimated that three mature trees around a house can cut air conditioning needs up to 50 percent. Thus huge expenditures can be saved on energy costs by planting more and more trees around homes and business establishments.

The forestry offers the best option for offsetting emissions by carbon sequestration and storage in biomass both in plants and in the soil. The enhancement of carbon sinks through afforestation and forest protection is of high priority. Forests by serving as excellent carbon sinks can assist in emission reduction and thereby prevent calamities that can affect the biota including the human kind on the earth.

7. Forest policy

The National Forest Policy, 1988 sets the basic objectives, essentials and strategies of forest management. The principal aim of this 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 is to be subordinated to this principal aim. Ecological stabilization, protection of forests, wildlife conservation, conserving genetic resources and eco-system and maintenance of all natural forests enhancing forest productivity and enrichment of the forests' water resources and also increasing the forest and tree cover in the state constitute the main components of the State’s Forest Policy.

8. Objectives of Forest Management

The forests of Tamil Nadu are being managed with the following objectives:

- Ensuring environmental and ecological stability of the State.
- Biodiversity and genetic resource conservation.
- Rehabilitation and restoration of degraded forests
- Coastal eco-system conservation and management.
- Forest protection for resource management and augmentation.
- Enhancing tree cover outside forests for livelihood security.
- Water augmentation through forest conservation and catchment area management.
- Tribal development to ensure economic prosperity and ecological stability.
- Technology support, research and development for scientific forest management.
- Forest extensions for tree cover enhancement, outreach.
- Conservation education for wildlife management support.
- Forestry for rural energy security.
- Eco tourism for supporting conservation.
- Human resource development for forestry management.
- Climate change mitigation.

9. Forest laws

The objectives of the Forest Policy are achieved through implementation of legislations like Tamilnadu Forest Act, 1882, Tamilnadu Preservation of Private Forest Act, 1949, Tamilnadu Hill Areas (Preservation of Trees) Act, 1955, The

Wildlife Protection Act, 1972, The Forest Conservation Act, 1980, The Biodiversity Act, 2002 and other Acts by the Forest Department.

10. 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 thrust areas listed below, which will promote a comprehensive forest based development of the State.

- Increase tree cover outside forests for livelihood security
- Increase forest / tree cover inside forests to ensure ecological security to the people.
- Biodiversity and genetic resource conservation.
- Tribal development to ensure ecological stability and economic prosperity.
- Coastal ecosystem conservation and management.
- Catchment area management for augmentation of water resources.
- Forest Protection for forest resource management.
- Technology support, Research and Geographical Information System for Scientific forest management.
- Empowerment of women for sustainable forest management.
- Human Resources Management
- Infrastructural development for efficient delivery mechanism.

10.1. Increasing green cover outside forests

To increase the green cover outside forests the special programmes like tree cultivation in private lands, urban forestry scheme, raising teak plantation in Padugai lands and free distribution of seedlings are being implemented.

10.1.1. Tree cultivation in private lands programme in Tamil Nadu

In order to encourage tree cultivation outside forests, a new scheme was launched in the State in 2007-2008, and continued in 2008-2009. This programme involves planting tree seedlings in the holdings of small and marginal farmers as inter crops, alley crops in vacant fields, thus covering the waste lands in their holdings. Required seedlings are raised from the seeds obtained from the "seed stands", "seed production areas", "seed orchards", "plus trees" and "proven clones" and are supplied to farmers. This scheme not only ensures increased income to farmers but also paves way for wood based entrepreneurship in the State by providing the needed pulpwood, matchwood, furniture wood etc for future industrial needs. The increased tree cover will also provide the much-needed environmental balance for the villages in addition to support for rural development. Tree planting has been done in the extent of 28760 acres at cost of Rs. 9.47 crores during 2007-2008 and in 25800 acres at a cost of Rs. 9.43 crores during 2008-09. Totally 1.00 crore seedlings have been planted in the private lands of farmers in a year. Due to this 15000 farmers in the year 2007-2008 and 25914 farmers in the year 2008-2009 were benefited.

During 2009-2010 it is proposed to continue the scheme at the cost of Rs.10.00 crores.

10.1.2. Urban forestry

Rapid population increase and urbanization particularly in the ten Corporation areas of the State are leading to acute pollution levels. Trees are known to mitigate pollution and are effective carbon and methane sinks. Hence, this scheme has been initiated with the objectives of controlling the adverse effects of air, water and noise pollution and improving the aesthetic appearance of the city.

Under this programme, species like Azadirachta indica (Neem), Derris indica (Pungan), Terminalia catappa (Padam), Mimusops elengi (Magilam), Cassia fistula (Sarakondrai), Bauhinia variegata (Mandarai), Calophyllum inophyllum (Punnai), Enterolobium saman (Thoogumoonchi), Peltophorum pterocarpum (Iyal vagai), and Couroupita guianenlis (Nagalingam) have been planted on the roadsides in colonies and important road stretches. The species planted have been selected based on site suitability and the tree architecture to offer appropriate and aesthetic landscape. The tree seedlings have been provided with tree guards for effective protection. The programme has also received contribution from Tamil Nadu Pollution Control Board. During 2007-08, 1,17,647 seedlings were raised and 85,396 plants were planted in Chennai, Trichy, Madurai, Tirunelveli, Salem and Coimbatore corporations and its suburban areas. The remaining 32,251 plants were planted during 2008-2009 in Chennai and Tirunelveli corporations. In addition to planting the balance seedlings raised in 2007-08, 15,799 seedlings have been raised freshly during 2008-09 and have been planted in ten Corporation areas. During 2008-09, this scheme was implemented in ten Corporations and its suburban areas at a cost of Rs.3.17 Crores.

It is proposed to take up the maintenance works of the seedlings planted in 2007-08 and 2008-09 during the year 2009-10.

10.1.3. Raising teak plantations on padugai lands

Teak is found to grow naturally in the moist and dry deciduous forests of the Western Ghats. The objective of the scheme is to create timber resources in the State by planting teak on the canal banks and on padugais to increase tree cover outside the Reserve Forests and to prevent soil erosion in the canal banks. Hence, it has been proposed to raise teak plantations on canal banks and Padugais of Thanjavur, Trichy, Madurai, Dindigul, Sivaganga, and Villupuram districts at a total cost of Rs.35.31 Crores for a period of 6 years from 2008-2009 to 2013-2014 covering an area of 20700 ha. During 2008-2009 teak plantations were raised in 6186 ha. and maintenance works were carried out for the plantations raised earlier at a total cost of Rs.6.06 Crores.

It is proposed to raise teak plantations in 6900 ha. and to carry out maintenance works for the plantations raised earlier during 2009-10 at a cost of Rs.8.67 Crores.

10.1.4. Free distribution of seedlings to Educational and Health institutions, local bodies and Government departments

Rapid urbanization and population influx have resulted in massive urban agglomeration. The overuse of natural resources far over and above the legitimate need of mankind have resulted in pollution levels far exceeding the thresh hold levels. The obnoxious emissions from vehicles and industries are polluting the

urban environment subjecting the inhabitants to increased health risks. During 2008-09, 1.67 lakhs tall seedlings at a cost of Rs. 0.50 Crores were raised and distributed to schools, colleges, health and educational institutions. Further during 2009-10 this programme will be implemented on wider scale by providing 2 lakhs seedlings to house holds of all Districts raised at the rate of Rs. 5/- per seedlings with financial implication of Rs.0.10 Crores at free of cost.

10.1.5. Forestry extension centres

Forestry extension services and technology support for raising tree seedlings are provided through 30 forestry extension centres in the state which is unique to our country. The extension centres provide quality tree seedlings like Bambusa tulda & Bambusa nutans (Thornless Bamboo), Casuarina junghuniana (Savuku), Tectona grandis (Teak), Ailanthus excelsa (Pinari), Azadirachta indica (Neem), Melia dubia (Malai Vembu) and other tree seedlings besides, grafted Tamarind and Nelli plants to the farmers which will ensure increased income. These seedlings are planted in private lands and serve as demonstration plots established in farmlands.

10.2. Restoration of degraded forests through community participation

This thrust area aims at restoration of the original forest vegetation in the degraded forests, increasing density of trees, shrubs, herbs and other vegetation to restore the entire biodiversity, healthy watersheds, increasing productivity of the forests to meet livelihood needs of the forest dependants. As forests serve as livelihood options for several forest dependants, it is necessary to uplift the quality of life of the forest dependants and to restore the degraded forests in Tamil Nadu through their participation. Hence, implementation of schemes like Tamil Nadu Afforestation Project Phase - II, National Afforestation Programme, Western Ghats

Development Programme and Hill Area Development Programme has significant contribution to increase forest cover in the State.

10.2.1. Tamil Nadu Afforestation Project (Phase-II) (JBIC assisted)

TAP Phase-II is being implemented. This programme is being implemented from 2005-2006 till 2012-13 to restore 1.78 lakh ha. of degraded forests in 32 districts at a cost of Rs. 567.42 crores. The project aims to restore the ecological equilibrium through afforestation, provide alternate employment to the rural people and thereby increase income for their development. During 2008-09, 51500 ha. of degraded forests were restored and developmental activities were carried out in 230 forest fringe villages including 40 tribal villages at a cost of Rs.113.00 crores.

Since the TAP Schemes' beginning from the year 1997-98 to 2008-09 in 12 years the line Departments have done developmental works at a cost of Rs. 136 crores as follows:-

Programme phase	No. of participated Department	No. of works done	Exp. Incurred (Rs. in Crores)
TAP - Phase I 1997-98 to 2004-05	22	4722	41.30
TAP - Phase II 2005-06 to 2008-09	24	5657	94.31
Total		10379	135.61

During the year 2008-09, 37,500 ha. of forests below 0.4 density, 10,000 ha. of forests between 0.4 to 0.6 density and 4000 ha. of degraded forests surrounding tribal villages, in all 51500 ha. of degraded forests which have poor tree cover were restored by planting 96.50 lakhs seedlings. Nearly 25 species of tree seedlings like Emblica officinalis (Nelli), Azadirachta indica (Neem), Derris indica (Pungan),

Zyziphus jujuba (Ilandai), Syzygium cuminii (Naval), Aegle marmelos (Vilvam), Feronia elephantum (Vila), Bassia latifolia (Iluppai) and Terminalia arjuna (Neer Maruthu) which are site specific usufruct yielding trees have been planted for not only increasing the tree cover, but also on maturity they provide MFP and medicinal plants to the local people. During 2009-10 it has been proposed to carry out the maintenance works and village development works at a cost of Rs. 32.60 crores with financial assistance from JICA and to carry out soil conservation and moisture conservation work and nursery work for Afforestation Buffer zone activities for an amount of Rs. 23.70 crores from State fund.

