



# **Environment and Forest Department**

**Policy Note 2003-2004**

**Demand No.14**

## **Tamil Nadu Pollution Control Board**

#### **4. TAMILNADU POLLUTION CONTROL BOARD**

**4.1. Tamilnadu Pollution Control Board (TNPCCB), established in 1982, enforces the following pollution control laws and rules relating to environmental protection in the State.**

- ?? The Water (Prevention and Control of Pollution) Act, 1974 as amended in 1978 and 1988.
- ?? The Water (Prevention and Control of Pollution) Cess Act, 1977 as amended in 1991.
- ?? The Air (Prevention and Control of Pollution) Act, 1981 as amended in 1987.
- ?? The Environment (Protection) Act, 1986.
- ?? The Environment Protection) Rules, 1986
- ?? The Hazardous Wastes (Management and Handling) Rules, 1989 as amended in 2000.
- ?? The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 as amended in 2000.
- ?? The Bio-Medical Wastes (Management and Handling) Rules, 1998 as amended in 2000.
- ?? The Recycled Plastic Manufacture and Usage Rules, 1999.
- ?? The Municipal Solid Wastes (Management and Handling) Rules, 2000.
- ?? Noise Pollution (Regulation and Control) Rules, 2000.
- ?? The Batteries (Management and Handling) Rules, 2001.

TNPCCB functions with its head office at Chennai. There are 25 district offices at Chennai, Coimbatore, Vellore, Madurai, Tiruchirapalli, Ambattur, Tambaram, Vaniyambadi, Hosur, Cuddalore, Thanjavur, Karur, Salem, Namakkal, Erode, Tiruppur, Dindigul, Thirunelveli, Virudhunagar, Thoothukudi, Uthagamandalam, Nagercoil, Pudukkottai, Villupuram and Nagapattinam.

TNPCCB has established 3 Advanced Environmental Laboratories at Chennai, Salem and Madurai, 10 District Environmental Laboratories at Ambattur, Vellore, Cuddalore, Tiruchirapalli, Dindigul, Thirunelveli, Coimbatore, Tiruppur, Hosur and Manali and one Mobile Environmental Laboratory at Thoothukudi.

#### **4.2. Interaction with other Departments**

TNPCCB, interacts with other concerned departments/ institutions to take a coordinated action for the protection of environment. TNPCCB extends effective assistance to local bodies in urban solid waste management, by providing training and technical assistance.

### **4.3. Monitoring of industrial pollution**

With the increasing pace of industrialisation in Tamilnadu, the need for continuous monitoring of pollution from industrial sources has become significant. All industries have to take necessary pollution control measures to meet the standards prescribed by the Board. The field officers of the Board periodically inspect every industry under their jurisdiction to assess the adequacy of pollution control measures provided to treat the effluent and gaseous emissions. For effective monitoring, the Board has classified the industries into red, orange and green, based on their pollution characteristics.

#### **4.3.1. Procedure for issue of consent**

The Board has laid down effluent standards, ambient air quality and emission standards. TNPCB issues consent to industries in two stages under the Water Act and the Air Act for establishment and operation of industrial units. Consent to establish is issued depending upon the suitability of the site, before the industry takes up the construction activity. Consent to operate is issued after installation of effluent treatment plant and air pollution control measures, before commissioning production. While issuing consent, TNPCB specifies the standards to be complied with by the industrial units. Consent order issued to industrial units includes in addition to primary conditions relating to emission and effluent, the conditions regarding obtaining ISO 14001 certificate (Environmental Management System), green belt development, rain water harvesting facilities, maintenance of Government health institutions, vehicle maintenance and responsible contracting of vehicles, good house keeping including non-use of throwaway plastics.

The Ministry of Environment and Forests, Government of India notified the Environmental Impact Assessment (EIA) Notification, 1994 under the Environment (Protection) Act, 1986. As per the notification, 30 types of industries scheduled therein have to obtain the environmental clearance from the Government of India. As per the amendment dated 10.04.1997 issued to the EIA Notification, 1994, the Government of Tamilnadu issued orders for constituting public hearing panels to consider the views of the public on these projects. Public hearings are being conducted from the month of May 1998 onwards in the respective District Collectorates for the applications received for setting up certain specified industries/projects. As on 31.01.2003, 214 public hearings have been conducted. On receipt of the recommendations of the public hearing panels constituted, TNPCB considers the issue of No Objection Certificate (NOC) to those industries/projects. With the NOC of the Board and the EIA report, the proponents have to approach the Ministry of Environment and Forests, Government of India for obtaining environmental clearance. After production of environmental clearance obtained from the Government of India, consent to establish is issued by the Board.

