



**ENVIRONMENT, CLIMATE CHANGE AND
FORESTS DEPARTMENT**

ENVIRONMENT AND CLIMATE CHANGE

**POLICY NOTE
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**DEPARTMENT OF ENVIRONMENT AND
CLIMATE CHANGE**

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**TAMILNADU POLLUTION CONTROL
BOARD**

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DEPARTMENT OF ENVIRONMENT AND CLIMATE CHANGE

விரிந்த வானே, வெளியே - எங்கும்
விளைந்த பொருளின் முதலே !
திரிந்த காற்றும் புனலும் - மண்ணும்
செந்தீ யாவும் தந்தோய்
தெரிந்த கதிரும் நிலவும் - பலவாச்
செறிந்த உலகின் வித்தே !
புரிந்த உன்றன் செயல்கள் - எல்லாம்
புதுமை! புதுமை! புதுமை!

பாவேந்தர் பாரதிதாசன்

1. Introduction

Every life endeavours to have a healthy and safe environment. Human health and well-being are intimately linked to the state of the environment. Climate change is one of the biggest challenges being faced today affecting people and

nature across the globe, with developing countries being the most impacted. Most countries are becoming vulnerable to climate change, directly impacting their development path and in turn their economic growth.

As the second largest economy in India with 38 districts spread over a total land area of 1.3 lakh sq.km, Tamil Nadu is an important coastal State, with a coastline of 1,076 km, which is often affected by the vagaries of nature. With high dependency on natural resources, the ecosystems are under greater stress from human activity and climate change impacts.

Environment and climate change continues to be an important cross-cutting issue that requires commitment and attention of various stakeholders of Tamil Nadu viz., industries, academicians, civil society and the public at large.

2. Statutory Provisions for Environmental Safeguard

The other guiding principle in the sustainable development economy is creating a development pathway that meets the needs of the present without compromising the ability of future generations to meet their needs. Sustainable environment recognizes the interdependence of environmental, social and economic systems and promotes equality and justice through people empowerment and a sense of global citizenship.

A. Constitutional Provisions

The Indian Constitution is one of the first in the World to recognize the importance of environmental conservation.

The 42nd constitutional amendment introduced Article 48 (A), part of the Directive Principles of State Policy directs, "The State shall endeavour to protect and

improve the environment and to safeguard the forests and wildlife of the country.”

Article 51 (A)(g), part of the Fundamental Duties reads, “It shall be the duty of every citizen of India to protect and improve the natural environment”.

As the Constitution provides the framework for creating a welfare State, it is necessary that the finite natural resources of the country be optimally utilized without adversely affecting either the health of the people or the environment. This is the essence of the term sustainable development. We must make conservation-oriented development choices to avert pressure on Natural resources and life-support systems.

B. Environmental Protection Act (EPA) was enforced in the year 1986 with the aim to

protect and improve the environment and matters associated with it.

C. Environment Impact Assessment (EIA)

Notification was enacted in 2006 by the Government of India for imposing certain restrictions and prohibitions on new projects or activities, or on the expansion or modernization of existing projects or activities based on their potential environmental impacts, being undertaken in any part of India.

D. Coastal Regulation Zone (CRZ)

Notification ensures livelihood security to the fishermen and other local communities. The Ministry of Environment, Forests and Climate Change, Government of India has issued CRZ Notification, 2011 under the Environmental (Protection) Act, 1986.

3. Department of Environment and Climate Change

Recognizing the importance of the Agenda 21 of Earth Summit of United Nations Conference on Environment & Development, held on June 1992 at Rio de Janeiro, Brazil, the Department of Environment was formed vide G.O.Ms.No.335, Environment and Forests Department, dated 13.10.1995.

The Department's name was changed to **Department of Environment and Climate Change** vide G.O. (Ms) No.65, Environment, Climate Change and Forest (EC.1) Department, dated 06.04.2022 in order to be more inclusive about emerging and challenging issues that spring up in recent times due to climate change and to find near possible sustainable solutions to such challenges.

3.1 Functions of the Department

- Formulating policies related to Environmental issues for the Government of Tamil Nadu.
- Creating a framework to bring Synergy among the line Departments of the State and thus evolving policy initiatives for the State.
- Integration of knowledge and experiences of National and International agencies through collaboration and partnership.
- Developing framework for capacity building of various stakeholders (Line Departments, Institutions/Universities, Researchers, Experts, Non-Governmental Organizations (NGOs)) on Climate Change Adaptation and Mitigation.

- Implementing the Statutory provisions of Coastal Regulation Zone (CRZ) Notification and Environment Impact Assessment (EIA) Notification.

The Department is dealing with all the environment protection and management efforts except those dealt by the Tamil Nadu Pollution Control Board. The Department is the Nodal Agency for formulating the climate change related schemes, plans, programmes and their implementation in the State. The Department is also the nodal agency for creating awareness on the environment protection through its vast network of clubs in schools and colleges through its National Green Corps network.

4. Vision

To make Tamil Nadu a society that protects its environment, manages its natural resources in

a sustainable, equitable, climate resilient manner to enable its citizens a better quality of life.

4.1 Mission

The Department is mandated to protect the Environment of the State by undertaking all mitigation and adaptation measures against natural vagaries by preparing plans to protect natural resources and conserve natural habitats.

4.2 Strategies

1. Conserve and preserve Natural resources and promote their sustainable use by maintaining the balanced ecosystems as well as the functions of the environment.
2. Prepare a holistic Climate Change Policy for Tamil Nadu that supports climate change mitigation, adaptation and resilience cutting across all sectors of governance.

3. In consonance with the Coastal Regulation Zones, preparation of Coastal Zone Management Plan has been prepared as per CRZ notification to protect 1076 Km of coastline, preparing Shoreline Protection Management Plan.
4. Create sustainable tourism and healthy coastal management through Beach Management and Aesthetics Management Systems (BEAMS).
5. Educate and empower local communities in the management of climate change at ground zero while promoting best practices of adaptation and mitigation.
6. Creating awareness for sustainable use of natural resources with the support of National Green Corps.
7. Build standards for energy efficient infrastructure to save energy and reduce

consumption by creating practical models for green mobility to reduce carbon emissions and bring in regulatory mechanisms.

8. Promote a multi stakeholder approach to fast-track climate action in a synergized fashion by creating a robust and dynamic monitoring mechanism that ensures better compliance of Environmental Standards through transparent and credible systems.
9. Develop collaborations and strengthen community engagement to build long term commitment for a Net Zero Carbon future for Tamil Nadu.
10. Develop climate resilient technologies in collaboration with various research institutions to create green models and develop evidence base for scaling up and replication.

11. Develop comprehensive Data Repository Infrastructure related to climate science and climate modelling for future projections and effective policy and decision making.

5. Thrust Areas

5.1 Tamil Nadu State Action Plan on Climate Change (TNSAPCC)

The Government of Tamil Nadu (GoTN) recognizes that Climate Change is a serious issue and has introduced a slew of measures to combat climate change. This reflects the commitment of the Government in addressing the critical issue of climate change. The Government understands the importance of implementing the State Action Plan on Climate Change (SAPCC) and has prepared TNSAPCC 2.0 (2022-2030) for both the opportunities and risks presented by a changing climate. The SAPCC incorporates the goals, ambitions, policies and action plans that

Government has conceived and plans to implement.

The State has addressed the climate strategies aligned with the National Missions under the National Action Plan for Climate Change.

TNSAPCC has identified the following seven vulnerable sectors viz.,

1. Sustainable Agriculture
2. Water Resources
3. Forests & Biodiversity
4. Coastal Area Management
5. Enhanced Energy Efficiency & Solar Mission
6. Sustainable Habitat
7. Knowledge Management

The draft TNSAPCC 2.0 document emphasizes on Disaster Management and mitigation, Sustainable Development Goals and Composite Vulnerability Index (CVI) for the State.

5.2 Sustainable Development Goal (SDG) 13: Climate action

The Department of Environment and Climate Change is the Nodal Department for the Climate Change adaptation and mitigation activities and deals with the Sustainable Development Goal (SDG 13): Climate Action.

13.1- Climate action emphasizes on strengthening resilience and adaptive capacity to climate-related hazards and natural disasters in its target

13.2- Integrate Climate Change measures into National policies, strategies and planning.

13.3- Improve education, awareness-raising and human and institutional capacity on climate change, adaptation, mitigation, impact reduction and early warning.

The Tamil Nadu State Action Plan for Climate Change 2.0 is a framework for the State

for adaptation and mitigation strategies that is intricately interwoven with the Sustainable Development Goals. The TNSAPCC is supporting the State to achieve the Targets 13.1, 13.2 and 13.3.

The Department of Environment and Climate Change works in close association with the Revenue and Disaster Management for helping them in formulating the district level Disaster Preparedness Plans. It helps to formulate Early Warning Systems to reduce the impact of extreme weather events. The State will move closer to the Target of "0" as determined by the National Indicator Framework to strengthen the resilience and adaptive capacity to climate-related hazards and natural disasters.

The State is extremely vulnerable to Climate Change extreme events and the Department of Environment and Climate Change as part of the implementation of the TNSAPCC 2.0 focuses on

the development of Early Warning Systems and risk management to climate shocks.

5.3 Tamil Nadu Green Climate Company (TNGCC)

The Tamil Nadu Government, under the Department of Environment, Climate Change & Forest has set up the Tamil Nadu Green Climate Company (TNGCC) which is a Not-for-Profit Company and a unique platform to respond to Climate Change in the State. TNGCC is a first of its kind ambitious initiative by the State Government and will act as a Special Purpose Vehicle (SPV) to address the Climate Crisis in the State, which has become more widespread in recent times and calls for immediate attention to Climate Policy, leading to purposeful and equitable long-term solutions.

TNGCC will drive innovative climate & sustainability solutions by transforming communities, urban & rural infrastructure across

the State that are hardest hit by Climate Disruption.

The Company will be governed by a Board,

- Secretary, Environment, Climate Change & Forest will serve as the Chairperson & Managing Director of TNGCC

The following higher officials are Directors

- Secretary, Finance
- Secretary, Energy
- Secretary, Municipal Administration & Water Supply
- Secretary, Agriculture & Farmers Welfare
- Secretary, Water Resources
- Principal Chief Conservator of Forests, Tamil Nadu

The Special Secretary, Environment & Climate Change, will serve as the Officer on Special Duty for TNGCC's Financial Operations.