10.2.2 National Afforestation Programme

This Centrally Sponsored Scheme implemented by the Forest Department aims at village development, employment generation and forest protection. All the works identified have been implemented by formation of 1140 Joint Forest Management Committees through 32 FDAs with 100% central assistance. An amount of Rs. 74.06 crores has been spent under this programme which was launched during 10th 5 year plan period. During the first two years of 11th Five year plan (ie) 2007-08 & 2008-09 a sum of Rs 25.81 crores was sanctioned by Government of India. Out of this a sum of Rs. 18.31 crores have been released and an expenditure of Rs. 12.33 crores was incurred upto 31.03.2009 including Forest Development Agency in 411 Villages and afforestation works in 6160 Hectares. During 2009-10, restoration of forests over an area of 5450 ha through planting and to form Forest Development Agency in 243 Villages have been proposed with further outlay of Rs. 10.00 crores.

10.2.3. Emergency Tsunami Reconstruction Project (World Bank assisted)

The Tsunami demonstrated tragically the necessity of the vegetative protection structures in the coastal areas. In order to give protection to the community living in the coastal plains as well as to protect properties, stabilize sand dunes in the coastal areas and conserve moisture and to extend coastal cover, 4778 ha. of shelterbelt and 2162 ha. of mangrove plantations were raised in the coastal districts of Tamil Nadu at an expenditure of Rs.21.83 Crores under ETRP during the last three years. During 2008-2009, maintenance works were carried out at a cost of Rs. 1.20 Crores. Further shelterbelt plantations have been raised in private lands over an area of 900 ha. at a cost of Rs. 2.52 Crores during 2008-09.

During 2009-10, it is proposed to carry out the maintenance works for the shelterbelts raised during 2008-2009 in the private lands at a cost of Rs.1.07 Crores.

10.2.4. Western Ghats Development Programme (WGDP)

This scheme aims at increasing the tree cover of the western ghat areas besides improving the eco-system of the Western Ghat hill forests. It is being implemented in Coimbatore, Dindigul, Madurai, Theni, Erode, Virudhunagar, Tirunelveli and Kanyakumari districts. Afforestation, soil conservation works, anti-poaching measures, medicinal plants conservation, solar fencing are some of the major activities carried out under this scheme. During 2008-09, the scheme was implemented in identified watersheds with an outlay of Rs.3.86 Crores including establishment cost.

It is proposed to implement this scheme during 2009-2010 with an outlay of Rs.4.87 Crores.

10.2.5. Hill Area Development Programme (HADP)

This scheme is being implemented to improve and upgrade the ecological conditions exclusively in the Nilgiris district. Apart from afforestation, soil and moisture conservation works, fencing around shola forests and wildlife habitats are also carried out to reduce the pressure on eco-system and to improve the degraded shola and forest cover in the Nilgiris. During the year 2008-2009, this scheme was implemented at a cost of Rs. 2.63 Crores.

During 2009-2010, it is proposed to implement this scheme at a cost of Rs.4.9 Crores.

10.3. Biodiversity conservation

10.3.1. Nature conservation

The objective of the scheme is to maintain and carry out conservation oriented works for improving wildlife habitat in the State. The wildlife habitats and bird sanctuaries in the State are maintained scientifically and systematically. The wildlife habitats are treated with various soil & water conservation measures for the sustenance of wild animals and birds. Engaging wildlife protection watchers, Construction of watch towers and anti-poaching sheds in such areas are also carried out. During 2008-09, this scheme was implemented at a cost of of Rs. 0.28 Crores.

It is proposed to implement the scheme at a cost of Rs. 0.14 Crores during 2009-2010.

10.3.2. Sanctuaries and National Parks

Sanctuaries and National Parks have been established under Wildlife Protection Act 1972.

In Tamil Nadu 4309 sq. kms of area have been declared as Sanctuaries and National Parks. This includes 9 Wildlife sanctuaries, 5 National Parks and 12 Bird Sanctuaries. Tamil Nadu also has 8 Zoos and one Zoological Park for wildlife conservation besides serving as Eco-education, awareness and entertainment areas. Considering the wildlife richness the Nilgiris, Agasthiyar Malai and Gulf of Mannar have been declared as biosphere reserves. A conservation reserve has been declared in Thirupudaimarudur of Tirunelveli district. The important schemes, which aim to conserve wildlife in the State, are as follows:

10.3.3. Centrally Sponsored Schemes

34 schemes were implemented during the year 2008-2009 at a cost of Rs.17.26 Crores. These schemes are centrally sponsored with 100% central assistance. With the financial assistance from GOI, the developmental activities for various wildlife sanctuaries / national parks have been undertaken. Project Tiger, Project Elephant, Development of grizzled squirrel wildlife sanctuary, Conservation and management of mangroves, Conservation and management of Point Calimere wetland complex in Tamil Nadu and action plan for Nilgiris biosphere reserve are some of the major schemes implemented under these schemes.

10.3.3.1. Project Tiger

The Forest Department has taken various measures to conserve tigers and their habitats. There are three Tiger Reserves in Tamil Nadu viz,, Project Tiger in Kalakad Mundanthurai Tiger Reserve of Tirunelveli District, Anamalai Tiger Reserve in Coimbatore district and Mudumalai Tiger Reserve in Nilgiris district. The importance of tiger conservation lies in the fact that the presence of this predator is an indicator of the health of an ecosystem. Presently, Government of India provides

100% assistance (Non-recurring and 50% state share on recurring works) for management protection and maintenance of the sanctuary. Habitat conservation, eco-development activities, protection, fire protection measures, improvement of water source, tourism development, controlling of man-animal conflict and improvement of infrastructure facilities, were carried out at a cost of Rs 5.75 Crores during 2008-09.

During 2009-2010, it is proposed to implement this scheme at a cost of Rs.11.33 Crores.

10.3.3.2. Project Elephant

Project Elephant scheme is implemented in four elephant reserves i.e. Nilgiris elephant reserve, Coimbatore elephant reserve, Periyar elephant reserve and Anamalai elephant reserve. With considerable population of elephants, Tamil Nadu is a leading State in elephants and their habitat management. Out of 24,000 elephants estimated in India, this State has a population of nearly 4015 elephants. 100% Central assistance is received every year from Government of India for this scheme. The scheme was implemented to protect the elephants and improve their habitats, fire protection measures, water facilities to elephants, payment of compensation to the damages caused to crops and loss of human lives caused by elephant etc., erection of solar fence to control the Man-animal conflict at a cost of Rs.2.73 Crores during 2008-2009.

During 2009-2010, it is proposed to implement this scheme at a cost of Rs.3.03 Crores.

10.3.3.3. Giant Grizzled squirrel Wild Life Sanctuary, Srivilliputhur

This Sanctuary was declared as Grizzled squirrel Wild Life Sanctuary in 1989. This Sanctuary is contiguous with the Periyar Tiger Reserve on the South Western side and the Megamalai Reserve Forest on the North Western. This Grizzled squirrel wild Life Sanctuary lies mostly in Virudhunagar District and partly in Madurai District nestling in the High ranges of the Western Ghats. The total extent of the Sanctuary is 48637.51 Ha. The sanctuary was named after the unique and rare Squirrel species, the Grizzled Giant Squirrel which finds this sanctuary as one of its last resorts for its survival. Besides the squirrel, Elephants, Bison, Nilgiris Thar and various kinds of Deer are other habitats of the sanctuary.

During the year 2008-09 an amount of Rs. 0.71 Crores has been sanctioned and spent for the development of Grizzled squirrel Wild Life Sanctuary. Now the Government have sanctioned during the year 2009-10 an amount of Rs. 0.47 Crores for the development works.

10.3.3.4. Arignar Anna Zoological Park

The Arignar Anna Zoological Park in an area of 602 ha. is located in Vandalur, close to Chennai. The park exhibits 1369 animals, which include 51 species of mammals, 66 species of birds, 30 species of reptiles in all numbering 147 species of wildlife. The zoological park attracts about 15 lakh visitors annually. An amount of Rs.1.49 Crores was allocated and a sum of Rs. 1 Crore was spent during 2008-09, for the implementation of special programmes in the Zoological Park with support of Government of India. With the fund provided, works like improvement of

animal houses, exhibit areas, road works, pathways; visitor facilities and purchase of battery operated vehicles are being undertaken.

A Night Safari is being established at a cost of Rs.125.00 crores with the objective to see wildlife in their own natural settings. Towards this effort and to facilitate advance actions, the Government have sanctioned Rs.5.00 Crores. out of which a sum of Rs. 1.35 Crores has been incurred up to the fiscal year 2008-09. The Night safari will have two components viz., an animal exhibit area and an entertainment area. The night safari is being established for those interested in watching and understanding the natural wildlife behaviour and activities in the night hours.

10.3.3.5. Formation of Zoo in Trichy

The Central Zoological authority of India has given their consent to form new Zoo over an area of 200 Ha in M.R. Palayam reserve forests at Trichy. Central Government has given the permission. A proposal for a sum of Rs. 28.90 crores has been sent to Government of India and construction works like construction of compound walls and formation of iron fencing have been approved for a sum of Rs. 0.81 Crore (Central Zoo Authority share Rs. 40.50 lakhs + State share Rs. 40.50 lakhs). During the year 2009-10 the works will be taken up.