TNPCB has granted 3,431 consent orders for establishment of industries under the Water Act and 3,370 consent orders for establishment of industries under the Air Act from 1995-1996 upto 31.01.2003. It has granted 20,480 consent orders to industries to operate under the Water Act and 17,715 consent orders to industries to operate under the Air Act from 1982-1983 upto 31.01.2003.

#### **4.3.2. Complaints and legal action**

As on 31.01.2003, TNPCB has issued 24,461 show cause notices and 4,095 closure orders to industrial units for not complying with the conditions stipulated by the Board. TNPCB has filed 321 cases under the Water (Prevention and Control of Pollution) Act, 1974 as amended and 134 cases under the Air (Prevention and Control of Pollution) Act, 1981 as amended against the erring industries for the contravention of pollution control laws.

#### 4.3.3. 17 Categories of highly polluting industries

TNPCB has a special monitoring cell at its head office, Chennai to monitor the 17 categories of highly polluting industries, specified by the Government of India. 175 large and medium units have been identified under 17 categories of highly polluting industries and these are being closely monitored by the Board.

#### 4.3.4. Common effluent treatment plants

TNPCB plays an important role in the establishment of Common Effluent Treatment Plants (CETPs) for clusters of small polluting industries in various parts of the State. Tamilnadu is a pioneering State in India in establishing CETPs. So far, proposals for 50 CETP schemes have been formulated. Of these, 32 CETP schemes are under operation and 18 CETP schemes are under various stages of implementation. The details of CETP schemes are as follows:

Sl. No.	Sector	No. of CETPs formed	No. of CETPs under operation
1	Tanneries	24 schemes	13 schemes
2	Textile Bleaching and Dyeing	25 schemes	18 schemes
3	Hotels and Lodging Houses	1 scheme	1 scheme
	<b>Total</b>	<b>50 schemes</b>	<b>32 schemes</b>

13 CETPs at Pammal, SIDCO-Ranipet, SIPCOT Phase-II Ranipet, Vaniyambadi (Valayampet), Vaniyambadi (Udayenthiram), Ranipet, Ambur (Thuthipet), Ambur (Maligaithoppu), Pernambut (Bakkalapalli), Melvisharam, Dindigul, Madhavaram and Tiruchirapalli (Ramji Nagar) covering 612 tanneries have been commissioned. 18 CETPs at Veerapandi, Chinnakkarai, Kasipalayam, Kunnangalpalayam, Andipalayam, Mannarai, Angeripalayam and Manickampurampudur in Tiruppur area, Karuppampalayam, Amaravathi Nagar, Thirumanilaiyur, Sukkaliyur, Ramakrishnapuram, Light house area, Sellandipalayam and Andankoil in Karur area, Ayyampet-Muthialpet in Kancheepuram district and at Perundurai in Erode district covering 817 textile bleaching and dyeing units have been commissioned. One CETP for 90 hotels and lodging houses at Kodaikkanal has also been commissioned.

Towards the implementation of CETPs, State subsidy is granted by Government of Tamilnadu, upto 25% of the project cost and Central subsidy is granted by Government of India, upto 25% of the project cost. TNPCB, after receiving the subsidy amount from Government, releases the amount to individual CETPs based on the progress of the work.

The Board has so far received Rs.25.90 crores from Government of Tamilnadu towards subsidy for 48 CETPs and released Rs.22.66 crores as on 31.01.2003. Government of Tamilnadu have also released Rs.6.77 crores as state subsidy for 9 more CETPs through TALCO as 25% of the project cost.

Government of India has so far sanctioned Rs. 20.60 crores as Central subsidy to 48 CETPs in Tamilnadu and released the same through TNPCB, TALCO and IDBI. TNPCB has so far received Central subsidy of Rs. 12.84 crores and released Rs. 11.64 crores to CETPs. Government of India have released Rs 4.29 crores through TALCO and Rs. 3.47 crores through IDBI to the CETPs. Out of the Rs. 20.60 crores sanctioned by Government of India, Rs. 19.40 crores has thus been released.