A Project Management Unit (PMU) has also been set up, comprising of:

- Chief Project Director
- Climate Change Expert
- Wetlands Expert
- Plastic & Waste Management Expert
- Energy Expert
- Health Expert
- Communications Expert

The PMU will aid TNGCC with its expertise on factors leading to Climate Change and implement the necessary Climate Actions while also monitoring & overseeing the three missions and their progress. It will act as a body to measure and report the progress of projects that will be undertaken.

TNGCC is committed to creating a Climate Positive & Lasting Change in the State, raising the ambition for action against climate change and

supports sustainable and climate resilient development through detailed research and analysis.

To achieve the above mentioned goals, three core Missions have been launched under the Leadership of the Hon'ble Chief Minister, namely;

- Green Tamil Nadu Mission (GTM)
- Tamil Nadu Wetlands Mission (TNWM)
- Tamil Nadu Climate Change Mission (TNCCM)

To realise these principal missions, the TNGCC is investing in integrated strategies and policy making to maximise the co-benefits between mitigation, adaptation and sustainable development.

5.4 Tamil Nadu Governing Council on Climate Change

In order to ensure that all activities are in line with the objectives of Tamil Nadu Climate

Change Mission, the Government after careful examination, have decided to set up the Tamil Nadu Governing Council on Climate Change. Tamil Nadu is pioneer in India to set up a Governing Council exclusively for Climate Change.

Objectives of Tamil Nadu Governing Council on Climate Change

1. Provide a Policy directive to the Tamil Nadu Climate Change Mission.
2. Advise on Climate adaptation and mitigation activities.
3. Approve Tamil Nadu State Action Plan on Climate Change.
4. Provide guidance to the State Climate Change Mission and District Climate Change Missions on implementation of various climate initiatives.

Composition of the Tamil Nadu Governing Council on Climate Change

The Tamil Nadu Governing Council on Climate Change has been set up with 26

members under the Chairmanship of Hon'ble Chief Minister of Tamil Nadu. Other members include Ministers and Secretaries of various departments and Experts from National and International Institutions.

The first Governing Council meeting on Climate Change was held on 03.03.2023 under the Chairmanship of Hon'ble Chief Minister of Tamil Nadu.

5.5 Green Tamil Nadu Mission

To increase the total area under the forest and tree cover in Tamil Nadu to 33 percent of the land area of the State, the Government has announced the Green Tamil Nadu Mission. Under the Mission, a Massive Tree Plantation Programme of indigenous and diverse species, in coordination with multiple departments, public and private institutions will be rolled out as a people's movement over next 10 years.

5.6 Tamil Nadu Wetlands Mission

With the objective of ecological restoration of wetlands in Tamil Nadu, the Mission will identify and map 100 wetlands in 5 years and restore the ecological balance with a focus on livelihood options. Under this Mission, a wetland inventory process will be initiated using digital technologies and an Integrated Management Plan for Ecological restoration of wetlands would be undertaken through a participatory process involving local communities and all other relevant stakeholders.

5.7 Tamil Nadu Climate Change Mission

Combating and mitigating the impact of climate change is a major concern for a coastal State like Tamil Nadu. During the Budget Speech for the year 2021-2022, this Government announced the launch of Hon'ble Chief Minister's Tamil Nadu Climate Change Mission to focus on

climate change adaptation and mitigation activities with a total outlay of Rs.500 crores. Accordingly, Hon'ble Chief Minister launched Tamil Nadu Climate Change Mission on December 9, 2022 to protect the natural resources in the State besides restoring them on a long term basis. Tamil Nadu Climate Change Mission is a first of its kind at the sub-national level. The Government of Tamil Nadu is committed in building a sustainable and climate resilient future for the people of the State, at the highest level of administration. The Mission is headed by the Director of Environment and Climate Change as Chief Mission Director to oversee and co-ordinate the Climate Change issues in the State.

Budget outlay of Rs.77.35 crores has been allocated for activities under Tamil Nadu Climate Change Mission for 2021-2022 and 2022-2023. Under activities proposed in 2021-22, baseline

studies are being conducted for an allotted amount of Rs.1.85 crores in consultation with various Expert Institutions like Indian Institute of Technology, Chennai, Centre for Climate Change and Disaster Management, Anna University and World Resources Institute (WRI), etc who act as knowledge partners.

Under the activities proposed in 2022-2023, the preparatory works have started. The details of proposed activities for the year 2022-23 for Rs.75.5 crores are given below.

5.7.1 Stakeholders Workshop

Capacity building workshop for local communities and Government line departments. Prioritizing adaptation and mitigation planning of sectors in districts which require immediate attention to climate change vulnerability. Highlighting scientific evidence on Climate Change at Regional and Global scenario and focusing

successful, indigenous / technological interventions for community, nature based adaptation for building resilience in the society.

5.7.2 Rehabilitation of Coastal Habitats for Climate Change Adaptation through Nature-based Solutions

Formation of Bio-shields through planting of Casuarina, Palmyrah, Cashew and other specialised species. Raising Mangrove plantation in coastal districts wherever it grows in local ecosystems. Protecting and enhancing the growth of sea grass and coral reefs. Developing an action plan and preparing an Atlas for sustainable coastal management of Tamil Nadu.

5.7.3 Carbon Enrichment Programme

Soil carbon storage is a vital ecosystem service which plays an extremely important role in promoting tree growth through increased supply of nutrients, enhanced retention of water and by storing significant amount of carbon.

Greater Chennai Corporation has set up a bio-mining plant at Perungudi, Chennai. The soil obtained after bio-mining of the legacy Municipal solid waste is extremely rich in nutrients and carbon. A demo site is proposed to be set up at Nanmangalam Forest by adding the bio-mined enriched soil from Perungudi to the degraded forests of Nanmangalam in collaboration with Forest Department, Greater Chennai Corporation and Anna University with the objective of enhancing the growth of trees and forest under growth through this project as a pilot.

5.7.4 Sustainable Habitat

Time has come for the realisation that the habitat where we live can no longer be ignored and the benefits of green building practices have to be realised for reducing the impact on our environment. Energy-saving measures in Government and private building, independent residents and apartments to reduce greenhouse

emissions from energy production and consumption in order to reduce the impacts of Climate Change. The major tasks to be undertaken are creating awareness among residents about the need for energy saving lighting and electricity in particular, training to builders and developers in cost saving climate friendly building infrastructure through workshops, developing Standard Operating Procedure for construction of energy efficient housing programmes and developing green building rating mechanism as a pilot project.

5.7.5 Climate Literacy and International Climate Summit

The awareness programme includes, creating awareness on climate change impacts, ways and means to mitigate, educating students on climate science, adaptation and mitigation activities, best practices and practical solutions to mitigate climate change through media and

digital communication platforms like small videos and apps and also creating a platform for engaging students in climate change awareness campaigns on green days to actively involve them in group discussions, digital poster making, street plays, skits, podcasts and public campaigns. Stakeholder engagements with Civil Society Organisations and Resident Welfare Associations will be improved by call for celebration of key events on climate change like Environment Day, World Water Day, Earth Day etc.

5.7.6 Climate Smart Villages

The Climate Smart Villages would serve as demo sites to test an approach through participatory methods with various technological and institutional options for dealing with climate change at the community level.

Localisation of Sustainable Development Goals at the panchayat level envisions creating a

village for the future of our children which is lush and green with nature's bounty using renewable energy, clean, protecting environment and climate resilient. The critical nature of protecting the environment and preventing further degradation requires that people in the local areas realise the importance of natural resources available, preserve and reclaim the environment from further degradation.

Pilot projects will be done through a multi stakeholder collaborative platform at selected villages with the following objectives:

- a) Protect natural ecosystems in the villages
- b) Understand the challenges and vulnerability of the local community to climate risks
- c) Develop future solutions to build climate resilience and increase adaptation and mitigation measures

- d) Identify and implement village/ community level agro ecological and socio economical solution such as setting up village level climate information centre for weather smart activities like agro advisories
- e) Carbon/nutrient smart practices for better management of agro forestry, land use, livestock management and bio-fuels
- f) Institutional/market smart activities like farmer to farmer learning and market information
- g) Learning from the smart villages would help the State to understand ground level climate related interventions which could be upscaled at the State level helping the Government in climate proofing of various Government schemes

5.7.7 Climate Resilient Green Monuments

Two temples will be taken up for Climate proofing as pilots to demonstrate measures

towards climate adaptation and mitigation. This pilot project would include efficient solar lighting, water management, heat management, greening, eco restoration of temple tanks, interventions to remove plastic and micro plastic. This would also include enrichment of temple gardens to enhance biodiversity. This pilot project would throw light on significant measures to be adopted for buildings of cultural and heritage value to make them climate resilient.

6. Activities of the Department

6.1 Coastal Zone Management

Tamil Nadu has a vast coastline of 1076 km which constitutes about 15 percent of the total coastal length of India. The State is endowed with varied coastal habitats like mangroves, corals, seaweeds, sea grass beds, salt marshes, mudflats, sand dunes etc.

To promote integrated and sustainable management of the coastal and marine areas, it is essential to follow multi-disciplinary approaches. Main approaches will improve capabilities related to coastal processes, shoreline management, coastal hazards/vulnerability.

6.1.1 SDG Goal 14: Life below water

Coastal ecosystem is included under the SDG Goal 14-Life below water which emphasizes on protection and management of marine and coastal ecosystems on sustainable basis.

- 14.1 Prevent and significantly reduce marine pollution of all kinds
- 14.2 Sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts
- 14.3 Minimize and address the impacts of ocean acidification, including through

enhanced scientific cooperation at all levels

6.1.2 Technology Intervention-Geographic Information System (GIS)

The Department of Environment and Climate Change established a GIS Cell as a part of Emergency Tsunami Reconstruction Project (ETRP) funded by the World Bank. GIS Cell monitors the project components under ETRP/ Coastal Disaster Risk Reduction Project (CDRRP) like demarcation of High Tide Line (HTL), preparation of Integrated Coastal Zone Management Plan (ICZMP), Coastal Vulnerability maps, erection of stone pillars on High Tide Lines along the coast of Tamil Nadu etc.,

The Department of Environment and Climate Change is a State body gives clearance for projects which are proposed in the Coastal Regulation Zone. To monitor the violations in CRZ area, the GIS Cell is accompanying the Green

Squad and identifying and mapping the location with the help of GPS instruments and furnishes reports based on which action is initiated. Also involved in Technical Expert Committee in identifying the project site through Cadastral maps and to Tamil Nadu State Coastal Zone Management Authority for their consideration and recommendation to Ministry of Environment, Forest and Climate Change, Government of India.