10.3.3.6. Wetland Conservation in Tamil Nadu

Wetland systems directly or indirectly support lakhs of people providing goods and services to them by checking floods, by preventing coastal erosion, by mitigating the effects of natural disasters like cyclones and tidal waves, by storing rainwater, by recharging ground water aquifers, by providing nesting ground for many wading birds

and water fowls, by providing food and shelter for mammals, by acting as a nature sink and help to remove a wide range of pollutants. Out of 94 wetlands identified in India, 4 are in Tamil Nadu. These are, Point Calimere, Kazhuveli, Pallikaranai and Muthupettai Wetlands. Major activities involved in Wetland management are Habitat improvement, Wildlife Protection in Wetlands, Eco-development activities around Wetlands, Bio –up gradation, Awareness Creations, Research and Monitoring and Nature Education. During the year 2008-09, Rs. 1.12 crores was spent for conservation and management of these wetlands.

During 2009-10, it is proposed to take up conservation and management activities in the wetlands to the tune of Rs. 3.00 crores.

Pallikaranai Wet land, near Chennai is a unique fresh water swamp. It provides an important nesting ground to many wading birds and water fowls. This unique land near Chennai is facing danger from encroachment. To prevent Pallikaranai Wet land from encroachment, it is proposed to construct a compound wall at a cost of Rs. 1.176 Crores in the year 2009-10.

10.3.4. Prevention of man-animal conflict and provision for compensation

Population explosion and industrialization have resulted in reduction of animal habitats in the last century, as a result of which wildlife have now started straying out of the forests into human settlements. It is essential to tackle this problem on a war footing through erection of solar fences in the vulnerable areas, providing water holes for wild animals and timely payment of compensation to the victims for the loss of human life, damage to agricultural crops and property and to control the Man-animal conflict. During the year 2006-07 sanction was accorded for a sum of Rs. 4.24 Crores under the Central and State share to erect solar fencing to an extent of

262.5Kms. and work was done. During the year 2007-08, under various schemes it has been done to a length of 315.75 Kms at a cost of Rs. 5.05 Crores. During 2008-09, solar fences were erected to an extent of 331.25 kms., at the cost of Rs. 5.29 Crores which is an all time high. The erection of solar fencing along forest boundaries to prevent man-animal conflicts has brought large support from the people and therefore will be continued during 2009-10.

During the year 2006-07 Rs. 0.86 Crores was sanctioned and paid towards the payment of compensation to affected people and agricultural damages by the wild animals. During 2007-08 compensation amount of Rs. 0.72 Crores has been paid to affected people by the State Government. Similarly during 2008-09, Rs.1.16 Crores was provided under the state and Centrally sponsored schemes and Rs1.15 Crores has been paid as compensation to the affected persons. This will also be continued during 2009-10.

10.4. Tribal development

The Forest Department, which is involved in the management of the healthy forest eco-systems, has also its mandate in the management of the forest inhabitants including tribals as a foremost objective. The Forest Department is involved in Tribal education, employment generation and other welfare activities for the tribals.

The Forest Department runs 2 Higher Secondary schools, 1 High School, 8 Middle Schools, 8 Elementary Schools and 1 Boarding Schools totally 20 Schools for tribals in the State. Approximately 5000 students are being educated in these schools. The students of these schools are provided with drinking water facilities, laboratory equipment, separate toilet facilities for girl students, sports equipments,

classroom facilities, teaching aids and books. Under the scheme out of total sanction of Rs. 5.07 Crores during 2007-08 funds to the tune of Rs.1.01 Crores have been spent, under the rural infrastructure development funds (RIDF) of NABARD to address infrastructure needs of Forest Department run tribal schools.

During 2008-09 an amount of Rs.4.06 Crores have been spent under this scheme.

10.4.1. The Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006

The Act was enacted to recognize and vest forest rights in forest land to Forest Dwelling Scheduled Tribes and other traditional forest dwellers who have been residing in such forests for more than 75 years for generations but whose rights could not be recorded and to provide a frame work for recording the Forest right so vested and the nature of evidence required for such recognition and vesting in respect of Forest land. This Act was declared in 2006. The Forest Department is rendering all co-operation needed for implementation of the Act.

10.5. Catchment Area Management

The objective of catchment area management is to protect and conserve the soil, water and other natural resources including human resources and their prudent utilization to ensure development of inhabitants living within the watershed, while at the same time ensuring the continuous flow of desired good and services by well designed schemes and its effective implementation.

From 1997 onwards under Tamilnadu Afforestation Project developmental activities are being implemented with this objective in forest areas within the

watersheds. This programme is being implemented for the past 12 years with the complete co-operation, support and active participation of the people, with intention of augmentation of water and provide scope for increased level of underground water availability. Under TAP Phase-I 23454 Nos. of check dams and 2201 Nos percolation ponds having a capacity to lock and store 817.53 million cubic feet of water were constructed and under TAP Phase II 4152 check dams and 1177 percolation ponds were constructed having a capacity of 801 million cubic feet of water. Till date, 27606 Nos. check dams and 3378 Nos. percolation ponds have been constructed. These structures have the capacity to lock and store 1619 million cubic feet of water. Such effective and useful catchments area development activities will also be undertaken during 2009-10. Approximately 450 check dams and 150 percolation ponds will be constructed.

10.6. Integrated forest protection

This scheme aims at protecting the forest resource by strengthening protection measures to control forest fires, demarcation of forest boundaries to prevent encroachment by construction of cairns, carrying out fire protection works, improvement of roads for better protection, provision of better communication facilities etc.

An amount of Rs.3.31 Crores was spent during the year 2008-09 for implementation of the above scheme. During 2009-10, it is proposed to implement this scheme at an outlay of Rs. 4.00 crores.

10.6.1. Cairns

In order to prevent encroachment of Forest lands 1,38,716 Cairns were required to fix boundary limits. In the last 3 years, 31988 Cairns were fixed at a cost

of Rs. 2.56 Crores. 13628 balance Cairns due in last year and 5333 Cairns due for this year will be fixed in 2009-10 at a cost of Rs. 2.28 Crores.

10.7. Forest research

Forest research has provided new thrust to latest dimensions of forest activities, in areas of Tree Cultivation in Private Land, seed biology, medicinal plant conservation, MFP and post harvest technology etc., The objective of the scheme is to enhance forest conservation, improve productivity and thereby produce more goods and services for the benefit of people through research experiments. Experiments are conducted to find out the best species and most suitable regeneration techniques for different climatic and soil conditions.

State Forestry Research Institute, Kolapakkam and other Research centres in the State are adopting many innovative approaches for tree cultivation in private lands. Research activities were implemented at a cost of Rs. 2.05 crores during the year 2008-2009. During 2009-10, an amount of Rs. 2.05 crores have been provided for Research activities. Productivity increase in trees cultivated outside forest, restoration forestry research is focussed areas of research trials. The co-ordination between the Research and Extension wings has resulted in transfer of technology, large scale application of research findings and dissemination of forestry information for adoption of improved forestry and farm field practices.

10.8. Intensification of Forest Management

With a view to making the Integrated Forest Protection Scheme more broad based, government of India has revised and renamed this scheme as Intensification of Forest Management. Four new components have been added in the existing schemes which are as follows:

- Protection and Conservation of Sacred Groves;

- Conservation and Restoration of Unique Vegetation & Ecosystems;
- Control and Eradication of Forest Invasive species;
- Preparedness for Meeting Challenges of Bamboo Flowering and Improving management of bamboo forests.

During 2009-10, these four new components will be implemented at a cost of Rs. 4.10 Crores.

10.9. Empowerment of women

The programmes of the Forest Department have established the fact that rural women have a pivotal role in controlling decisions pertaining to restoration of forests, Joint Forest Management, resource sharing and employment generation. The guidelines established have provided scope for inclusion of 50% women in VFCs and 1/3rd of women folk in the executive committee. So far, 2167 VFCs were established with 6,61,609 members including 3,31,974 women. Women also head 121 VFCs. The formation of women SHGs has paved way for economic liberation of the women in the villages. The women have also developed skills to handle family budgets efficiently by virtue of their involvement in savings and micro-finance activities. One bright aspect of TAP programme is the continuous formation of women Self Help Groups to propagate their development. From 1997-98 to 2008-09 around 6810 women self help groups have been formed and 1,00,600 women have enrolled as beneficiary members. During 2009-10, this policy will be further strengthened by addition of 300 SHGs.

10.10. Human Resource Development

The Tamilnadu Forest Department has a huge manpower resource. There are nearly 5500 field staff and 3500 ministerial staff working in the Department. All these staff need to be suitably trained and their skills upgraded to meet the

objectives of the forest policy. The existing Tamilnadu Forest Academy at Coimbatore and Tamil nadu Forestry College at Vaigai Dam are endeavouring to meet these challenges. In Tamil nadu Forest Academy Coimbatore, training is imparted to Rangers (1 year), foresters (6 months) while in Tamilnadu Forestry College, Vaigai Dam it is imparted to forest guards (6 months) and Forest Watchers (3 months). Apart from these special courses of short duration ranging from 3 days to 10 days are conducted as and when required for specific projects.

10.11. Eco-Tourism

Realizing the potential for eco-tourism proposal to the tune of Rs.47.00 crores has been prepared and posed to the Government of India for funding. Government of India have sanctioned funds for one circuit for an outlay of Rs.4.40 Crores (Mudumalai - Anamalais). Eco-tourism will be continued in the coming years covering the lesser-known wilderness trails in the State.

10.12. Infrastructure development and staff welfare

10.12.1. 12th Finance Commission aided project

State Government have sanctioned a sum of Rs.30.00 Crores for the following works for the period from 2006-07 to 2009-10 under the scheme of 12th Finance Commission grants in aid :-

- Conservation and eco-restoration of degraded forests in Nilgiris and Palani Hills.
- Improvement of roads in the forest areas of Tamilnadu.
- Bio-diversity Conservation by habitat improvement.
- Maintenance and Special repairs to forest department buildings.

- Raising shoal seedlings for afforestation of clear felled pine and blue gum plantations in Kodaikanal division.

Up to 2008-09, Rs. 22.71 Crores have been incurred for the above works. During 2009-10, it is proposed to carry out the above works at a cost of Rs.5.36 Crores.