#### **4.3.5. Cleaner technologies**

With active support and encouragement from TNPCB, industrial units in Tamilnadu have started switching 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, adoption of double conversion and double absorption technology in sulphuric acid manufacturing, gas carburising instead of cyanide salts in heat treatment and cyanide free electroplating. Pulp and paper industries are being 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.

Major industries have been asked to get the ISO 14001 certificates, which are awarded for adoption of best environmental management systems in their plants. During the last two years 102 industries have obtained ISO 14001 certification. 83 industries are in the process of getting the certificates.

#### **4.3.6. Waste minimisation**

With the adoption of cleaner technologies, there has been progress in waste recovery and waste minimisation. Examples include recovery of materials such as chrome from tannery effluent and ammonia from fertilizers. Out of 15 distilleries, 13 distilleries have gone for biocomposting of their effluents with press mud of sugar factories for achieving zero discharge of trade effluent. 2 distilleries are not in operation at present. A major textile dyeing unit at Tiruppur has also provided a salt recovery plant for reusing in the process.

The Hazardous Wastes (Management and Handling) Amendment Rules, 2000 provide for implementation of environmentally sound management of hazardous wastes including their reprocessing or reuse as raw material and disposal of residues after extracting the reusable materials. In Tamilnadu, hazardous wastes such as waste oil and lead from used batteries are being recycled in an environment friendly manner by the facilities, which are authorised by TNPCB and registered with the Ministry of Environment and Forests, Government of India. TNPCB is also exercising control over the generators and auctioneers. Only authorised and registered facilitators are allowed to handle these wastes.

#### **4.3.7. Water conservation**

As a water conservation measure, three major industries in Manali and Basin Bridge area are utilising about 25million litre of city sewage in their plants after tertiary treatment for cooling purposes. A major petroleum refinery unit at Manali and more than ten dyeing units in the State including one major unit at Tiruppur have provided reverse osmosis plants for recovering the process water from the effluent. The recovered water is reused in the process. In sugar industries, water condensate from evaporators is reused. As a condition for issue of consent, industries have been instructed to provide rainwater harvesting arrangements. During the last two years 418 industries have set up rainwater harvesting systems. 2,000 industries are in the process of setting up these systems.

#### **4.3.8. Energy conservation**

As a measure for fuel conservation and recovery, all the distilleries are recovering methane gas from their spent wash through anaerobic digestion. Major sugar factories have installed co-generation power plants. The sago units recover methane gas from their trade effluent through anaerobic digestion. A tannery in Melvisharam has installed a power generator using methane recovered from anaerobic digestion of fleshings from tannery. Other industrial units are encouraged

to use less energy and this is being audited through the environmental statements of the unit.

#### **4.4. Air quality monitoring**

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

##### **4.4.1. Ambient air quality monitoring**

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

An ambient air quality study report was published by the Central Pollution Control Board in 2002. The central pollution control board has listed 9 cities, where the air quality is critical. Even though Chennai is a major metropolis it does not figure in this list. In fact, of the 52 cities where the air quality was measured by the Central Pollution Control Board, Chennai's air was the least polluted.

The major industrial complexes, especially the clusters of chemical industries, are being monitored continuously. With this in view, TNPCB has established 6 continuous ambient air quality monitoring systems at Cuddalore, Thoothukudi, Ranipet, Manali-Thiruvallur, Royapuram-Chennai, Kathivakkam-Thiruvallur at a cost of around Rs.40 lakhs each to assess the level of pollutants such as suspended particulate matter, sulphur dioxide, oxides of nitrogen, carbon monoxide, ammonia, chlorine, fluorine, etc. in the ambient air and the adequacy of air pollution control measures provided by the industries. The Board instructs the concerned industrial units to improve the air pollution control measures, whenever the levels exceed the standards prescribed.

Highly polluting industries have been directed to establish their own continuous air quality monitoring systems. These units have also been asked to set up continuous stack monitoring systems with computer recording arrangements so as to monitor emissions at the source itself. 42 industries have already installed these air quality monitoring systems. Self monitoring by industries through these mechanisms is being encouraged.