6.1.3 Coastal Zone Management Plan (CZMP)

The Coastal Regulation Zone (CRZ) Notification, 2011 has been issued vide S.O 19 (E) dated 06.01.2011 under the Environment (Protection) Act, 1986 by Ministry of Environment, Forest and Climate Change, Government of India to conserve and protect the coastal stretches and to promote sustainable development in the coastal areas.

The coastal areas have been categorized as five zones as follows in the Coastal Regulation Zone Notification 2011:

- CRZ-I (Ecologically sensitive)
- CRZ-II (Developed area)
- CRZ-III (Rural area)
- CRZ-IV (Water area which includes the water areas up to 12 Nautical miles (Nm) of the territorial waters and the tide influenced water bodies)
- CRZ- V (Areas requiring special consideration for the purpose of protecting the critical coastal environment)

The preparation of Coastal Zone Management Plan as per the provisions of the CRZ Notification is mandatory for the State.

As per the provisions of the Coastal Regulation Zone (CRZ) Notification, 2011, the Department of Environment and Climate Change has entrusted the CZMPs draft preparation for all the coastal districts of Tamil Nadu to the National Centre for Sustainable Coastal Management (NCSCM), Chennai, which is an authorized agency approved by MoEF&CC, GoI, for the above said purpose.

The MoEF&CC, GoI have conveyed the approval of the CZMP for Tamil Nadu, based on the recommendations of the National Coastal Zone Management Authority (NCZMA) on 24.10.2018. The approved CZMP in 117 maps have been uploaded in the website of Department of Environment and Climate Change (<http://www.environment.tn.gov.in>) and Environmental Information System (<http://tnenvis.nic.in>). The soft copy of the approved CZMP has been sent to all the District Coastal Zone Management

Authorities and the Stakeholder Departments for necessary action.

The MoEF&CC, GoI has directed all the States to prepare the CZMP as per the guidelines of CRZ notification 2019. For the State of Tamil Nadu, the National Centre for Sustainable Coastal Management (NCSCM), MoEF&CC, GoI is preparing the maps at the scale of 1:25000 as per the Guidelines of CRZ Notification, 2019 at a cost of Rs.1.82 crores. The work is under progress.

The Government of India has directed all States to follow the approved CZMP as per the CRZ Notification, 2011, until the approval of CZMP as per the CRZ Notification, 2019.

6.1.4 Preparation of Local Level Coastal Zone Management Plan

The Government of Tamil Nadu has accorded sanction for the mapping of Local Level Integrated Coastal Zone Management Plan

mapping at the scale of 1:4000 scale through Institute of Remote Sensing (IRS), Anna University at a cost of Rs.2.99 crores under Coastal Disaster Risk Reduction Project (CDRRP) fund. The work completed by IRS, Anna University. The local level CZM Maps prepared as per the Coastal Regulation Zone 2011 Notification has already been sent to all the coastal District Collectors/District Environment Engineers, Line Departments, local bodies and other agencies to facilitate the implementation of the Coastal Zone Management Plans.

6.1.5 Enforcement of Coastal Regulation Zone (CRZ) Notification

CRZ regulations are implemented under the CRZ Notification, 2011 of the MoEF&CC, GoI. These regulations are implemented with the intention to conserve and protect coastal stretches, its unique environment and its marine area to promote development through sustainable

manner based on scientific principles. These regulations also aim to provide livelihood security to fishermen communities and other local communities living in coastal areas. Tamil Nadu being a coastal State is implementing these regulations through its coastal zone management bodies at the State and District levels.

Tamil Nadu State Coastal Zone Management Authority (TNSCZMA)

To regulate CRZ activities and to check violations in CRZ areas, the MoEF&CC, GoI has constituted a State Coastal Zone Management Authority (SCZMA) at the State level with the Principal Secretary / Additional Chief Secretary, Environment, Climate Change and Forests Department, Government of Tamil Nadu as the Chairperson and the Director of Environment and Climate Change as its Member Secretary.

District Coastal Zone Management Authority (DCZMA)

The District Coastal Zone Management Authorities under the Chairmanship of the respective Coastal District Collectors were formed by the State Government in 1998. These Authorities convene periodical meetings to take decisions pertaining to Coastal Regulation Zone.

Technical Expert Committee (TEC)

The Government has constituted a three member Technical Expert Committee vide G.O. (Ms). No.100, Environment, Climate Change and Forest (EC.3) Department, Dated 13.06.2022 to assist the Tamil Nadu State Coastal Zone Management Authority (TNSCZMA) for prior scrutinizing the Coastal Regulation Zone applications and Coastal Regulation Zone related court cases.

6.2 Environment Management Agency of Tamil Nadu (EMAT):

In order to execute and monitor the river cleaning programmes and lake conservation programmes funded by the Ministry of Environment, Forests and Climate Change, (MoEF&CC), Govt. of India, the Environment Management Agency of Tamil Nadu (EMAT) was created in the year 2002.

Environmental awareness programmes in schools, coastal zone conservation programmes, eco-restoration activities are being conducted in coordination with TWAD Board, Municipalities, Corporations, Non-Governmental Organizations and National Green Corps Co-ordinators.

Eco-restoration of water bodies under EMAT has been funded by EPRED Fund, State Environment Impact Assessment Authority Fund, Tamil Nadu Pollution Control Board Fund, Government Grant etc., and implemented through

the line Departments. As EMAT is an Autonomous agency, it facilitates more effective networking of the Government and Non-governmental agencies.

6.3 National Green Corps (NGC)

During the year 1998, Tamil Nadu Government started the Eco clubs - first of its kind in India. Following the success of the Eco clubs in Tamil Nadu, the MoEF&CC, GoI launched NGC Eco clubs in India in 2002.

Around 4 lakhs students from the 8000 NGC schools participate in creating environment awareness implemented by the Department of Environment and Climate Change all over the State. Each Educational District has a Teacher Coordinator to oversee the NGC activities in the concerned Educational District. This programme imparts environment awareness to school students through on-campus and community activities like awareness programmes, tree

planting, celebrating Green days, eco competitions, eco camps etc., The NGC Eco clubs will also help and support the creation and maintenance of nutri-gardens in the schools with native species of trees and local vegetables wherever possible. These Eco-Clubs will be used as platform for dissemination of information.

6.4 State Environment Impact Assessment Authority (SEIAA) – Tamil Nadu

Under the EIA Notification, it is mandatory to obtain prior Environmental Clearance for certain new projects, expansion or modernization of existing projects based on their potential environmental impact. Projects falling under Category 'A' in the Schedule of the Notification requires Environmental Clearance from the Ministry of Environment, Forest & Climate Change (MoEF&CC), Government of India and for matters falling under Category 'B', depending upon the thresh-holds of the activities, requires clearance

at the State Environment Impact Assessment Authority (SEIAA).

The Notification provides for constitution of a SEIAA empowered to grant Environmental Clearance to mitigate pollution and protect environment. To assist SEIAA, a State Expert Appraisal Committee (SEAC) has been constituted. The Expert Appraisal Committee appraises projects and forwards its recommendations to the SEIAA for taking a decision on granting Environmental Clearance, by following the statutory provisions stipulated under Environmental Impact Assessment Notification 2006. The present SEIAA was constituted vide MoEF&CC, GoI notification S.O. No.146 (E), dated 11.01.2022 comprising of three members of SEIAA and 12 Members of SEAC in Tamil Nadu for a term of three years.

Transparency measures are being followed in order to enhance efficiency, ease and

accountability in the process of Environmental Clearances. The Government of Tamil Nadu is using the single window portal "PARIVESH" enabled by MoEF&CC, GoI, to view and track the status of applications for the ease of doing business.

6.5 Environmental Information System (ENVIS)

The Ministry of Environment, Forest and Climate Change, Government of India (MoEF&CC, GoI) had established a Central Scheme known as Environment Information System (ENVIS) in 1982. In Tamil Nadu the ENVIS Centre sponsored by the MoEF&CC, GoI has been functioning under the Department of Environment and Climate Change from October 2002.

ENVIS Centre provides information on various aspects about the State of Environment and related issues of Tamil Nadu. The ENVIS centre is also engaged in collection, collation,

storage, retrieval and dissemination of environmental information through a website *www.tnenvi.nic.in*. Preparation of State of Environment Report (SoER), creation of web based database, publication of newsletters, preparation of awareness brochures and conducting the Environmental awareness programmes are the ongoing projects under ENVIS Hub.

The ENVIS scheme which was previously under the umbrella scheme 'Decision support System for Environment Awareness, Policy, Planning and Outcome Evaluation' has been subsumed within the revamped scheme of Environment Education, Awareness, Research and Skill Development which has been approved for 2021-22 to 2025-26 in June 2022. One of the components of this revamped scheme is "Environmental Information, Awareness, Capacity Building and Livelihood Programme (EIACP)"

7. ONGOING PROJECTS/SCHEMES

7.1 District Climate Change Mission

Government has decided to set up District Climate Change Missions to strengthen the climate response of Government of Tamil Nadu at the grass root level. In accordance with the above objective, District Climate Change Mission shall be set up in every District in Tamil Nadu. The District Collector shall be the chairman of the District Climate Change Mission. The District Forest Officer shall be the District Climate Officer. Government has decided to allocate an amount of Rs.3.80 crores towards District level mission activities.

Objectives of the District Climate Change Mission (DCCM)

- 1) District Climate Change Mission shall work with all Departments at the District level in line with the State Action Plan.

- 2) District Climate Change Mission shall closely associate itself with the Project Management Unit of the Tamil Nadu Green Climate Company (TNGCC).
- 3) District Climate Change Mission shall coordinate with the activities of the Tamil Nadu Climate Change Mission in developing Climate Smart Villages, Climate Resilient Green Temples, Green Schools, Creation of Bio-shield, Blue Flag Beach, Sustainable Habitat, Carbon enrichment programme and Waste to energy power generation.
- 4) District Climate Change Mission shall conduct District Stakeholder workshops on integrating Climate Change adaptation and mitigation at the grass roots level to enhance development planning.

Strategies of District Climate Change Mission

- A. Integrate climate change adaptation and mitigation into development planning of the District.
- B. Undertake capacity building and improve institutional capacities.
- C. Develop a Monitoring and Evaluation framework for climate action projects.