10.12.2. Staff welfare

In order to get all Government schemes implemented as per the perceived objectives, it is essential to provide the basic facilities required for staff and the organisation involved in the scheme implementation. Taking into consideration this requirement, this state has constituted a State Forestry Commission an effort made for the first time in the country. The Commission is likely to submit its report shortly. It is expected that the recommendations of the Commission will pave the way for redressal of long standing issues relating to staff welfare.

Often the forest field functionaries are stationed in very inhospitable environment and in remote areas in order to execute the responsibilities of forest protection. In such places it is the responsibility of the Government to provide housing facilities for staff like Forest Guard and Forest Watcher. Therefore under the TAP (Phase II) and other schemes from 2006-2007 to 2008-2009 this aspect has been given priority and housing facilities were provided for 463 field functionaries. Similarly, 29 office buildings, and 20 rest houses have been constructed. Year wise details of buildings constructed are as follows;

2006-2007	-	136
2007-2008	-	180
2008-2009	-	196
Total	**-**	**512**

A modern Remote Sensing and Geographical Information System laboratory has been established and is functioning at Chennai.

10.12.3. Transfer of forest land to other Departments for developmental Activities

The Forest Conservation Act, 1980 stipulates that all Government lands declared as forests or private lands declared as forest by the Apex committee constituted by Supreme Court or those areas notified as forests in Government documents require clearance of Government of India in case such lands are to be diverted for non-forestry purposes.

Diversion of areas in National Parks and Sanctuaries for non-forestry uses like (drinking water supply, provision of electricity, communication network) should not be permitted without prior permission of Supreme Court. The State Government has been empowered with permission till 31.12.2008 under Forest Conservation Act, 1980 for diversion of forest lands upto 1 Ha. for notified essential developmental activities of various departments.

Based on the general approval conveyed by Government of India under Forest Construction Act, 1980 during the year 2006-07 an extent of 47.1314 Ha. of Forest lands in 20 cases, during the year 2007-08 an extent of 28.7658 Ha of Forest lands in 13 cases, during the year 2008-09 an extent of 60.1519 Ha of Forest lands in 19 cases, in total for the past three years in 52 cases an extent of 136.0491 ha of Forest lands have been transferred to other departments. Till date in 304 cases

involving 4321.1492 ha. of forest lands have been diverted for various development activities. Taking into consideration the welfare of tribals and forest dependent communities placing importance on developmental activities pertaining to their well being, guidelines have been issued to the District Collectors regarding diversion of forest lands.

10.12.4. Improvement of Forest Roads

1380 Kms. length of WBM Roads and Black topped Roads, 1941 Kms. lengh of gravel roads and 1.68 Kms. length of cement roads, totally 3323 Kms. of length of Roads are under the control of Forest Department. These various types of roads are being utilized for forest protection and by forest dwellers. As these roads are situated within the forest area, these roads are damaged by the natural calamities like heavy rains and floods. The Department staff and public are not in position to use these roads and find difficult. Hence, these roads are being developed and maintained annually. During the year 2006-07 improvement and maintenance of 214.49 Kms. length of roads at a cost of Rs. 10.28 Crores were done. During the year 2007-08 length of 53.26 Kms. at a cost of Rs. 4.21 Crores and during the year 2008-09 54.76 Kms. length at a cost of Rs. 7.10 Crores, thus in the past three years 322.51 Kms. length of roads maintenance works at a cost of Rs. 21.59 Crores in various schemes have been done.

During 2009-10 it is proposed to do road developmental works to a length of 93.215 Kms at a cost of Rs. 10.43 Crores

11. Forest Corporations

11.1. Tamil Nadu Forest Plantation Corporation Limited (TAFCORN), Tiruchirappalli

Tamilnadu Forest Plantation Corporation Limited was established on 13.06.1974 with headquarters at Tiruchirappalli under Indian Companies Act, 1956. About 74,963.23 ha. of Reserved Forests and Protected Forests were taken on lease from the Tamilnadu Forest Department. There are seven Regions in Pudukkottai, Aranthangi, Karaikudi, Vridhachalam, Villupuram, Tirukoilur and Melchengam. Besides, a Sandalwood Products Factory at Thekkupattu was also leased out to this Corporation by the Tamilnadu Forest Department.

a) Authorised Share Capital

1,00,000 equity shares of Rs.1000/- each for Rs.10 crores.

b) Paid up share capital

37600 equity shares of Rs.1000/- each for Rs.3.76 crores.

2) Objectives

The main objectives of the Corporation are to raise, maintain and harvest.

i) Pulpwood plantations on sustained yield basis for the production of pulpwood.

ii) Firewood plantations to meet the fuel wood needs of the public.

iii) Cashew plantations for the production of Cashew nuts.

Distribution of Areas :

(REGION/SPECIESWISE)

Sl. NO	Region	Area/ha	Eucalyptus	Cashew	Other species	Total	er
1.	ARANTHANGI	8766.88	6556.93	1484.38	361.66	8402.97	
2.	KARAIKUDI	13011.19	8690.36	3558.80	485.99	12735.15	
3.	PUDUKKOTTAI	12001.16	8501.30	1250.04	746.68	10498.02	

4.	TIRUKOILUR	13654.24	12081.37	76.87	274.77	12433.01	
5.	VILLUPURAM	11766.76	7512.80	2375.41	917.35	10805.56	
6.	VRIDHCHALAM	11859.00	2437.86	9056.64	190.14	11684.64	
7.	MELCHENGAM	3924.82	751.36	253.50	307.45	1312.31	
	Total	**74984.05**	**46531.98**	**18055.64**	**3284.04**	**67871.66**	

3. Achievements

The details of the plantations raised during 2007-08 and 2008-09 are as follows:

Sl. No.	Species	Physical (ha.)				Financial (Rs. in lakhs)	
		2007-08		2008-09		2007-08 Actuals	2008-09 Revised Budget Estimate
		Target	Actual	Target	Actual		
1.	Eucalyptus	3500	3510	3909	3872	447.52	594.29
2.	Cashew	1200	993	1000	975	160.09	169.89
3.	Casuarina	0	0	10	10	---	1.91

4. Employment provided

During 2007-08 about 9.00 lakh man days have been generated by planting works in Tamilnadu Forest Plantation Corporation Ltd. During 2008-09 about 11.00 lakh man days have been generated.

5. i) Productivity of Eucalyptus clonal plantations

Since 1999, large scale Eucalyptus clonal plantations are raised to enhance the productivity . The area under clonal plantations since 1999 are about 18,400 hectares. The average yield of seed origin is only about 19 M.T./ha. But the average pulpwood yield per ha. from the clonal plantations is 34 M.T., after undertooking the site matching.

ii) Activities

Every year about 2800 ha. of Eucalyptus clonal plantations are raised using various outstanding clones, covering about 80% of total area planted. Beginning 2009-2010, clones will be raised in 90% of the Eucalyptus area. In general, clonal plantations perform far better than seed origin plantations.

6) Pulpwood

Pulpwood was supplied during 2007-08 and 2008-09 as follows:

Year	Quantity (M.T)	Revenue . Rs.
2007-08	55,033.625	11,69,69,689/-
2008-09	1,36,722.820	31,62,96,458/-

In 2009-10, it is proposed to supply 1,72,000 M.Tonnes of pulpwood.

7) Cashew

Cashew is a major revenue earner for TAFCORN. By way of public auction through tender-cum-sale in all the Regions, Cashew thope units are leased out and the revenue is realized. The details of revenue are as follows:

2007 – 08 Rs. 8.04 Crores

2008 – 09 Rs.6.14 Crores

2009 – 10 Rs.6.50 Crores is expected.

8) Working Results

During 2007-08, the total gross revenue was Rs.27.15 Crores and a profit of Rs.3.84 Crores was earned. TAFCORN expect to achieve a turnover of Rs.45.68 Crores and earn a much higher net profit of Rs.13.27 Crores in 2008-09 (unaudited). A statement showing the financial results (2007-08 actuals ; 2008-09 unaudited; 2009-10 budgeted etc.,) is furnished.

(Rs. in lakhs)

Description	2007-08 (Actual)	2008-09 (unaudited)	2009-10 (budgetted)
A) Income :			
Cashew	803.71	614.58	650.00
Pulpwood	1169.70	3162.96	3208.16
Other Forest Products	543.10	478.13	619.97
Factory products	257.02	163.49	----
Total	**2773.53**	**4419.16**	**4498.13**
Add/Less : Adjustments for stock variation (-)	(-)200.21	112.00	----
Net	**2573.32**	**4307.16**	**4498.13**
Add : Other income	141.95	260.86	199.06
Total (A)	**2715.27**	**4568.02**	**4697.19**
B) Expenditure :			
Establishment expenses	916.17	1047.79	1589.22
Factory raw materials, power etc.,	33.36	---	15.54

Plantation operating expenses including lease rent	1036.58	1796.03	1498.87
Repairs and maintenance	34.90		67.81
Other expenses	151.10	159.80	110.33
Previous year adjustment	21.86	---	2.00
Interest to Govt. on arrear lease rent	100.00	200.00	250.00
Depreciation	37.26	37.70	37.22
Total (B)	**2331.23**	**3241.32**	**3570.90**
Current year Profit	384.04	1326.70	1126.20

Income and expenditure details for 7 years :

(Rs in lakhs)

Year	Revenue	Expenditure	Net profit	Accumulated prof
2002-03	3233.45	3123.79	109.66	2262.52
2003-04	3138.18	2795.39	342.79	2432.34
2004-05	3765.61	3082.59	683.02	3115.54
2005-06	3594.79	2858.42	736.37	3483.66
2006-07	4028.69	3257.68	771.01	4191.41
2007-08	2715.27	2331.23	384.04	4522.80
2008-09 (unaudited)	4568.02	3241.32	1326.70	5849.50

9) Proposals for 2009-10

For 2009-10, TAFCORN proposes to raise fresh plantations as follows :-

			Physical Target (Ha.)	Financial Target (Rs. in lakhs)
(a)	Eucalyptus	:	3,600 ha.	591.91
(b)	Cashew	:	1,000 ha.	181.65

In order to increase pulpwood production, Ground Truth Verification and Site Matching of Eucalyptus clones and Cashew grafts are implemented since 2006-07.