##### **4.4.2. Vehicle emission monitoring**

Urbanisation and industrialisation have resulted in increased vehicular traffic in cities, resulting in increase in automobile emissions and toxic smoke emissions. TNPCB is carrying out the vehicle emission monitoring since 1992 for testing the emissions from goods transport vehicles in Chennai City in 3 locations at Alandur, Ambattur and Vyasarpadi. In addition, 111 private agencies have been authorised by the Transport Department in Chennai City to check the emission level of the vehicles. Further, TNPCB has established vehicle emission monitoring stations at Dindigul, Palani, Udahagamandalam, Katteri and Chengalpattu.

During the year 2002-2003, (as on 31.01.2003) out of 41,073 vehicles tested, 12,105 vehicles exceeded the limit during their first test. After rectification of defects, 1,816 vehicles still did not satisfy the standards. TNPCB has initiated action to check the emission levels of the buses run by Metropolitan Transport Corporation (MTC) of Chennai Ltd. A smoke meter has been provided by the Board to MTC for this

purpose. Other transport corporations have also been instructed to closely monitor the emission levels of their buses. All Government corporations and departments have been requested to ensure that their vehicles do not exceed the emission norms so as to set an example to others.

For controlling vehicular emission, cleaner fuel like unleaded petrol, petrol with 3% benzene and low sulphur fuel (0.05%) have been introduced in Chennai Metropolitan Area. Passenger cars complying with Bharat stage-II norms alone are registered in Chennai since July 2001. Action is being taken to introduce LPG in Chennai as it is a cleaner fuel. 2 LPG stations have been commissioned at Koyambedu and Guindy. Government policy to encourage mass transport and the use of LPG for private vehicles will help in improving the air quality.

Towards controlling noise pollution in urban areas, about 40,000 air horns were removed from buses and lorries throughout the State. 21 districts have been declared as air horn free districts. The Metropolitan Transport Corporation, Chennai was the first to declare its corporations '*air horn free*'. Other transport corporations have followed suit.

#### **4.5. Water quality monitoring**

Pollution of major rivers in the State is caused by the discharge of untreated sewage from the urban local bodies and panchayats and untreated or partially treated effluent from industries. TNPCB is collecting the samples periodically to monitor the quality of rivers and to instruct the polluters to take corrective measures. In case of industrial pollution, it is the responsibility of the industrial units to provide the required effluent treatment plants either individually or collectively so as to achieve the standards. Pollution abatement schemes are being implemented in the river stretches of Cauvery at Tiruchirapalli, Bhavani, Erode, Pallipalayam and Komarapalayam under the National River Conservation Programme (NRCP). Other rivers and water sources are also proposed to be taken up under NRCP.

##### **4.5.1. Water quality monitoring programmes**

Under the Global Environmental Monitoring System (GEMS), TNPCB is closely monitoring the quality of water in the Cauvery basin at Mettur, Pallipalayam, Musiri and ground water quality at Musiri. Similarly, water quality of rivers Cauvery (16 stations), Tamiraparani (7 stations), Palar (1 station) and Vaigai (1 station) and the three important lakes in Udhamandalam, Kodaikkanal and Yercaud are being monitored under the Monitoring of Indian National Aquatic Resources System (MINARS) by the Board. TNPCB is continuously monitoring the Chennai city water ways to prevent pollution due to discharge of trade effluent from industries and sewage from local bodies and is collecting and analysing samples of river water and outfalls at regular intervals, since 1991.

TNPC Board is now creating awareness on non-point sources of pollution. One of the major non-point sources of pollution is from chemical based agriculture. Awareness measures taken by the Board have pointed out the need to shift to more eco-friendly organic agriculture by use of less chemical pesticides/fertilizers.

#### **4.6. Wastes Management**

##### **4.6.1. Hazardous substances management**

TNPCB has taken effective steps for handling and management of hazardous chemicals and treatment and disposal of hazardous wastes in an environmentally safe manner. TNPCB has identified 1,516 units generating hazardous wastes and completed identification of hazardous waste streams in respect of existing units as per the Hazardous Wastes (Management and Handling) Rules, 1989 as amended in 2000.

Industries located in Chennai, Kancheepuram and Thiruvallur districts have formed the Industrial Waste Management Association for establishing a common hazardous waste treatment, storage and disposal facility through a private operator. The site at Melakottaiyur village, Chengalpattu taluk, Kancheepuram district has been identified as a site for establishing this facility.

Based on the instructions of TNPCB, the federations of CETPs at Tiruppur have identified a site at Nallur village, Karupagounderpalayam, Tiruppur taluk, Coimbatore district for establishing a common hazardous waste secure landfill facility. The federation of CETPs 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.