Deliverables:

1. Prepare District level Climate Change Mitigation and Adaptation plan.
2. Provide input on low-carbon, climate-resilient development strategies and plans, review of sectoral plans and ensuring consistency with climate policy of the State Government.
3. Create a grass roots climate literacy programme.

4. Strengthen Climate Smart Villages.

7.2 Hon'ble Chief Minister's Green Fellowship Programme (CMGFP)

The Government recognizes the need to actively involve youth in various initiatives proposed, for Climate Change Adaptation and Mitigation activities in Tamil Nadu. Given that the future of India belongs to the youth of today, the Tamil Nadu Government, through the CMGFP, seeks to identify, nurture and mentor passionate young leaders on a wide range of issues concerning the environment.

The programme aims to disseminate climate change awareness by means and ways to attract younger generations and students and to create a pool of green ideas and technological interventions that will reduce the Environment Climate change impacts and to conserve Nature.

Hon'ble Chief Minister's Green Fellowship Programme will be implemented in 38 districts of Tamil Nadu. The CMGFP will be housed under the Director of Environment and Climate Change for planning, coordination, supervision and monitoring of all aspects of Chief Minister Green Fellowship Programme. The Green Fellows will provide necessary support for the District Climate Change Mission Units in their action towards adaptation and mitigation for Climate Change.

7.3 Green School programme

With Climate Change becoming a reality, young children need to be prepared for climate change adaptation and mitigation. The green revolution should begin with the younger generation.

25 schools shall be selected to implement the green vision of the Hon'ble Chief Minister of Tamil Nadu vide G.O.(Ms) No.174 of

Environment, Climate Change and Forest Department dated 03.10.2022. These schools shall undertake various green measures like energy efficiency by using solar lighting and use of solar pumps, setting up of solar borewell, adapting rain harvesting, composting, creating vegetables garden, medicinal garden and planting of fruit trees, reducing water use, recycling of waste water, creating a plastic free environment etc.

These schools shall be the torchbearers of the green school initiative which will inspire all other schools to follow the green footprints. The schools shall also be ranked on a green index to create a repository of information on green initiatives. An amount of Rs.5 crore shall be allocated by the government of Tamil Nadu towards this initiative in which Rs.20 lakh will be allocated to each school to be implemented under School Education Department.

7.4 Climate Studio:

The Government of Tamil Nadu has taken the initiative to set up an exclusive Climate Change Research Center viz., "Centre for Climate Change and Adaptation Research (renamed as **Centre for Climate Change and Disaster Management** (CCCDM)) at Anna University to strengthen the understanding of climate change and our capacity to manage and adapt to it.

Tamil Nadu State Action Plan on Climate Change (TNSAPCC) has identified Centre for Climate Change and Disaster Management (CCCDM), Anna University as the sectoral nodal agency for knowledge management in climate change.

The Climate studio is one of its kind established with high performance computation facility cluster with storage and accessories for climate modeling set up at Centre for Climate

Change and Disaster Management (CCCDM)) at Anna University.

Objectives of the Climate Studio

- To provide updated high resolution and robust cadastral level Regional Climate Scenarios for micro level policy planning covering entire Tamil Nadu.
- To do periodical assessment of Climate Change Impact & Vulnerability on Natural Resources viz., Agriculture, Water resources, Forest & Bio-diversity and Coastal area management based on continuous assessment reports of IPCC.
- To develop multi sectoral cadastral level spatial information using renowned softwares such as SWAT, MIKE (Water sector), Infocrop, DSSAT (Agriculture), SimCLIM (coastal), Maxent (Forest) etc., to give a clear idea of climate impact and

damages already caused on ecosystems and its future vulnerability on natural resources.

- To disseminate knowledge to stakeholders - planners, scientific world, NGO's and community in vernacular languages.

Activities of the Climate Studio

- Provide access to climate and vulnerability information for evidence-based adaptation planning at National, State and local level.
- Training Programmes for assessing the climate change impact on sectors such as Water, Agriculture, Forestry, Coastal, Urban habitation, Health and Biodiversity etc.
- Build scientific capacity to develop climate projections and determine vulnerability to support adaptation activities.
- Develop a network of institutions involved in climate studies and related research to

exchange data, techniques and also to pursue collaborative research activities.

Expected outcomes of the Climate Studio

- District /Block level climate Snapshots
- Easy access to climate information through a web portal.
- Periodical updation of international climate data to provide latest climate change information.
- Bring together all institutes and research centers working on climate related research to exchange data, techniques and to pursue collaborative research activities.
- Yellow page information linking all International and National scientific community involved in climate studies.

7.5 Blue Flag Certification for beaches

To plan sustainable tourism and healthy coastal management, MoEF&CC has conceived an Integrated Coastal Management Scheme viz. BEAMS (Beach Environment and Aesthetic Management Systems) Programme (also referred to as Beach Management Services) to reduce existing pollutants on beaches and to aspire & achieve high International Standards in India.

The Blue Flag Certification for beaches and marines is run by the international, non-governmental, non-profit Foundation for Environmental Education (FEE). The Blue Flag Beach must comply with 33 Blue Flag Criteria under 4 major heads- standards for quality, environmental education and information, the provision of safety and services and general environmental management. Blue Flag accreditation is a highly respected and recognized eco-label working to bring together the tourism

and environmental sectors at local, regional and national levels.

The Kovalam Beach in Chengalpattu District, was selected as the pilot beach as it meets the water quality and safety criteria as per the Blue Flag Standards, which is implemented by the Society of Integrated Coastal Management (SICOM), MoEF&CC, GoI. The Beach Management Committee (BMC) has been constituted under the Chairmanship of the District Collector, Chengalpattu District to monitor and supervise the Blue Flag Beach Programme at Kovalam Beach. The Kovalam Beach, Chengalpattu has been certified with Blue Flag Award for tourism season starting from October 2021 to May 2022 on 21.09.2021 and was again renewed for the year 2022-2023

During the Budget Speech for the year 2021-2022, the Government of Tamil Nadu has announced the intent for obtaining the prestigious

Blue Flag Certification for 10 Beaches in next 5 years at a total cost of Rs.100 crore. Presently, Baselines Studies are being done at these beaches after which the implementation will be carried out.

The Blue Flag Certification programme will be implemented at the following 10 beaches in various districts of Tamil Nadu:

1. Marina Beach, Chennai District
2. Manamelkudi Beach, Pudukottai District
3. Kushi Beach, Ramanathapuram District
4. Silver Beach, Cuddalore District
5. Kottaipattinam Beach, Pudukottai District
6. Neelankarai Beach, Chengalpattu District
7. Kameshwaram Beach, Nagapattinam District
8. Naravakkam, Marakkanam Beach, Villupuram District
9. Kayalpattinam Beach, Thoothukudi District
10. Neithal Nagar Beach, Nagapattinam District

7.6 Construction of Green Building

The Department of Environment was setup in the year 1995 and has been operating since then from a rental premise. The activities of the department have increased manifold in the last few years. In view of the increased/enhanced responsibilities of the department there is a need for an exclusive building catering to the requirements. The Government have issued an order for construction of a Green Building for the Department of Environment and Climate Change at a cost of Rs.20 crores with State of the Art Technology. On identification of suitable land and construction of Green Building will be carried out immediately.

8. Conclusion:

Balancing economic development and environmental protection is an art of refocusing on sustainability without hindering the growth of

either of them. Giving more impetus to Environment Impact Assessment for environment protection has become a mandate for mitigating the negative impacts of Climate Change. Government of Tamil Nadu has undertaken “New Initiatives” involving informed and planned programmes and policies that will be mutually beneficial for both the environment and society.

TAMIL NADU POLLUTION CONTROL BOARD

“நிலம் தீ நீர் வளி விசும்போடு ஐந்தும்
கலந்த மயக்கம் உலகம்”... என்கிறது

- தொல்காப்பியம்

ஐம்பூதங்களாகிய நிலம், நீர், நெருப்பு, காற்று,
ஆகாயம், முதலானவை கலந்தது தான் உலகம்.

*The world is a mixture of five elements: earth,
fire, water, air, and atmosphere. (Tholkappiyam)*

1. Introduction

Pollution prevention protects the environment by conserving and protecting natural resources while strengthening economic growth through more efficient production in industry and less need for households, businesses, and communities to handle waste. It is the duty of every citizen to protect and improve the natural environment. Based on the above, Government of Tamil Nadu established Tamil Nadu Prevention

and Control of Water Pollution Board vide G.O.No.340, Health and Family Welfare Department, dated 19.02.1982 under section 4 (1) of the Water (Prevention and Control of Pollution) Act, 1974 (Central Act 6) and notified in the Tamil Nadu Government Gazette on February 27th, 1982 and from then the Board functions. Subsequently, after framing the Tamil Nadu Water (Prevention and Control of Pollution) Rules, 1983, the Board was renamed Tamil Nadu Pollution Control Board (TNPCB).

TNPCB functions under the Environment, Climate Change and Forest Department. It is the statutory organization responsible for abatement and control of environmental pollution in the State by enforcing Central Acts pertaining to environmental protection. As per Section 4 of the Water (P&CP) Act, 1974, the Board comprises of Chairman, Member Secretary, five officials to represent State Government, five persons to

represent local authorities, three non-officials to represent interests of agriculture, fishery or industry or trade and two persons to represent companies or corporations owned by the State Government.

2. Function of the Board:

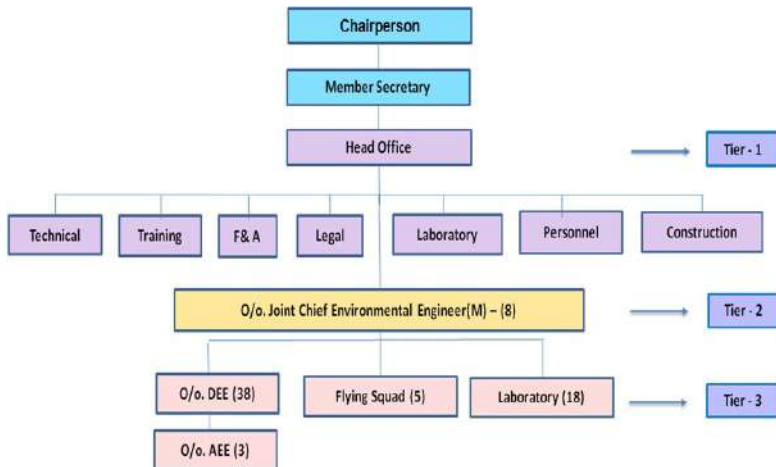
- To plan comprehensive programmes for prevention, control, and abatement of water and air pollution in the State.
- To advise the State Government on any matter concerning the prevention, control or abatement of water and air pollution.
- To inspect sewage or trade effluent works and plants for the treatment of sewage and trade effluent and to review plans, specifications or other data relating to plants set up for the treatment and the system for the disposal of sewage or trade effluents.