11.2. Tamil Nadu Tea Plantation Corporation Limited, Coonoor

A project for raising Tea Plantation was started by the Government of Tamil Nadu as a Government Tea Project during the year 1968, through the Forest Department with the socio-economic objective of rehabilitating the repatriates from Sri Lanka under the Shastri-Srimavo Pact. Later, the project was registered as a Company under the Companies Act, 1956 viz., “Tamil Nadu Tea Plantation Corporation Limited” and is popularly known as "TANTEA". The authorized share capital of this Corporation is Rs.10.00 crore and the paid-up share capital is Rs.5.96 crore. The Government of Tamil Nadu holds the entire share capital of the Corporation.

This Corporation has raised tea plantations over an area of 4431.92 hectares and installed eight modern Tea Factories with a total capacity of 120 lakhs kg. of made tea per annum. TANTEA provides employment to about 5900 permanent workers and about 2500 casual workers. Free housing and other amenities like water supply, free medical facilities are also provided to its workers. It also runs three Garden hospitals and seven primary schools for the workmen. From 2006-2007, casual workers and their families also enjoy free medical facilities at its

hospitals. TANTEA is one of the largest business entities in the plantation sector in the Nilgiris and Coimbatore Districts.

(**a) Revision of wages to Workers**

A wage settlement was reached with the Trade Unions for a period of 6 years from 01.01.2002 to 31.12.2007 and an amount of Rs.349 lakh has been paid to the workers towards wage arrears during 2007-08 & 2008-09. The remaining arrear wages of Rs.91 lakh has been paid during 1st quarter of 2009-10. The daily wages paid during the said 6 years period for the workers of this Corporation was more than the daily wages paid by Private Tea Company estates.

Subsequently as ordered in G.O. (D) No.361, Environment and Forests Department dated 23.12.2008 and G.O. (2D) No.34, Labour and Employment department dated 15.6.2008, the Government Notified Minimum wages to tea plantation workers is fully implemented to the workers of this Corporation from 15.06.2008.

As per the State Government orders, the workers of this Corporation are being paid daily wages at Rs.115.52 from 01.04.2009, in addition to the corresponding statutory benefits like EPF, Bonus, Gratuity, etc.,

(b) Wages to Field Supervisors

The revision of wages for Field Supervisors of this Corporation for the period from 01.01.1999 to 31.12.2001 was pending for the past 9 years and now the Government have issued orders to pay wages to the Field Supervisors with retrospective effect and arrear wages of Rs.32 lakh has also been paid to them during 2008-2009.

(c) Bonus

As ordered by the Government, 20% Bonus/exgratia to all the workers and 10% Bonus / exgratia to the eligible staff members of the Corporation have been paid by incurring an expenditure of Rs.355 lakhs during 2008, though they are statutorily entitled for minimum Bonus @ 8.33%

(d) Financial results/ Achievements

In the year 2007-2008, due to sharp decline in price of tea in the market, as well as on the provision made for payment of arrear wage of Rs.4.40 Crores to the workers, the Corporation has incurred a loss of Rs.10.01 Crores. However, during the year 2008-09, by improving the quality of the produced tea, the sale price of tea has improved and the Corporation has earned a profit (before depreciation) of Rs.11.10 Crores (approx) during 2008-09. If the same trend continues with an average sale price of Rs.65/- kg., a profit of about Rs.10.51 Crores is expected during 2009-2010.

e) Future Plan

(i) Improving Retail Sale

It is also proposed to expand the retail marketing of tea through the reputed public sector organizations, like M/s BPCL and by increasing the number of retail dealers and an agreement with M/s. BPCL has also been executed.

(ii) Raising organic Tea

It is proposed to produce 'organic tea' by putting natural and organic inputs in a phased manner to improve the soil health, environment friendliness and sustain the yield and quality of product. To begin with, it is proposed to convert 7.5 Ha as organic tea plantations in Coonoor Tea Division of this Corporation during 2009 - 2010 on an experimental basis.

11.3. Arasu Rubber Corporation, Nagercoil

Arasu Rubber Corporation Limited has Rubber Plantations over an area of 4279.78 ha of forest lands taken on lease from the Forest Department in Kanniyakumari District, where the soil, climate and topography are conducive for the growth of rubber trees. The Corporation was registered on 10.08.1984 under the Companies Act 1956 and has been functioning with effect from 1.10.84. The authorized capital of the Corporation is Rs.10 crore and the paid up Share Capital is Rs.8.45 crore. The Government of TamilNadu holds the entire Share Capital of the Corporation. There are 1806 permanent workers and among them 379 are Sri Lankan repatriates as on 31.3.2009.

It has been proposed to replant rubber trees of high yielding clones in a phased manner. Though many areas are due for felling and replanting, the replanting, programme has been drawn carefully taking into consideration the

sustenance of the corporation on a continuous basis so as to give continuous employment to workers, staff etc. It is proposed to fell 1100 Ha of Rubber Plantations and replant the area in 5 years from 2009-10 to 2013-14.

11.3.1. Production and sale (Income and Expenditure)

The details of income and expenditure for the years from 2005-2006 to 2009-2010 are as follows:-

(Rs.in lakhs)

Year	Rubber production (in M.T.)	Revenue by sale of rubber and other items	Expenditure	Profit (+) Loss (-)
2005-2006	2562.00	2015.57	1946.16	(+)69
2006-2007	2116.00	2190.49	1647.34	(+)543
2007-2008	2003.00	2045.59	1867.47	(+)178
2008-2009 (Tentative)	1680.00	1927.09	1918.48	(+) 8
2009-2010 (Budget Estimate)	2200.00	2049.33	1887.97	(+) 161

It is expected that the corporation will earn profit during 2009-10.

Part-II schemes

During 2009-10, following 12 part-II schemes will be implemented at a cost of Rs. 4.65 crores in Forest Department.

Sl. No	Name of the schemes	Amount Rs. in Crores
1	Improvements of forests roads (three)	1.15
2.	Construction of Buildings- District Officer's residence at Namakkal	0.25
3	Purchase of motor vehicles (17)	0.87
4	Raising 2,00,000 seedlings at the rate of Rs.5/- per seedling for free supply to house holders.	0.10
5	Improvement to Panagal Building (6th to 9th floors)	0.09
6	Erection of Solar fencing for 100.kms @ Rs. 1.60 lakhs per km length in vulnerable areas in the state	1.60
7	Drinking water supply to 2 nos of tribal settlement @ Rs 4.00 Lakhs each	0.08
8	Imparting training at TNFA	0.05
9	Improvement of Library in the Head Office	0.04
10	Driving menace animal into the forests vulnerable areas in the State	0.20
11	Southern States Forest Ministers' Conference	0.07
12	Establishment of internet through TNSWAN	0.15
	Total	**4.65**

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 without compromising the interest of future generations. Environmental conservation is an integral part of the socio economic development. Several initiatives have been taken by this Government for pollution abatement in the rivers and lakes besides promoting environmental consciousness among the school children and the public at large.

2.1 Directorate of Environment

The Department of Environment was created in 1995 for dealing with the task of promoting environmental awareness in the State. The Directorate is entrusted with the coordination of major projects like pollution abatement in the rivers Cauvery, Vaigai and Tamiraparani; and in the waterways of Chennai City. The National Lake Conservation Programme, management of coastal zone and all other environment protection efforts except those dealt with by the Tamil Nadu Pollution Control Board are the responsibility of this Directorate.

2.1.1 Administrative set up

The Directorate is headed by a Director in the rank of Chief Conservator of Forests who is assisted by an Additional Director in the rank of Conservator of Forests. To assist them in their activities there are 23 personnel including a Deputy Director and an Assistant Environmental Engineer. Action against violations of Coastal Regulation Zone Notification is taken by the Green Squad functioning under the control of an Assistant Conservator of Forests. The co-ordination and liaison works with the Government of India and various implementing agencies in respect of National River Action Plan and National Lake Conservation Plan are done by

Environment Management Agency of Tamil Nadu (EMAT). Director of Environment is the Member Secretary of the Environment Management Agency of Tamil Nadu and the Principal Secretary to Government, Environment and Forest Department is the Chairman.

2.2 Coastal Zone Management

The coastline of Tamil Nadu has a length of about 1076 kms and constitutes about 15% of the coastal length of India. In order to protect the coastal environment and to regulate development activities along the coastal areas, Government of India issued Coastal Regulation Zone Notification in 1991 under Environment (Protection) Act.

As per the notification, in coastal areas a) the land area between Low Tide Line and High Tide Line, b) 500 meters land area on the landward side from High Tide Line, c) 100 meters on both sides of tidal influenced water bodies have been declared as Coastal Regulation Zone. National Coastal Zone Management Authority has been constituted by Government of India to take measures for protecting and improving the quality of the coastal environment and preventing, abating and controlling environmental pollution in coastal areas. Similarly, to protect and improve the coastal environment and preventing environmental pollution in coastal areas of Tamil Nadu 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, Engineering experts and Scientists have been constituted. The Government of Tamil Nadu have formed District Coastal Zone Management Authorities with Collector of the district as Chairman to monitor, enforce and implement the provisions of Coastal Regulation

Zone at district level. Proposals seeking environmental clearance under Coastal Regulation Zone notification 1991 are first scrutinized by the District Coastal Zone Management Authority and submitted to State Coastal Zone Management Authority for approval upto certain limits and for recommending to National Coastal Zone Management Authority for their approval.

2.3 River and Lake Conservation works

Environment Management Agency of Tamil Nadu (EMAT) was constituted for coordination and liaisoning between National River Conservation Directorate, Ministry of Environment & Forests, Government of India and various implementing agencies for implementation of works under National River Action Plan and National Lake Conservation Plan. The following schemes are co-ordinated and monitored by Environment Management Agency of Tamil Nadu.

2.3.1 Abatement of Pollution in five polluted stretches of River Cauvery

This is a centrally sponsored scheme under National River Conservation Programme at an overall project cost of Rs.36.28 crores and implemented since 1996-1997 for abatement of pollution in five polluted stretches of River Cauvery. A sum of Rs.22.66 crores has been spent by the implementing agencies. Under Core-activities, interception and diversion as well as sewage treatment plants 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. A revised Detailed Project Report for Pallipalayam is being prepared by the TWAD Board. Under Non-core activities, construction of low cost sanitation

facility, crematoria and river front development have been completed by the local bodies.