TNPCB is promoting a few landfill facilities at strategic locations to ensure that such facilities are properly monitored and the associated environmental problems are effectively managed.

TNPCB has also identified 25 isolated storages used for storing of hazardous chemicals. Due to close monitoring, 73 industries have taken policies under the Public Liability Insurance Act, 1991. During 1997-1998, the logistics for hazardous substances management cell have been made at a cost of Rs. 12.60 lakhs from TNPCB's own fund. During 2002-2003, an adhoc sanction for Rs.41.95 lakhs for the project on hazardous substances management has been received from the Ministry of Environment and Forests, Government of India.

#### **4.6.2. Municipal solid waste management**

With increasing urbanisation and rising levels of municipal solid wastes, an urgent task is to evolve scientific approaches to segregate, handle and dispose the solid wastes in urban areas. In this regard, a project of conducting feasibility studies on solid waste management for the local bodies of Udhamandalam, Kodaikkanal, Palani, Tiruchendur, Kanyakumari, Rameswaram, Mamalapuram and Kuttralam, which are all centres of tourism, has been taken up at a cost of Rs.23.60 lakhs from Board's fund. Tiruppur municipality has started segregation of waste at source. A private agency is composting the segregated waste for the past one year. Further 92 other municipalities have started segregation of waste at source and the composting work has begun. 8 sites for composting of municipal solid wastes have been given in principle clearance by the Board.

Workshops on municipal solid waste management were conducted during August 2001 for all the Commissioners of Municipal Corporations and municipalities and in December 2001 for the Executive Officers of town panchayats and again during August 2002 for Municipal Commissioners. A seminar on decentralised sewage treatment and biomethanisation as a technological option for municipal solid waste management was conducted during November 2002 for Municipal Commissioners. Various programmes towards achieving zero garbage have been conducted at district level regularly.

#### **4.6.3. Plastic wastes management**

Realizing the environmental problems caused by indiscriminate use and disposal of plastics, awareness has been created regarding reduction in the use of throwaway plastics through various campaigns. A mobile exhibition, exhibiting eco-friendly alternatives to plastics was arranged in Chennai city, which was inaugurated by the Hon'ble Chief Minister of Tamilnadu on 03.08.2001. District level programmes on '*children against plastic*' were launched in September 2001. Financial assistance of Rs.1.25 lakh was provided to each District Collector for the conduct of campaigns to encourage the use of eco-friendly alternatives to throwaway plastics in their districts. Billboards educating people against the use and disposal of throwaway plastics were placed on MTC buses, in Chennai. Awareness campaigns were

conducted in Nilgiris, Kodaikkanal, Yercaud, Rameswaram, Kanyakumari and other tourist towns and cities. Continuous awareness programmes are being conducted for the devotees using the girivalam path of the Thiruvannamalai temple. The Nilgris district, Hogenakkal, Kanyakumari, Kodaikkanal, Ooty, Rameswaram, Valparai, Yelagiri, Yercaud, Thirumoorhi falls, etc., have been declared as throwaway plastic free areas. As an alternative to plastics, a training for the production of palm leaf products has been conducted to self help groups in Salem, Vellore and Cuddalore through the Central Palmgur and Palm Products Institute of Village Industries Commission.

Action is being taken at the Government level on cleaning up of National / State Highways and other District Roads to make them free of plastic wastes, encroachments and other polluting activities. This would help to make a drive through Tamilnadu, an aesthetic experience.

#### **4.6.4. Biomedical wastes management**

TNPCB enforces the Biomedical Waste (Management and Handling) Rules, 1998 as amended in 2000. As part of this process, the Board has so far inventorised 317 Government hospitals and 1,835 private hospitals. TNPCB has issued directions to the Government and private hospitals to take time bound action for identifying sites and setting up common facilities for management of biomedical wastes in coordination with Indian Medical Association (IMA). So far 10 sites have been identified by the IMA for establishing the common biomedical waste treatment and disposal facilities for the private health care units. The components of a common biomedical waste treatment and disposal facility are autoclave, shredder, compactor, incinerator of anatomical waste, secured landfill facility, laboratory and vehicles for transportation of wastes. In respect of biomedical wastes generated from Government hospitals, separate facilities are being envisaged in 6 municipal corporations. For smaller towns 'on site' autoclaving and deep burial is to be done. TNPCB has also conducted training in management of biomedical wastes for its own staff, members of IMA and other medical and para medical personnel. Common biomedical waste treatment and disposal facility at Thenmelpakkam village of Chengalpattu taluk in Kancheepuram district is under construction and is expected to be commissioned shortly.