- To collaborate with the Central Pollution Control Board (CPCB) in organizing the training of personnel engaged or to be engaged in programmes relating to prevention, control or abatement of water and air pollution and to organize mass education programmes relating thereto.
- To encourage, conduct and participate in investigations and research relating to problems of water and air pollution and the prevention, control or abatement of water and air pollution.
- To establish or recognize laboratories to enable the Board to perform its functions efficiently, including the analysis of air samples, water samples from any stream or well and samples of sewage and trade effluents.
- To perform such other functions as may be prescribed or as may be from time to time

entrusted to it by the CPCB or the State Government.

3. Organizational Set-up

For effective and efficient functioning, the Board has a three-tier system consisting of (i) Head Office in Chennai, (ii) Eight Zonal Offices and (iii) Thirty-Eight District Offices. In addition, the Board has also established five Flying Squads and three Assistant Environmental Engineer offices.



The Tamil Nadu Pollution Control Board has also established Eight Advanced Environmental Laboratories (AEL) and Ten District Environmental Laboratories (DEL) for analysis of water, wastewater and air emission samples and for monitoring water sources and ambient air of the State.

The Head Office is located at Chennai and headed by the Chairperson. Eight Zonal offices are headed by Joint Chief Environmental Engineer (Monitoring), and thirty-eight District offices are headed by District Environmental Engineer (DEE). Apart from this, there are five flying squads at Erode, Tiruppur, Chennai, Salem and Vellore headed by Environmental Engineers.

Further, three Assistant Environmental Engineer (AEE) offices were formed in industrial hot spot areas viz Manali, Mettur and Ranipet

during the year 2021-22. Two District Environmental Laboratory at Orgadam and Nagapattinam have been formed during February, 2023 and Office of Joint Chief Environmental Engineer (M) Chengalpattu is under formation at Maraimalai Nagar.

4. Activities of the TNPCB

4.1. Consent Mechanism

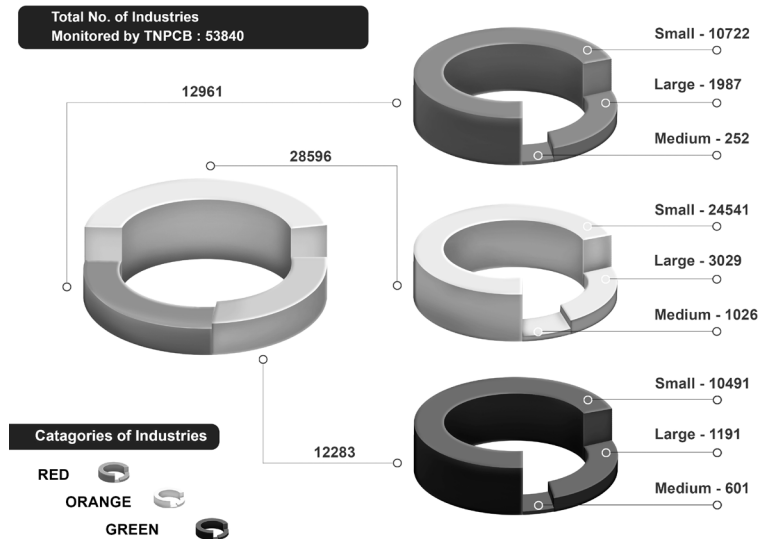
4.1.1. Categorization of Industries in Tamil Nadu

As per the CPCB direction, industries are classified as Red, Orange, Green and White primarily based on their Pollution Index. Industries are classified as Large, Medium and Small based on their Gross Fixed Assets (GFA). Following the above categorization and

classification, industries are categorized as follows:-

Classification based on GFA	GFA (Rupees in crores)	Category based on Pollution Index			
		Red	Orange	Green	White
Large	> 10	Highly Polluting	Medium Polluting	Less Polluting	Least Polluting
Medium	> 5 - ≤ 10				
Small	≤ 5				

The number of industries under the consent mechanism of the Board as on 31.03.2023 is given below:-



4.1.2. Criteria for issue of Consent to Industries

Consent to Establish and Consent to Operate are being issued by TNPCB in order to monitor industries in respect of air and water pollution. Consents are issued to industries in two stages. In the first stage, the 'Consent to Establish' (CTE) is issued after duly assessing amongst others the siting criteria. For e.g. There is a siting criteria of one km distance from embankments of rivers for highly polluting industries as per the G.O. (Ms.) No.213 Environment and Forests Department, dated 30.03.1989 and 5 km as per the G.O.(Ms.) No.127, Environment and Forests Department dated; 08.05.1998, with the prime objective of protecting precious water bodies. During the second stage, the 'Consent to Operate' (CTO) is issued to operate industrial units after ensuring the unit's compliance with the conditions

stipulated in the Consent to Establish. Foundry units are exempted from the above Government order subject to certain conditions.

As per Tamil Nadu Government Gazette Notification dated 21.02.2020, concerning Tamil Nadu's Protected Agricultural Zone (TANPAZ), TNPCB is strictly prohibiting zinc smelter, iron copper smelter, aluminum smelter, bone meal, processing of animal horn and other body parts, tannery, exploration, drilling and extraction of oil and natural gas including coal bed methane, shale gas and similar hydrocarbons, ship breaking industries and petrochemical industries in the Cauvery Delta region viz Thanjavur, Thiruvarur, Nagapattinam districts and Mayiladuthurai district as bifurcated from Nagapattinam district vide G.O.Ms.No.797, Environment Climate Change and Forest Department, dated 28.12.2020, Kattumannar Kovil, Melbhuvanagiri, Keerapalayam,

Parangipettai and Kumaratchi blocks of Cuddalore district, Aranthangi, Avudaiyarkoil, Manamelkudi, Tiruvarangulam and Karambakudi blocks of Pudukkottai district.

Government vide G.O.Ms.No.195. Industries (MMA.1) department, dated; 09.08.2021 has reconstituted the High Level Expert Technical Committee to take up the study, the impact of Hydro Carbon Exploration and Mining in areas other than the Protected Agricultural Zone.

4.1.3. Online Consent Mechanism

As part of the E-governance initiative of the Government of Tamil Nadu and to provide a healthy and proactive interface between the regulatory authority and industries, TNPCB has introduced an "Online Consent Management and Monitoring System (OCMMS)" from 19.01.2015 for transparency and promptness to consent management, facilitating industries for online

submission of applications for Consent to Establish / Consent to Operate / Renewal of Consent, online submission of documents, online remittance of consent fees, online submission of clarifications, besides knowing the status of applications. TNPCB operates the 'Care Centre' in the Head Office and all District offices to assist industries in submitting the application through OCMMS.

For efficient and effective implementation of the Acts and Rules and for quality monitoring, the TNPCB has constituted various committees such as Consent Clearance Committee (CCC) at Head Office, Chennai, Zonal Level Consent Clearance Committee (ZLCCC) at Zonal level and District Consent Clearance Committee (DLCCC) at District levels. Meetings are conducted by these committees at regular intervals to decide on the issue of consent.

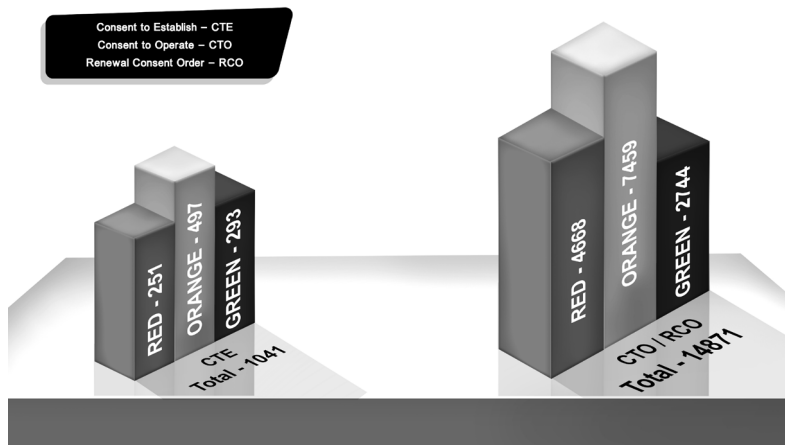
Apart from Consent to Establish and Consent to Operate, the Authorization for management of Hazardous & Other Wastes, Bio-medical Waste, Solid Waste, E-Waste, Construction and Demolition (C&D) Waste, and Registration for Plastic Waste & Battery Waste Handling to the industries are also issued Online, and the data is uploaded on TNPCB Web site.

- TNPCB issues Consent to Establish (CTE) to industries with seven years validity in case of Environmental Impact Assessment (EIA) attracting projects and five years validity in case of projects not attracting EIA.
- The Consent to Operate (CTO) is issued for eligible industries with entire validity period of 5 years, 10 years and 14 years for Red, Orange and Green category industries, respectively after collecting required consent fees.

- TNPCB issues CTO-Direct without the requirement of Consent to Establish (CTE) to the Green Category Industries proposed to be located in Industrial Use Zone / Industrial Estate as labeled through the Directorate of Town and Country Planning (DTCP) / Chennai Metropolitan Development Authority (CMDA) / Local Planning Authority (LPA) from 13.01.2020.
- As per the Announcement on the floor of the House by the Hon'ble Minister for Environment and Climate Change, the Consent to Operate (CTO)/Renewal of Consent to the industries are issued as a block instead of issuing consent every year under the Ease of Doing Business vide Government Order No. 144 Environment, Climate Change and Forest (EC.1) department, dated 08.10.2021.

4.1.4. Auto Renewal

The Board introduced a concept of 'Auto Renewal' of Consent for Red-Small and all Orange and Green category industries. Accordingly, consent is renewed for the industries without prior inspection, for which the industry has to furnish self-certification. This ensures grant of renewal of consent within seven days on receipt of application through Online Consent Management and Monitoring System (OCMMS). Consent to Establish (Extension) is also issued through Auto Renewal.