2.3.2 National River Conservation Programme – Seven Additional Towns

Pollution abatement in the rivers Cauvery, Vaigai and Tamiraparani along seven towns viz., Tiruchy-Srirangam, Thanjavur, Kumbakonam, Karur-Inam karur, Mayialaduthurai, Madurai and Tirunelveli at a total cost of Rs.575.30 crores is under implementation. The grant from Government of India for this project is Rs.282.15 crores and the rest is being met by Government of Tamil Nadu, the local bodies concerned and through public participation. The project envisages provision of underground sewerage systems, sewage treatment plants, low cost sanitation and solid waste management in these towns. These integrated projects will not only clean the river but also provide better health and hygiene to the people. Non-core schemes consist of solid waste management, low cost sanitation and river front development works which are being implemented by local bodies. By implementing this project 249.55 MLD of sewage can be effectively treated. The core works in Madurai and Kumbakonam are being implemented by Chennai Metro Water Supply and Sewerage Board. The works in respect of Karur, Mayiladuthurai, Thanjavur, Tiruchy and Tirunelveli are being implemented by Tamil Nadu Water Supply and Drainage Board. The interception and diversion works under Phase IV in respect of Madurai will be implemented by Public Works Department. An amount of Rs.460.24 crores has been spent towards this scheme. The Underground Sewage System at Tirunelveli had been completed and being maintained by Tirunelveli Corporation. Additional works are to be taken up in Mayiladuthurai and Karur towns at a cost of Rs.298.48 lakhs and 295.00 lakhs.

2.3.3 Chennai City River Conservation Project (CCRCP)

A project with a Government of India grant of Rs.491.52 crores for pollution abatement in six important Chennai City Waterways viz., Cooum, Buckingham Canal, Adyar, Otteri Nullah, Captain Cotton Canal and Mambalam drain is being implemented by Chennai Metropolitan Water Supply and Sewerage Board. The important component of the project is to intercept the sewage outfalls joining the six Chennai City Waterways and pumping it to the sewage treatment plants at Perungudi (54 MLD), Koyambedu (60 MLD), Nesapakkam (40 MLD) and Kodungaiyur (110 MLD). After the completion of this project, an additional quantity of 264 MLD of sewage is to be treated by Chennai Metropolitan Water Supply and Sewerage Board. The expenditure incurred is Rs.379.34 crores. Additional works are to be taken up under Chennai City River Conservation Project for Rs.2215.78 lakhs.

2.3.4 National Lake Conservation Programme (NLCP)

Revival of Ooty lake has been completed at a cost of Rs.1.72 crores by Public Works Department and for this purpose, deweeding, desilting and bio-remediation have been done.

The revised Detailed Project Report for Kodaikanal lake has been sanctioned for Rs10.43 crores. It includes providing underground sewarage system and construction of sewage treatment plant by Tamil Nadu Water Supply and Drainage Board. Deweeding and bioremediation of the lake will be taken up by Public Works Department and low cost sanitation works by Kodaikanal Municipality. A sum of Rs.132.00 lakhs has been spent by the implementing agencies.

Detailed Project Report for the revival of Yercaud lake in Salem district has been prepared by Tamil Nadu Water Supply and Drainage Board for Rs.5.74 crores and it has been sent to National River Conservation Directorate for approval.

2.4 Environmental awareness

2.4.1 National Green Corps (NGC)

With the financial assistance from Government of India, National Green Corps has been launched in 7500 schools all over Tamil Nadu for strengthening environmental awareness among students. There are three lakhs school children participating in this awareness movement. The Government of India have released a grant of Rs.2500/- per school every year. Training is being 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.

2.4.2 ECO CLUBS

To create awareness among school and college students, Eco clubs, funded by the State Government, have been launched in all the districts of the State. A grant of Rs.2500/- per school is released every year by the State Government on par with National Green Corps Programme of the Government of India. In all 1200 eco clubs have been formed with 50000 student members all over Tamil Nadu. Various environmental activities are carried out through these Eco-clubs in association with educational institutions and Non Governmental Organisations.

2.4.3 Awareness about ill effects of burning of Rubber and Plastic Materials

A three day awareness campaign is organized by the Department of Environment throughout Chennai City to create awareness about the ill effects of

burning of tyres, plastics and other materials on the eve of Bhogi by requesting the public through television to refrain from burning of tyres etc., The 8700 Eco-clubs through out the State are also organizing similar campaigns in their areas every year. Because of this campaign, there has been significant reduction in the burning of plastics and tyres in the urban areas.

2.4.4 Samathuva Pongal

Samathuva Pongal is celebrated every year to highlight the great culture of Tamil Community to the World on 1st day of "Thai Thingal" by organizing cultural activities, rural sports, community feast, other competitions etc., by the Environmental Awareness Coordinators in the districts, involving the eco-club members and general public.

2.4.5 Environmental Information System (ENVIS)

The ENVIS Centre of Department of Environment is functioning from October 2002 with Government of India grants. ENVIS centre is engaged in collection, collation, storage, retrieval and dissemination of environmental information through web. Newsletters, online quiz, online chat, creation of database and answering environmental queries and training are some of the activities covered under ENVIS.

2.4.6 State of Environment (SoE)

The preparation of State of Environment Report was undertaken at a cost of Rs.12.50 lakhs with financial assistance from the Government of India. A SoE Atlas, SoE Photo Catalogues, Video film on State of Environment and an interactive website have been prepared under this.

2.4.7 Environment Awards

The State Government honours the Non-Government Organisations, experts and individuals in recognition of their excellent contribution in the field of Environmental Management, Environment Protection and Environment Education & Awareness since 1999. These awards are given during the World Environment Day celebrations on June 5th every year. An award is also given for the best research paper in the field of environment.

2.4.8 Conducting Environmental competitions

Environmental awareness is done through Eco-clubs and National Green Corps. At present, about 3.5 lakhs students are enrolled in this movement all over the state. With a view to help students to know about their immediate environment and to make them understand the reasons for environmental degradation and to sensitise the students in finding out possible solution for various problems relating to environment, environmental awareness competitions are conducted among the members of eco-clubs/National Green Corps. This will be continued during this year also.

2.4.9 Conducting Environmental Awareness Camps

The department conducts environmental awareness camps for the students who participated in the environmental awareness competitions and teacher coordinators for three days. The students are exposed to various environmental problems through awareness camps. The activity included visits to polluted hotspots and to areas abounding with wildlife and forest growth for a first hand experience. This will be continued during this year also.

2.4.10 Study on Climate change in Tamil Nadu

A detailed study on the impact of climate change in Tamil Nadu which will throw light on remedial measures to combat this issue has been taken up by the Centre for Climate Change and Adaptation Research, Anna University, Chennai.

2.5 Schemes continued during 2009-2010 with World Bank assistance

2.5.1 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 demarcated high tide line for the stretch of the coastline including tidal influenced water bodies from Palar River mouth to Thengapattinam in Kanyakumari District. The high tide line reference points are being superimposed on the village cadastral maps on a scale of 1:5000 at a cost of Rs.2.23 crores. This work is being undertaken by Institute of Remote Sensing, Anna University, Chennai.

2.5.2 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 are being erected at an interval of 250 meters along the coast at a cost of Rs.1 crore and this work is under progress.

2.5.3 Preparation of Integrated Coastal Zone Management Plan (ICZMP) & Preparation of Coastal Vulnerability Maps

The coast of Tamil Nadu is replete with several economic activities like industry, tourism and fisheries. To minimize the conflicts of interest between various competing activities, 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, an Integrated Coastal Zone

Management Plan is being prepared for the coastline of Tamil Nadu. Further, coastal vulnerability maps will be prepared. The setback lines in the coastal areas will be determined based on the vulnerability of the coast to natural and manmade hazards. For this purpose seven parameters 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 Management Plan and Coastal Vulnerability Maps is being undertaken at cost of Rs.4.92 crores.

2.5.4 Capacity Building and Awareness Creation

The concepts of Integrated Coastal Zone Management Plan and mapping of coastal vulnerable areas are relatively new. It is important to develop awareness about these among various stakeholders. Therefore, suitable training modules developed for various stakeholders will be utilized to create awareness among the coastal communities and public. A sum of Rs.1 crore will be spent for this.

Part-II schemes

During 2009-10, following 4 part-II schemes will be implemented at a cost of Rs. 35.00 lakhs in Environment Department.

Sl. No	Name of the schemes	Amount Rs. in lakhs
1.	Conducting Competition on Environmental awareness in each district	5.00

Sl. No	Name of the schemes	Amount Rs. in lakhs
2.	Conducting Environmental Awareness Camps	10.00
3	Setting up of an Environmental Monitoring Lab at Chennai	10.00
4	Compiling a book on Flora and identification manual	10.00
	Total	**35.00**

3. TAMILNADU POLLUTION CONTROL BOARD

1.0 INTRODUCTION

Tamilnadu Pollution Control Board (TNPCB) has the responsibilities of enforcing the provisions of the Water (Prevention and Control of Pollution) Act, 1974, the Water (Prevention and Control of Pollution) Cess Act, 1977, Air (Prevention and Control of Pollution) Act, 1981, enacted in the Parliament and the rules made under the Environment (Protection) Act, 1986. Tamilnadu Pollution Control Board has headquarters in Chennai with District Offices all over the State.

2.0 CONSTITUTION OF TNPCB

In order to monitor the functioning of the Board and to take policy decision and guide the Board, a group of Board members has been formed. State Government nominates full time Chairman of the Board. Along with Chairman, 5 senior level Government Officials, 5 persons representing local bodies, 3 experts representing important sectors of agriculture, fishery and trade, 2 persons representing the companies or corporations and a full time Member Secretary are the members of the Board.

District Offices of the Board are located in 28 locations. The details of the location of District Office and the jurisdiction covered are given below

Sl. No	Location	Jurisdiction
1	District Environmental Engineer, Chennai	Chennai District.
2	District Environmental Engineer, Ambattur	Tiruvallur District (Part) (Ambattur and Ponneri Taluks).