#### **4.7. Other activities of TNPCB**

##### **4.7.1. Applied research and development**

TNPCB has established an applied research and development wing in the Advanced Environmental Laboratory at Chennai for developing cleaner technologies that would reduce the generation of pollution. TNPCB has established a research fund from cess fund of the Board to assist various institutions for conducting research studies in the field of environmental protection, pollution control and development of cleaner technologies. A committee has been formed to scrutinise and select suitable projects for assistance. So far 9 such projects have been sanctioned with an outlay of Rs. 45.38 lakhs.

##### **4.7.2. Environmental Training Institute**

TNPCB has established an Environmental Training Institute with Danish assistance of Rs.4 crores at its head office to impart training to industries, local bodies, NGOs and the staff of TNPCB to enable to monitor and advise industries on pollution abatement and prevention techniques. The Environmental Training Institute has conducted 163 training programmes and trained 5,717 participants and also conducted 43 special programmes, workshops, seminars and awareness programmes with about 17,256 participants including students from December 1995 upto 31.01.2003.

As per the provisions of Water and Air Acts, one of the functions of the State Pollution Control Board is to impart training on prevention, control or abatement of water and air pollution. The Environmental Training Institute collects course fee from the participants for meeting the expenditure pertaining to course materials and refreshments. Income collected from the participants from April 1997 to March 2002 is Rs. 41.50 lakhs.

#### **4.7.3. Environmental awareness**

An environmental pavilion set up at Periyar Science and Technology Centre, Chennai conducts painting, essay writing and oratorical contests on environmental issues. Video films and short films are screened. TNPCB has established a pollution awareness and assistance cell in the Corporate office. Environmental awareness programmes and workshops on vehicular pollution, noise pollution control, hazardous waste management, solid waste management, biomedical waste management, plastic waste management, protection of ozone layer, rain water harvesting, etc, are being conducted. Special awareness campaigns are conducted against air and noise pollution during festival seasons such as Deepawali and Bogi. These campaigns were quite successful. Awareness programme regarding permitted activities in residential area is being taken up so as to ensure that residential areas remain unpolluted.

#### **4.8. Schemes**

##### **4.8.1. Green belt scheme**

To mitigate air and noise pollution in urban areas, a major programme for development of green belt in municipal corporation areas of Chennai, Madurai, Coimbatore, Salem and Tirunelveli was launched during the year 2000. The total of the project estimate was Rs. 455.70 lakhs. The central assistance was Rs. 400 lakhs. 2,94,000 saplings were to be planted under the scheme by the forest department. This programme was extended to all urban and municipality areas with central assistance of Rs. 76.50 lakhs and TNPCB's assistance of Rs. 25.50 lakhs. Industries are also implementing a green belt development covering 25% of their area and so far 73,38,768 tree saplings have been planted by the industries.

##### **4.8.2. Preparation of environmental atlas**

TNPCB with the assistance of CPCB is implementing a programme for preparing of an environmental atlas. Initially preparation of district wise zoning atlas for the districts of Kancheepuram and Thiruvallur at a cost of Rs. 6 lakhs was taken up. During 2000-2001, the preparation of district wise zoning atlas for the districts of Thoothukudi, Coimbatore and Vellore with an assistance of Rs. 8.25 lakhs has been taken up and during 2001-2002, the Review of master plan of the urban areas from environmental considerations for Chennai at a cost of Rs. 5 lakhs has been taken up.

##### **4.8.3. Externally Aided Projects**

- (1) TNPCB has signed an agreement on 24.11.2000 with the U.S. Trade and Development Agency (USTDA) to conduct a feasibility study on industrial waste water recycling and reuse for the tanneries in the Vellore region. The entire project cost is US \$ 1,80,100. The project is under progress.
- (2) TNPCB with participation from Italian and Spanish Agencies inaugurated the Asia-Urbs Ecological Project on 28.11.2000. This project would provide for mutual exchange of policies, experience and technologies in order to solve the problems relating to environmental protection and for abatement of industrial pollution in the areas of Vellore district and Chennai. The total project cost is EURO 4,95,040.