**Industries issued with CTE/CTO/RCO from
01.04.2022 to 31.03.2023**

5. Environmental Quality Monitoring for Water, Air and Noise:

Environmental Quality monitoring and data generation are vital to assess the environmental conditions and to support policy development and its implementation. As per the mandate given in the Water and Air Acts, TNPCB monitors the quality of Water, Air and Noise through various initiatives and programmes in the State.

5.1. Care Air Centre and Water Quality Watch

Care Air Centre functioning at the Head Office of TNPCB is established to monitor industrial stack emissions and the Ambient Air Quality of surrounding areas on real time basis (24x7). Major air polluting industries such as Cement, Oil Refinery, Petrochemicals, Thermal Power Plants, Fertilizers, Iron & Steel industries etc are connected to the Care Air Centre. In case the standards exceed the limit, auto-generated

SMS and e-mail messages are sent immediately to the industry and the concerned Joint Chief Environmental Engineers (M) and District Environmental Engineers to rectify the defects. Besides, this system ensures self-monitoring and rectification by industries. So far, 820 industrial units are connected to this centre for Stack monitoring and 154 industrial units for Ambient Air quality monitoring.

Following the success of the monitoring in the Care Air Centre, TNPCB has also incorporated the Water Quality Watch Centre. Major water-polluting industries such as Tanneries, Distilleries, Sugar factories, Pharmaceuticals, Pesticides, Textile Processing and Common Effluent Treatment plants (CETPs) etc are connected to this Centre. The quality of treated effluents is monitored on real-time basis. 360 industrial units are connected to this Centre and real-time

monitoring data are displayed on the website of TNPCB.

5.2. Water Pollution Monitoring Mechanism

TNPCB is monitoring the treatment system provided by the industries, Common Effluent Treatment Plants (CETPs), Sewage Treatment Plants (STPs) and disposal of sewage/trade effluent in achieving the prescribed standards before discharge into land, water bodies and sea.

5.2.1. Common Effluent Treatment Plants (CETPs)

Taking into consideration the key functions performed by Micro, Small, and Medium Enterprises (MSME) and the constraints in complying with waste water discharge standards by the individual units of small scale, TNPCB initiated an innovative scheme to ensure their growth in an environmentally sustainable manner. This Scheme promotes common facilities for the

treatment of effluents. The TNPCB plays a supportive role in establishing Common Effluent Treatment Plants (CETPs) for clusters of small-scale industries in various parts of the State. Board assists in formation of CETPs. TNPCB also assist small industries in evaluating technical proposals of CETPs through reputed institutions.

In Tamil Nadu, CETP schemes have been formulated for the following industrial sectors:

S. No.	Industrial Sector	No. of CETP Schemes
1.	Tanneries	13
2.	Textile Bleaching & Dyeing Units	19
3.	Electroplating Units	2
4.	Hotels & Lodges	1
5.	Pharmaceutical Industries	1
	Total	36

Apart from the 19 CETPs for textile bleaching and dyeing units, 10 CETPs are proposed in Erode and Namakkal districts for which CTE has been issued by TNPCB and the funding for these CETPs are sought under Integrated Processing Development Scheme (IPDS), Ministry of Textiles, Government of India and under "Nadanthai Vaazhi Cauvery" Project Scheme, Ministry of Jal Sakthi, Government of India.

In due compliance of the MoEF & CC Notification dated 01.01.2016, Inlet standards for 10 CETPs of tannery has been evolved by Central Leather Research Institute (CLRI) and approved by TNPCB.

5.2.2. Status of Sewage Treatment Plants of Urban Local Bodies

TNPCB is submitting monthly report to Government of India based on the data received from Chennai Metropolitan Water Supply and

Sewerage Board (CMWSSB), Commissionerate of Town Panchayat (CTP) and Directorate of Municipal Administration (DMA). Based on the above, it is reported that Tamil Nadu has a total population of 72.14 million with a total sewage generation of 3938.28 MLD. All Sewage Treatment Plants (STP) provided by the Urban Local Bodies (ULBs) are classified as red category by TNPCB. The State currently has 99 STPs either under operation or under trial run stage with a total treatment capacity of 2172.47 MLD. For which the Consent to Operate (CTO) was issued by TNPCB to 76 STPs and Consent to Establish (CTE) to 26 STPs. There are 16 STPs with capacity of 466.83 MLD under construction and 38 STPs proposed across the State which is currently under DPR preparation or tendering stage.

There are 32 Faecal Sludge Treatment Plants (FSTPs) under operation and 19 FSTPs under construction in the State. While 20 FSTPs

have been issued with CTO, 12 FSTPs that are under construction have been issued with CTE by the Board.

5.2.3. Actions taken by TNPCB to prevent discharge of untreated sewage into water bodies

Directions have been issued to CMWSSB, CTP and DMA to complete the Underground Sewerage System (UGSS) for unsewered areas and ensure that no untreated sewage is discharged into rivers or any surface water bodies. Directions have also been given to CMWSSB, DTP and CMA to construct and operate the STPs with valid consent of the Board. Based on the instructions by Central Pollution Control Board (CPCB), further directions have been issued to install Online Continuous Effluent Monitoring Systems (OCEMS) and Mobile Application in the existing STPs so as to monitor them effectively. The Board levies Environmental Compensation to the local bodies that do not comply with

conditions mentioned in the consent order or any other directions given by the Board.

TNPCB is continuously taking action by giving directions to Transport Department to cancel the Registration Number of the tanker lorries that are transporting and discharging sewage illegally into the water bodies. A total of 21 registration numbers have been recommended for cancellation by TNPCB during February 2023 and the same has been published in Daily Newspapers. Directions have also been issued to CMWSSB, CTP and DMA to install Digital Lock system in the Sewage Tanker Lorries in order to curtail discharge of untreated sewage into water bodies.

5.3. Monitoring of Water Bodies

5.3.1. National Water Quality Monitoring Programme

TNPCB is monitoring the water quality of inland water bodies in Tamil Nadu under the National Water Quality Monitoring Programme (NWMP) with partial funding from the Central Pollution Control Board (CPCB) in four major rivers viz. Cauvery, Tamirabarani, Palar and Vaigai and eight lakes located in Udthagamandalam, Kodaikanal, Yercaud, Veeranam, Porur, Poondi, Pulicat and Redhills. Water quality monitoring stations have been increased from 58 Stations to 72 stations during the year 2021-22. Monthly samples are collected and analyzed.

Further TNPCB is monitoring the groundwater quality from the year 2020 in 18 stations covering Erode, Namakkal, Salem, Karur,

Tirunelveli, Thoothukudi, Trichy and Tiruvallur Districts in the vulnerable areas of groundwater contamination. The samples are collected monthly / half-yearly basis and data generated is analyzed. The results are displayed on the TNPCB website and uploaded in Electronic Water Quality Data System (EWQDS) of CPCB.

5.3.2. National Rivers Conservation Plan (NRCP)

The CPCB has identified 51 stations for monitoring River water quality and sewage outfalls in the State under the National River Conservation Plan (NRCP) to assess the pollution caused to the rivers. Out of 51 stations, 35 stations are in river Cauvery and its tributaries, Vaigai, Vennar, Tamiraparani, Palar, Adyar, Coovum, Buckingham Canal and Otteri Nullah, 16 stations are at the outlet of STPs in major cities viz, Chennai, Bhavani, Erode, Pallipalayam, Kumarapalyam, Mayiladuthurai, Madurai, Trichy,

Thanjavur, Kumbakonam, Tirunelveli. Samples are collected in these stations on monthly basis. The data generated is analysed, and results are uploaded on TNPCB website.

5.3.3. Coastal Water Quality Monitoring

TNPCB is monitoring sea water quality at 34 locations in 14 coastal Districts of the State to assess the sea water quality of coast lines by collecting monthly samples. The sea water quality is classified from SW-I to SW-V category namely SW-I- Salt pans, Shell fishing, Mariculture and Ecologically Sensitive Zone, SW-II- Bathing, Contact Water Sports and Commercial fishing, SW-III - Industrial cooling, Recreation (non-contact) and Aesthetics, SW-IV – Harbour and SW-V - Navigation and Controlled Waste Disposal.

5.3.4. Polluted River Stretches

Based on the National Water Quality Monitoring Programme (NWMP) data, the CPCB has declared 351 river stretches in the country as polluted river stretches. Six river stretches fall in Tamil Nadu, namely Cauvery, Bhavani, Sarabanga, Thirumanimutharu, Vasishta, and Tamirabarani.

In all these river courses, pollution is mainly caused due to the discharge of sewage and the dumping of solid waste by local bodies. As per the Guidelines issued by the CPCB, an Action Plan for restoration of the above river stretches was prepared and approved by the CPCB. The Action Plan includes the construction of Sewage Treatment Plants, Solid Waste Management Facilities, Eviction of Encroachments, Averting Coastal Pollution and Industrial Pollution, providing Check Dams, Ecological Parks, etc. The Action Plan is being implemented through the

Directorate of Municipal Administration, Commissionerate of Town Panchayat, Public Works Department, Municipal Administration and Water Supply Department and Directorate of Rural Development & Panchayat Raj.

The implementations of the Action Plans are being reviewed by the River Rejuvenation Committee headed by the Additional Chief Secretary to Government, ECC&F Department. As per order of Honourable National Green Tribunal, Chief Secretary to Government of Tamil Nadu and Ministry of Jal Shakthi, Government of India shall personally monitor the progress. The Rejuvenation of the above Polluted River Stretches is under progress and the local bodies concerned have been advised to complete the works early as per the action plans. Due to continuous monitoring of the Polluted River Stretches, the priorities of three rivers viz.

Sarabanga, Cauvery and Bhavani out of six rivers have been reduced to lower levels.

5.4. Air Pollution Monitoring Mechanism

5.4.1. National Air Quality Monitoring Programme

Under the CPCB funded National Air Quality Monitoring Programme (NAMP), the TNPCB monitors Ambient Air Quality (AAQ) in major cities and industrial clusters at 28 stations in the State. These stations are located at Chennai (8), Coimbatore (3), Madurai (3), Salem (1), Tiruchirapalli (5), Thoothukudi (3), Mettur (2) and Cuddalore (3) for parameters like Particulate matter PM_{10} and $PM_{2.5}$, Sulphur dioxide (SO_2) and Nitrogen dioxide (NO_2) are monitored twice a week to have 104 observations in a year as per the CPCB protocol. Based on the observations Air Quality Index (AQI) is arrived and uploaded on the TNPCB website regularly for public view.