3	District Environmental Engineer, Tiruvallur	Tiruvallur District (Part) (Tiruvallur, Gummidipoondi, Poonamalle, Tiruthani, Uthukkottai, Pallipattu Taluks).
4	District Environmental Engineer, Tambaram	Kancheepuram District (Part) (Tambaram, Chengelput, Thirukazhukundram, Cheyyur Taluks).
5	District Environmental Engineer, Sriperumbudur	Kancheepuram District (Part) (Sriperumbudur, Kancheepuram, Madurantagam, Uthiramerur Taluks)
6	District Environmental Engineer, Madurai	Madurai & Sivagangai Districts.
7	District Environmental Engineer, Virudhunagar	Virudhunagar & Ramanathapuram Districts.
8	District Environmental Engineer, Tirunelveli	Tirunelveli District,
9	District Environmental Engineer, Tuticorin	Tuticorin District.
10	District Environmental Engineer, Dindigul	Dindigul & Theni Districts.
11	District Environmental Engineer, Salem	Salem District.
12	District Environmental Engineer, Erode	Erode District (Part) (Erode, Bhavani, Sathyamangalam Taluks).
13	District Environmental Engineer, Perundurai	Erode District (Part) (Perundurai, Kankayam, Gopichettipalayam, Dharapuram Taluks).
14	District Environmental Engineer, Namakkal	Namakkal District.
15	District Environmental Engineer, Tiruppur	Coimbatore District (Part) (Avinashi, Palladam, & Tiruppur Taluks)
16	District Environmental Engineer, Coimbatore	Coimbatore District (Part) (Mettupalayam, Pollachi, Udumalpettai & Valparai Taluks)
17	District Environmental Engineer, Vellore	Arcot, Wallajah & Arakonam Taluks of Vellore District & Tiruvannamalai District.
18	District Environmental Engineer, Vaniyambadi	Vaniyambadi, Tirupattur and Katpadi Taluks of Vellore District.
19	District Environmental Engineer, Hosur	Krishnagiri & Dharmapuri Districts.
20	District Environmental Engineer, Tiruchirapalli	Tiruchirapalli and Perambalur Districts.
21	District Environmental Engineer, Karur	Karur District.
22	District Environmental Engineer, Cuddalore	Cuddalore District.

23	District Environmental Engineer, Pudukottai.	Pudukottai District.
24	Assistant Environmental Engineer, Udhagamandalam	The Nilgiris District.
25	Assistant Environmental Engineer, Thanjavur	Thanjavur District.
26	Assistant Environmental Engineer, Villupuram	Villupuram District.
27	Assistant Environmental Engineer, Nagapattinam	Nagapattinam & Tiruvarur Districts.
28	Assistant Environmental Engineer, Nagercoil	Kanyakumari District.

The total staff working in this Board is 744. Chief Engineers, District Environmental Engineers, Assistant Environmental Engineers, Scientists, Legal Officer form part of this total strength.

3.0 MONITORING OF INDUSTRIES AND ISSUE OF CONSENT

With the rapid industrialization in Tamilnadu, there has been a marked increase in the need for continuous monitoring of pollution of industrial activities. The field officers of the TNPCB inspect the industries under their jurisdiction periodically to assess the adequacy of pollution control measures undertaken by the industries to treat sewage, trade effluent and emissions and monitor their performance. As on 31.03.2009, TNPC Board has granted 29269 consent orders for operation under the Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 .

Industries had been categorised into 3 categories as red, orange and green based on the pollution load discharged. Highly polluting industries are classified as red category industries, medium polluting industries are classified as orange category industries and less polluting industries are classified as green category industries. From August 2007 onwards, the highly polluting red category industries have been split into ultra red and red category in order to have effective monitoring.

3.1 INSPECTION AND SAMPLE COLLECTION PERIODICITY

The field engineers in the District Office inspect the large scale ultra red industries every month and ordinary red category units once in three months. The medium scale red category units are inspected once in four months and the small scale red category units once in a year. Similarly the large and medium scale orange category units are inspected once in six months and the small scale orange category units once in two years. The less polluting green category units are inspected once in two years.

By analysing samples of trade effluent collected from industries, the operations of treatment units are monitored. Samples are collected for analysis once a month from the large scale ultra red and ordinary red category industries. In respect of medium scale red category units, samples are collected once in three months and in case of small scale red category units, samples are collected once in three to six months. With regard to orange category units, samples are collected once in four months from large scale units, once in six months from medium and small scale units. Samples collected are analyzed to monitor whether the quality of treated effluent satisfies the standards prescribed by the Board. If the quality of the effluent exceeds the standards prescribed by the Board, the units are instructed to operate the effluent treatment plant effectively. In case of repeated non compliance show cause notice is issued to the industry. If the industry continues to operate without proper treatment and reply to the show cause notice, the Board initiates action under the Water Act for closure of the industry and issues direction to TNEB for disconnection of power supply.

Industries are constantly insisted to continuously operate and maintain the pollution control measures. Industries are monitored for the continuous operation of pollution control measures and industries which have operated the pollution control devices to achieve board standards are issued with renewal of consent in time. Since the renewals are issued in time, the Board is encouraging the industries to comply with the conditions imposed in the renewal of consent.

3.2 HOT SPOT MONITORING

The TNPCB has identified 10 Hot spot areas based on the location of hazardous waste nature of the industries, high level of polluting industries and cluster of highly polluting industries. In these areas TNPCB has posted one Assistant Environmental Engineer for each area for effective monitoring and to contact local public directly. The ten locations are as follows:-

1. Manali
2. Cuddalore
3. Thoothukudi
4. Mettur
5. Ranipet
6. Sriperumpudur
7. IT Corridor at Perungudi
8. Perundurai
9. Gummidipoondi
10. Tiruppur

With regard to any pollution problem arising from the industries in these areas, the public can contact the locally available Board Engineers directly for taking corrective action.

4.0 SECTOR SPECIFIC TECHNICAL REPORT ON ENVIRONMENT

In order to develop a ready reckoner for various stakeholders' use, TNPCB is preparing sector wise document report for 23 sectors. This report will be ready in 2 months. The report will contain complete details on the new cleaner technology options, latest developments in pollution control technologies at the national and international level, pollution discharge standards, etc, for each sector.

5.0 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. Small-scale industries often express financial difficulties, lack of space and other reasons, which prevent them from putting up individual effluent treatment plants. The Board assists the units in mobilization of financial resources and in the technical scrutiny of the proposals for the establishment of common effluent treatment plants.

STATUS OF COMMON EFFLUENT TREATMENT PLANTS (CETP)

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

Tanneries	21 Schemes
Textile Bleaching & Dyeing Units	30 Schemes
Hotels & Lodges	1 Scheme

Out of these 52 CETPs formulated, 14 CETP schemes for tanneries, 19 CETP schemes for textile dyeing units and 1 CETP scheme for hotels and lodges are under operation. In addition, 7 CETP schemes for tanneries and 11 CETP schemes for textile dyeing units are under various stages of implementation.

6.0 WASTE MANAGEMENT

6.1 MANAGEMENT OF HAZARDOUS WASTE

The TNPCB is taking effective steps in handling and management of hazardous chemicals and treatment and disposal of hazardous wastes in an environmentally safe manner. The Board has identified and listed out 2532 units generating hazardous wastes under the Hazardous Wastes (Management and Handling) Rules, 1989 as amended in 2000 and 2003 as on 31.3.2009. These units are being subject to strict supervision. The Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008 have been notified by the Ministry of Environment and Forest, Government of India on 24.9.2008. A common hazardous waste treatment storage and disposal facility (TSDF) is established at SIPCOT industrial estate, Gummidipoondi and it has commenced its operations. The federation of common effluent treatment plants, Tiruppur, has identified a site at Nallur village, Karupagoundarpalayam, Tiruppur taluk, Coimbatore district and the federation of CETPs & ETPs in Karur have identified a site at Mathagiri village, Krishnarayapuram taluk, Karur district for establishing a secure landfill facility for disposal of sludge generated from treatment of textile dyeing effluents. EIA studies and public hearing of the site have been completed. Work will be undertaken after obtaining local body clearance in the above two sites. To adopt recycling and reuse principles, cement industries are encouraged to utilize the sludge from CETPs as raw materials and a trial run is under process in Chettinad Cements at Puliyur. Similarly, the cement industries such as A.C.C, Madukarai and Grasim Industries, are conducting trial runs for utilizing paint sludge, tar waste, ETP sludge as incineration material. The Board has also issued authorization in this regard.

Moreover, action will be taken to establish a common hazardous waste treatment storage and disposal facility at SIPCOT, Perundurai, Erode District.

6.2 MANAGEMENT OF BIOMEDICAL WASTE

Government of India has notified the Biomedical Waste (Management and Handling) Rules 1998 as amended in 2000 under Environment (Protection) Act, 1986. As per the notification, biomedical wastes are to be segregated and disposed in an approved manner through a biomedical waste treatment and disposal facility. The Board has so far listed out 2479 private hospitals and 317 Government hospitals in the State for which biomedical waste treatment is necessary. Sites for 11 common facilities for bio-medical waste treatment and disposal have been identified for the private sector health care units in the State and all the 11 common facilities are under operation. To evaluate the performance of common bio-medical waste treatment and disposal facility, a monitoring team with District Environmental Engineers and Assistant Engineers has been formed.

Tamil Nadu Government have issued G.O. (4D) No.10, Health & Family Welfare(EAP 1/1)Department, dt.28.09.2007 for implementation of health care waste management in 29 District Headquarters Hospitals and 241 Sub District Hospitals, 41 Tertiary Care Hospitals, 130 upgraded Primary Health Centres and 8 ESI Hospitals in Tamilnadu. The Government Hospitals have joined the common bio medical waste treatment facility for safe disposal of bio medical waste.