#### **4.8.4. Green awards**

To encourage District Collectors to play a proactive role in promoting sustainable development in their districts, the Government has instituted green awards for protection of the environment. Green awards were given to the District Collectors based on the assessment of the personal contribution of the Collectors to the promotion of environmental protection and sustainable development. The Awards were distributed to three Collectors of the Nilgiris, Salem and Virudhunagar by the Hon'ble Chief Minister on 5.6.2002. These awards had motivated Collectors to focus on the issues relating to environment in their districts.

#### **4.9. Proposed activities**

##### **4.9.1. Green award 2003**

The Government of Tamilnadu considers the protection of environment to be one of its foremost tasks. Improving the environment requires cooperation of all sections of Government and society. As local bodies have an important role to play in protecting and improving the quality of environment it is proposed to give "Green Awards" to those Corporations/Municipalities/Town Panchayats/ Panchayat unions which show the greatest initiative in protecting and improving the quality of its environment. The awards will be received by the Commissioners/ Municipal Commissioners/ Executive Officers/ Block Development Officers on behalf of their local bodies. The award consists of a citation and trophy.

##### **4.9.2. Green innovators award**

Industrial pollution can be contained best if the production processes become less polluting. The end of pipeline treatment of pollution can at best only minimise pollution to some extent. In order to encourage industrialists to introduce cleaner technologies and reduce pollution at source itself including recycling of the effluent/emission, the Government of Tamilnadu propose to introduce the Green Innovators Award. This award is to be given to industrial units, which contribute innovatively to tackle a major area of industrial pollution.

##### **4.9.3. Setting up Electroplating Park at Madurai**

There are around 80 tiny and small scale electroplating industries located within the Madurai Corporation area. The effluent from these industries reaches the Vaigai river. Since these units are located in thickly populated residential areas it is not possible to setup effluent treatment plants.

It is therefore, proposed to shift all these units to a dedicated industrial estate for electroplating units to D. Karisalkulam village in Manamadurai taluk, Sivagangai District. The proposed estate is to be setup with technical assistance from German Technical Co-operation under Indo-German Collaboration Project and the technical support of the Central Electrochemical Research Institute, Karaikudi. The cost of the project is around Rs.6.50 Crores. 22 acres of land has already been purchased by the Electroplaters' Association. The project is to be implemented within 2 years and will give employment opportunities to about 1000 people.

##### **4.9.4. Automatic continuous Air quality Monitoring Centre**

Air pollutants emitted by vehicles and industries contribute to the deterioration of the environment and the health status of the population. Vehicular emissions contain air pollutants such as fine soots, carbon monoxide, sulphur dioxide, nitrogen oxides, lead and hydrocarbons. These air pollutants become the causative agents for asthma, lung disease, skin disease and cancer.

Tamilnadu Pollution Control Board monitors the ambient air quality of Chennai city at six places already. It is proposed now to establish one automatic continuous ambient air quality monitoring centre at Koyambedu in Chennai City at a cost of Rs.57 lakhs to measure air pollutants such as respirable suspended particulate matter, sulphur dioxide, oxides of nitrogen, carbon monoxide and hydrocarbons accurately. An electronic display board will also be set up indicating the levels of the various pollutants to create an awareness among the public about the status of ambient air quality. The data on daily and seasonal variations on ambient air pollutants measured by this centre would help to improve traffic management, city planning and evolve guidelines and policy decisions for controlling air pollution.

As far as other metros are concerned (Madurai, Salem, Coimbatore, Trichy and Tirunelveli), new manually operated high volume samplers will be set up at a cost of Rs. 14.4 lakh for each metros with a total cost of Rs. 72 lakh.

#### **4.9.5. Provision of flue gas analysers for Tamil Nadu Pollution Control Board Laboratories**

Tamilnadu Pollution Control Board has 14 well-equipped environmental laboratories in the State. It is proposed to monitor and measure emissions instantaneously from the industrial stack itself both to monitor and regulate industrial emissions. Two environmental laboratories already have flue gas analysers. It is proposed to provide 12 more flue gas analysers for the remaining laboratories. One spare analyser is also to be kept as stand by. The total cost of the 13 flue gas analysers is about Rs. 39 lakhs. About 1000 industries will be monitored through flue gas analysers.

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