To monitor other towns in Districts under the NAMP, the Board has established additional 24 stations from October 2021, covering 8 districts with three stations in each District. The Districts are Dharmapuri, Kanyakumari, Perambalur, Sivagangai, Thiruvavarur, Theni, Villupuram and Thiruvannamalai. In total, under the NAMP project, TNPCB has established 52 stations in the State.

5.4.2. Continuous Ambient Air Quality Monitoring (CAAQM) Stations

In order to monitor the Ambient Air Quality (AAQ) on continuous basis, the Board installed 34 Continuous Ambient Air Quality Monitoring (CAAQM) stations. TNPCB has proposed to install 25 new CAAQM stations. The details are as follows:-

Name of the District	No. of stations Existing	No. of stations Proposed
Ariyalur	1	-

Name of the District	No. of stations Existing	No. of stations Proposed
Chengalpattu	1	3 (Pallavaram, Tambaram, Chengalpattu)
Chennai	4	-
Coimbatore	2	-
Cuddalore	2	1
Dindigul	1	-
Dharmapuri	-	1
Erode	1	1
Kallakurichi	-	1
Kancheepuram	1	1
Kanyakumari	-	1
Karur	1	-
Krishnagiri	1	1
Mayiladuthurai	-	1
Madurai	1	-
Nagapattinam	1	-
Namakkal	1	-
Perambalur	-	1

Name of the District	No. of stations Existing	No. of stations Proposed
Pudukkottai	1	-
Ramanathapuram	1	-
Ranipet	1	-
Salem	1	-
Sivagangai	-	2 (Sivagangai, Karaikudi)
Tenkasi	-	1
Theni	-	1
Thanjavur	1	1
Thiruvallur	3	2 (Thiruvallur, Avadi)
Thoothukudi	1	-
Tiruchirapalli	2	-
Tirunelveli	1	-
Tiruppur	1	-
Thiruvarur	-	1
Thriuvannamalai	-	1
Tirupattur	-	2 (Tirupattur, Ambur)
The Nilgiris	1	-

Name of the District	No. of stations Existing	No. of stations Proposed
Vellore	1	-
Villupuram	-	1
Virudhunagar	1	1
Total	34	25

The CAAQM stations monitor for the parameters PM₁₀, PM_{2.5}, SO₂, NO₂, NH₃, O₃, CO and Benzene, Toluene and Xylene (BTX) on continuous basis. The AAQ data and the AQI on real-time are linked to the TNPCB website and uploaded in Electronic Air Quality data system (EAQDS) of CPCB.

5.4.3. Non-Attainment Cities

Based on the National Air Quality Monitoring Programme (NAMP) data, the CPCB has identified 131 cities in the country as non-attainment cities, where the PM₁₀ level exceeded the annual average standard of 60µg/m³. High levels of particulate matter are due to movement of vehicles,

re-suspension of road dust, burning of solid waste, use of fuels in domestic and commercial establishments, industrial emissions etc. In Tamil Nadu, Thoothukudi, Trichy, Madurai and Chennai have been identified as non-attainment cities. The Action Plans to improve the air quality in these cities have been approved by CPCB and are under implementation by the line departments.

Under National Clean Air Programme (NCAP), Government of India funded an amount of Rs.482.89 Crores to Urban Local Bodies for the year from 2019 to 2023 is as follows.

S. No	Non-attainment cities	Amount sanctioned (Rs. in crore)				
		2019-20	2020-21	2021-22	2022-23	Total
1	Thoothukudi	0.06	3	-	4.13	7.19
2	Trichy	-	21	18.35	11	39.35
3	Madurai	-	31	22.35	16	69.35

4	Chennai	-	181	91	95	367.00
Tamil Nadu					Total	482.89

The sanctioned funds are utilized for Source Apportionment Studies, Training and development of public officials, afforestation –Miyawaki forests, end- to- end paving of roads, promoting battery operated vehicles, procurement of Mechanical Street Sweepers, water sprinklers to suppress dust etc for mitigating air pollution.



Road Cleaning Vehicle

5.5. Ambient Noise Monitoring Mechanism

Under the National Ambient Noise Monitoring Network Programme, CPCB has established Real-Time Ambient Noise Monitoring Stations at ten locations in Chennai City, covering silence zone, residential and industrial areas. The stations are located in Egmore, T.Nagar, Perambur, Guindy, Triplicane, Pallikaranai, Velachery, Washermanpet, Anna Nagar and Sowcarpet. The data is uploaded on the CPCB website.

6. Waste Monitoring Mechanisms

6.1. Bio-Medical Waste Management

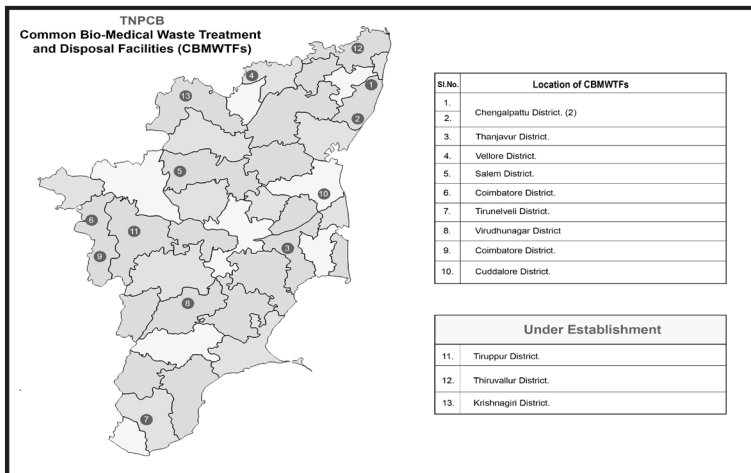
Bio-Medical waste is the waste generated during the diagnosis, treatment or immunization of human beings or animals or in research activities pertaining thereto or in the production or testing in biological labs. The Bio-Medical Waste Management Rules(BMWM), 2016 prescribe

the responsibility of the waste generators and the operators of the Common Bio-Medical Waste Treatment and Disposal facilities (CBMWTFs) for the safe handling and disposal of the bio-medical waste. The TNPCB issues Authorisation to health care facilities (HCFs) and CBMWTFs online and monitors the compliance of various provisions of Rules. The Government has constituted a State Level Advisory Committee to oversee the implementation of the Rules.

In the State of Tamil Nadu, as on date, 28435 Private and Government hospitals, including bedded and non-bedded clinics, veterinary institutions, pathological labs, blood banks and research institutions, have been issued with Authorization under BMWM Rules, 2016. The validity of the Authorization is synchronised with Consent validity.

6.1.1. Common Bio-medical Waste Treatment Facilities (CBMWTF)

CBMWTFs are functioning for the collection, transport, treatment and scientific disposal of bio-medical waste. The daily average generation of bio medical waste in the State during 2021 was 45.2 Tons. In Tamil Nadu, 10 CBMWTFs are in operation. The total installed capacity of the 10 CBMWTFs in operation is 90.35 Tons/Day (Incinerator: 56.5 Tons/Day & Autoclave: 33.85 Tons/Day). CBMWTFs located in Tamil Nadu are detailed below.



6.1.2. COVID-19 Bio-Medical Waste Management

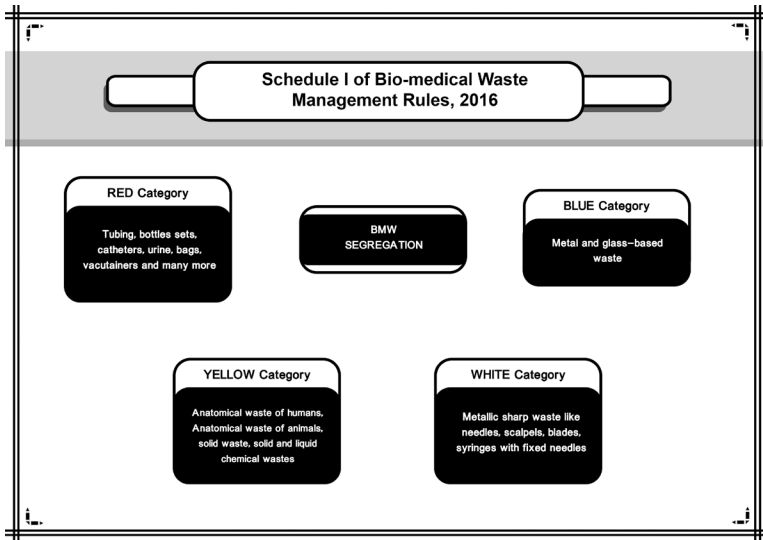
COVID-19 Bio-Medical waste generated from Health care facilities, Testing Centers, Labs and Urban Local Bodies are collected, treated scientifically, and disposed of through 10 CBMWTFs located in Tamil Nadu as per the Guidelines issued by the CPCB for COVID-19 waste management.

Based on the CPCB revised Guidelines for COVID waste management, the TNPCB issued instructions to all CBMWTFs to operate their facilities for extra hours to treat the increased quantity of COVID-19 BMW completely.

TNPCB has issued permission to the Treatment Storage Disposal facility (TSDF), Gummidipoondi to utilize the existing Hazardous Waste incinerator to incinerate COVID-19 bio medical waste as per the CPCB Guidelines.

The daily collection and disposal of COVID-19 Bio-Medical Waste are uploaded on the TNPCB website. Average daily generation of COVID-19 waste during the period January 2022 to February 2023 is 1.65 Tons.

Schedule I of Bio-medical Waste Management Rules, 2016



6.2. Battery Waste Management

The Ministry of Environment, Forest and Climate Change (MoEF&CC) notified the Battery

Waste (Management) Rules, 2022 in suppression of the Batteries (Management & Handling) Rules 2001 on 22.08.2022 under Environment (Protection) Act, 1986.

These rules shall apply to

- (i) Producer, dealer, consumer, entities involved in collection, segregation, transportation, re-furbishment and recycling of Waste Battery
- (ii) All types of batteries regardless of chemistry, shape, volume, weight, material composition and use.



Battery Wastes

The rules function based on the concept of Extended Producer Responsibility (EPR) where the producers of batteries are responsible for the collection and recycling/refurbishment of waste batteries and the use of recovered materials from waste into new batteries. Environmental compensation will be imposed for non-fulfillment of Extended Producer Responsibility targets, responsibilities and obligations set out in the rules.