6.3 MANAGEMENT OF MUNICIPAL SOLID WASTE

With increasing urbanization and rising levels of municipal solid wastes generation, there is an urgent need to evolve scientific approaches for the

management of municipal solid wastes. The Board is advocating the concept of segregation of wastes at source, reduction, recycle and reuse of waste. The Board has issued NOC to 109 Municipalities and one Corporation for composting of municipal solid waste and setting up waste processing facility. NOCs issued for 63 Municipalities have been converted as authorization. In the year 2007-2008 Board has granted a total sum of Rupees one crore for 8 Municipalities for implementation of solid waste management. A monitoring team headed by an Environmental Engineer has been formed to assess the present status of implementation of Municipal Solid Waste Rules, 2000. The team will furnish a report on the present status along with its recommendations.

6.4 MANAGEMENT OF PLASTIC WASTE

The environmental problems arising due to the indiscriminate use and disposal of throwaway plastic items is well known. The use of throwaway plastics has increased among the public which ultimately mix with municipal solid waste and cause environmental nuisance due to the non-biodegradable nature of plastics. In order to control and regulate the above, Tamilnadu Pollution Control Board is implementing the Plastic (Manufacture, Sale and Usage) Rules. As per the above Rules, the minimum thickness of carry bags manufactured shall be more than 20 microns.

Further, Tamilnadu Pollution Control Board will prepare a report during this financial year which will contain the inventories of the plastic recycling units and to formulate the methods for effectively implementing the Plastic (Manufacture, Sale and Usage) Rules.

6. 5 MANAGEMENT OF E- WASTE

TNPCB has taken several initiatives in the management of E-waste generated in Tamilnadu. A committee consisting of professors of Anna University, representatives of NGOs, an expert from National Metallurgical Laboratory has been formed towards the management of E-Waste generated in Tamilnadu. A workshop on E-waste was held to create awareness among the stakeholders. TNPCB has issued consent to 12 E-waste recyclers for segregation and recovery of PCB, IC, Iron Copper, Rubber, Glass etc., PCB/IC wastes are exported to foreign countries such as USA, Singapore and Malaysia to recover the heavy metal present in the said wastes. Other wastes are sent to authorized industries in the country for recycling them.

7. 0 MONITORING OF AIR & WATER QUALITY

7.1 AIR QUALITY MONITORING

With the increased industrial activities and vehicular pollution in the vicinity of major cities, the quality of the ambient air is affected. As per the Air (Prevention and Control of Pollution) Act, 1981, the entire State of Tamilnadu has been declared as air pollution control area. 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 Air Quality Monitoring Programme (NAMP). This monitoring programme is conducted with the financial assistance of Central Pollution Control Board. In addition to that, the Board has established 5 ambient air quality monitoring stations in Chennai City and 5 in Thiruchirapalli. These stations are monitoring the ambient air quality in thickly populated residential, commercial zones of these Cities. Besides these, TNPCB is also monitoring the Air Quality level in major cities / towns in Tamilnadu during the festival seasons like Deepavali & Bhogi. To strengthen the Air Quality Monitoring the Board has procured 5 Carbon

monoxide analyzer at a cost of Rs.25 lakhs to monitor Carbon monoxide level in the industrial and traffic prone areas. Further Board has also proposed to procure 5 Ozone monitor to measure the ground level ozone in industrial and commercial areas in Chennai, Coimbatore and Cuddalore.

7.2 VEHICLE EMISSION MONITORING

The TNPCB has established 3 vehicle emission monitoring stations one at Madhavaram and two at Ambattur and testing the emissions from goods carriages. The vehicles which do not satisfy the emission norms are instructed to rectify the defects to bring the emissions within the standards Pollution Under Control Certificate (PUC) are issued only after this is fulfilled. To test and issue PUC for vehicles other than Goods carriages 75 private emission testing stations were authorized by the Transport Department in Chennai City.

7.3 WATER QUALITY MONITORING

The basic objective of the Water (Prevention and Control of Pollution) Act, 1974 is to protect the quality of water resources. To ensure this objective, regular monitoring of water quality is required. The TNPCB is monitoring the Cauvery river water quality at 16 locations under Monitoring of Indian National Aquatic Resources (MINARS) programme and 4 locations under the Global Environmental Monitoring System (GEMS). Apart from this under MINARS programme, the rivers Thamiraparani, Palar and Vaigai and lakes such as Udhgamandalam lake, Kodaikanal lake and Yercaud lake are being monitored. In addition, TNPC Board is undertaking River Stretch Pollution studies for Cauvery, Thamiraparani, Palar and Vaigai rivers in association with reputed universities and educational institutions.

7.3.1 RIVER CAUVERY

Samples were collected from 20 stations and analysed. In general, the water quality is categorized for the designated best use of outdoor bathing, drinking water source with conventional treatment followed by disinfection and also for fish culture and wild life propagation.

7.3.2 THAMIRAPARANI RIVER

Samples were collected from 7 stations and analysed. The water quality of the river Thamirabarani is categorized for the designated best use of outdoor bathing, drinking water source with conventional treatment followed by disinfection.

7.3.3 PALAR RIVER

The water quality of the Palar river is being monitored by collecting the samples from the collection well of Vaniyambadi Municipal head works. The water quality of the infiltration well is categorized for the designated best use of out door bathing, drinking water source with conventional treatment followed by disinfection.

7.3.4 VAIGAI RIVER

The water quality of the Vaigai river is being monitored by collecting the samples from the collection well of Thirubuvanam head works. The water quality of the infiltration well is categorized for the designated best use of outdoor bathing, drinking water source with conventional treatment followed by disinfection.

7.3.5 LAKES

The water quality of the Udhagamandalam, Kodaikanal and Yercaud lakes are being monitored and are categorized for the designated best use of drinking water with conventional treatment followed by disinfection and fish culture and wild life propagation.

7.4 MONITORING OF CHENNAI WATER WAYS

Water ways of Adyar, Cooum, Buckingham Canal and Otteri Nullah are being monitored at 34 river stations and 24 industrial outlets.

8.0. OTHER ACTIVITIES OF THE BOARD

8.1 ENVIRONMENTAL TRAINING INSTITUTE

Environmental Training Institute **(**ETI) located at the Head Office is an organizational wing of TNPCB established in 1994. The main objective of the training institute is to impart training to staff of the Pollution Control Board, representatives of Industry and non-governmental organizations. During the year 2008-09, the Environmental Training Institute has conducted 14 training programmes, in which 611 participants have been trained as on 31.3.09.

8.2 ENVIRONMENTAL AWARENESS AND PUBLIC PARTICIPATION

An Awareness Cell is established in the head office, Chennai to promote environmental awareness. To highlight important environmental issues such as the noise and air pollution caused due to bursting of crackers during festival, air pollution caused due to burning of old materials during Bhogi, pollution due to vehicular emission, protection of ozone layer, municipal solid waste management, road safety, rain water harvesting, various awareness campaigns, workshops, rallies are being

conducted regularly. During 2008-09, this cell has carried out 46 awareness activities and has displayed environmental awareness display boards inside 409 government buses.

8.3 SPATIAL ENVIRONMENTAL PLANNING

The Spatial Environmental Planning Unit of Tamilnadu Pollution Control Board has taken up the Geographic Information System based Spatial Environmental Planning (SEP) activities with the technical and financial support of Central Pollution Control Board (CPCB) for better Environment Management from the year 2000 – 2001. These SEP activities include the preparation of District Environmental Atlas, State Environmental Atlas, Environmental Management Plan etc.,

So far the Board has prepared District Environmental Atlas for Coimbatore, Vellore, Thoothukudi, Thiruvallur, Kancheepuram, Villupuram, Cuddalore, Erode, Salem, Karur, Madurai, Namakkal, and Trichy districts and Environmental Management Plan for Chennai City.

Presently as per B.P.Ms.No.44 dated 19.11.2008, as the current year activities of Spatial Environmental Planning, the project on Preparation of District Environmental Atlas for Tirunelveli, Virudhunagar and Dindigul districts is under progress.

8.4 GREEN COVER PROGRAMME

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

Assembly during 2008-09, TNPC Board has also sanctioned a sum of Rs 1.5 crores to the Forest Department for green belt development to prevent pollution and implement a clean development mechanism in corporation and sub-urban areas joining 6 corporations. Also TNPCB has sanctioned Rs. 1.05 crores for green belt development in all the districts of Tamilnadu.

8.5 CLEANER TECHNOLOGIES

The TNPCB is involved in promoting a holistic approach of environment protection by cleaner technology options more than mere end-of-pipe treatment. With active support and encouragement from the Board, the industrial units in Tamilnadu have switched over to cleaner technologies such as adoption of membrane cell instead of mercury cell in caustic soda manufacturing, adoption of dry process instead of wet process to reduce air pollution in cement factories, utilization of 25 to 30% of fly ash in PPC cement manufacturing, adoption of double conversion and double absorption technology in sulphuric acid manufacturing, gas carburizing instead of cyanide salt in heat treatment and cyanide free electroplating. Pulp and paper industries are encouraged to go in for elemental chlorine free bleaching to reduce the formation of organo-chlorides including dioxins. Industries consuming ozone-depleting substances are systematically changing to environment friendly compounds.

8.6 LIBRARY

The TNPC Board Library was established during the year 1989. At present, it has a collection of about 10,301 books and reports. The Library subscribes to 79

Journals (English & Tamil), 9 Newspapers and 13 Magazines related to environment. Membership is open to all those involved in environmental concerns.

8.7 NEWS LETTER

TNPCB is publishing a news letter on quarterly basis, containing the news about the activities of the Board, environmental issues in various districts, poetry and essays on environmental issues etc. This news letter is widely circulated to Government departments, District Collectors and all State Pollution Control Boards.

9.0 INSTITUTIONAL STRENGTHENING AND CAPACITY BUILDING

In order to develop the infrastructure facilities of the Board, apart from the Corporate office own building at Guindy, TNPCB has constructed own buildings for district offices at Ambattur, Hosur, Madurai, Trichy, Tirunelveli, Vellore and Chennai. The office building at Thoothukudi has been completed and occupied from February 2009. The office building at Maraimalainagar is nearing completion. Three new district offices at Sriperumbudur, Thiruvallur and Perundurai are functioning from August 2008 as per the announcement made in the last year Budget session.

N.SELVARAJ
MINISTER FOR FORESTS