6.3. Solid Waste Management (SWM)

Solid waste consists of biodegradable and non-biodegradable waste generated from domestic, commercial and industrial activities. The Solid Waste Management Rules prescribe responsibilities of local bodies for proper collection, treatment and disposal of municipal solid waste. In Tamil Nadu, 219 Authorizations as per the SWM Rules have been issued covering Corporations, Municipalities and Town Panchayats

which generate more than 5 tons of solid wastes per day.

To prevent the dumping of solid waste near the water bodies, the Hon'ble National Green Tribunal in its order dated 31.3.2022 in OA. No. 95 of 2021 & 30 of 2020 has directed the Chief Secretary to Government, Additional Chief Secretary for Environment, Climate Change and Forest Department, Additional Chief Secretary for Municipal Administration and Water Supply Department and Principal Secretary for Rural Development & Panchayat Raj Department to personally review and to submit the action plan for the implementation of the Solid Waste Management Rules, 2016 in the State of Tamil Nadu in an effective manner.

To prevent dumping of solid waste into water bodies and to enhance vigil and monitoring, flying squads have been formed in Chennai, Vellore and Salem Districts.

6.3.1. Bio-mining of legacy waste

Solid Waste Management Rules mandate Local Bodies to carry out bio-mining of old dumpsites and reclamation of land. Accordingly, the bio-mining of legacy waste has been identified by Local Bodies in 269 dumpsites in the State. In that, work has been carried out for 180 sites. Out of which 69 sites have been completed and 111 sites work is in progress and 360 acres of land have been reclaimed in the 69 locations.

6.4. Plastic Waste Management

Rapid increase in population, urbanisation, economic levels and industrial growth has led to massive increase in the plastic waste generation.

As per the Annual Report submitted by the Urban Local Bodies for the year 2021-22, a total quantity of 1088.734 Tons/Day of plastic waste has been generated from 21 Municipal Corporations, 138 Municipalities and 490 Town

Panchayats in Tamil Nadu. Out of this 95% (1028.25 Tons/Day) of the waste was collected and channelized for recycling and other purposes. The collected waste is then segregated and sent to resource recovery facilities and the recyclable waste is sold to the registered recyclers and the non-recyclable waste are disposed to cement manufacturers for co-processing.

As per Plastic Waste Management Rules, 2016 as amended, there are 216 numbers of authorized Plastic waste Recyclers in Tamil Nadu. The total amount of plastic waste channelized for recycling from the total plastic waste collected is around 1,76,319 Tons.

During the year 2021-22, about 8000 Tons of non-recyclable plastic waste has been utilised for road construction. There are 38 compostable plastic manufacturing units in the State which have been registered with Tamil Nadu Pollution Control Board.

6.4.1. Ban on Single Use Plastics (SUP)

The Government vide G.O.(MS) No.84 Environment and Forests (EC.2) Department dated 25.06.2018 have issued orders to ban certain types of one-time use and throwaway plastic items including plastic carry bags irrespective of thickness and size. The ban is in with effect from 01.01.2019.

The Ministry of Environment, Forest and Climate Change, Government of India vide notification dated 12.08.2021, notified ban on manufacture, import, stocking, distribution, sale and use of banned certain types of Single Use Plastic Items. The ban is in with effect from 01.07.2022.

6.4.2. Enforcement of Ban on SUP

Closure direction and disconnection of power supply were issued to 208 Industries (January 2019 to Feb 2023) involved in the manufacture of

banned plastic Items, including non-woven carry bags, plastic carry bags, water pouches, etc.

Frequent raids are being conducted by the ULB officials and fines are imposed against the users of Single Use Plastics (SUPs). There was 11,51,118 raids conducted from January 2019 until February 2023 of which 2018 Tons of Banned Single Use Plastics were seized and Rs.13.62 crores fine amount has been collected.

6.4.3. Special Enforcement Activities

TNPCB has carried out strict enforcement of Single Use Plastic ban and accordingly intensive activities were carried out during October-December 2022 as per the instructions of the Central Pollution Control Board with focus on Street Vendors, Flower and Fruit Sellers, Local Markets, Wholesale Markets, Industrial Areas, inter-state borders, inspection of concerned industries in all the districts of Tamil Nadu.

During the special enforcement drive, 17436 entities were inspected of which violators observed were 3970 for which 54.432 Tons of banned SUP items were seized and Rs.20.91 lakh of fine amount were collected.

6.4.4. Awareness Activities on SUP Ban

The following activities were taken up by the TNPCB:

- All the District officials of TNPCB have been conducting awareness campaigns in coordination with the District Collectors vested with the responsibility of ensuring the prevention of storage, supply, transport, sale, and use of banned plastic items. The awareness campaign carried out in various districts includes viz., vehicle campaign, distribution of pamphlets to the public, display of posters in District offices of TNPCB, Government offices, schools,

colleges, commercial establishments, public gathering areas such as hospitals, hotels, Industrial estates, Malls, Bus stands, Railway stations, theatres etc.

- TNPCB has issued Press Release in both English and Tamil on the ill effects of single use plastics. The Government's effort to enforce the ban on SUP was elaborated and the people's cooperation and support to eliminate the same were sought.

6.4.5. State Level Special Task Force (STF)

The Government vide G.O. (Ms.) No.25, Environment, Climate Change and Forest Department dated 07.02.2022 have constituted a State level Special Task Force (STF), under the Chairmanship of Chief Secretary, District level task force under the Chairmanship of District Collector and under the Chairmanship of the Commissioner for Greater Chennai Corporation area for monitoring the implementation of Single

use plastic (SUP) ban. The STF meetings were held on 05.03.2022 and 02.03.2023. All the nodal Departments have been addressed to implement the action points and make the initiatives for massive success in the State of Tamil Nadu.

6.5. Construction and Demolition Waste Management

Construction and Demolition (C&D) waste consists mainly of inert and non-biodegradable material such as concrete, plaster, metal, wood, plastics etc., which have the recycling value. The Construction and Demolition Waste Management Rules prescribe that the local bodies shall ensure proper management of construction and demolition waste. Large Corporations such as Chennai, Madurai, Coimbatore, Tiruchirapalli and Tiruppur have proposed to set up such processing facilities. In Greater Chennai Corporation, two facilities of 400 Tons/Day capacities each are in operation, one at Kodungaiyur and another at

Perungudi dumpsite. The Greater Chennai Corporation has established collection centers in 15 zones for receiving Construction and Demolition Waste.

6.6. E-Waste Management

The producers of the electrical and electronic equipment shall be responsible for the collection and channelization of e-waste generated from the 'end-of-life' of their products under Extended Producers Responsibility (EPR) as per the E-Waste Management Rules, 2016. The CPCB issues EPR authorization to the producer, and the TNPCB monitors the compliance of the provisions of the E-Waste Management Rules, 2016. The TNPCB grants Authorization to manufacturers, dismantlers, recyclers and refurbishers and details are uploaded on the TNPCB website.

The National Productivity Council (NPC), Chennai had carried out the e-waste inventorisation in the State of Tamil Nadu and submitted a list of inventory of manufacturers, dismantlers, recyclers and refurbishers in the State.

In the study carried out by the NPC, Chennai, the total generation of E-waste on weight basis is estimated to be 4,00,482 Tons for the year 2020 and for the year 2030 it is projected to 5,78,356 Tons for the entire State of Tamil Nadu.

About 8831 stakeholders (manufacturers, sellers, producers, bulk consumers, refurbishers, collection centers and recyclers) have been identified and directory of stake holders have been prepared. Action is being taken to inventorize all the stakeholders (as per the list) and to bring them under the purview of TNPCB for the scientific disposal of E-Waste.

Ministry of Environment, Forests and Climate Change, Government of India notified the E-waste (Management) Rules, 2022 on 02.11.2022. These Rules shall be effective from 01.04.2023.



E-Wastes

6.7. Hazardous Waste Management

Hazardous Waste is managed as per the provisions of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016. The Board has

identified 4284 industries generating hazardous waste and issue Authorization to 4266 industries. In 2021-22, 8.21 lakhs Tons of hazardous waste was generated, of which 0.95 lakhs Tons (11.57%) were landfill, 0.189 lakhs Tons (2.3%) incinerable, 1.14 lakhs Tons (13.93%) recyclable and 5.93 lakhs Tons (72.23%) utilisable waste. The Board is taking effective steps in handling, management, treatment, and disposal of hazardous waste in an environmentally safe manner.

6.7.1. Co-Processing of Hazardous Waste in Cement Plants

Utilisation of hazardous waste by co-processing in cement plant is considered as an environmentally sustainable option. Based on the CPCB guidelines, the Board has permitted the use of hazardous and other waste in cement kilns either as alternate raw

material for co-processing or as alternate fuel. Subject to the compliance criteria specified, authorization under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 has been granted to 14 cement industries to process 18.41 lakhs Tons of utilizable waste in cement kilns for co-processing annually. During 2021-22, about 2.18 lakhs Tons of Effluent Treatment Plant sludge has been utilised in various cement industries of Tamil Nadu for co-processing.

6.7.2. Hazardous Waste pre-processing facilities

In order to encourage co-processing of hazardous waste in cement kilns for beneficial purposes, four hazardous waste pre-processing units to make a homogenised mixture of materials suitable for co-processing in the cement kilns for direct use

either as raw material substitution or fuel supplementary is under operation. These facilities have pre-processed 0.43 lakh Tons of hazardous waste during 2021-22 and sent for co-processing in cement industries.

6.7.3. Remediation of Hazardous Waste Contaminated Site

- M/s Tamil Nadu Chromates and Chemicals Ltd. (TCCL) at Ranipet closed its operations in 1995. About 2.2 Lakh Tons of chromium sludge which was generated during the operation of unit was dumped within the premises in an extent area of 2 hectares. For remediation of contaminated site, a detailed project report was prepared through CPCB. In order to arrest the ground water pollution, TNPCB has decided to implement secured Capping and also to

provide garland storm water drain to divert the rain water at a cost of Rs.12 Crores as suggested in the Detailed Project Report.

- Further, the Hon'ble NGT (SZ) in its order dated 02.09.2022 in OA No. 186 of 2020 has directed TNPCB to implement the interim remedial measure of capping to stop further contamination within a period of one year and also to start the work of permanent remediation within a further period of six months. TNPCB has entrusted the work to M/s. Stratus Environmental Pvt. Ltd for preparation of technical document & tender document for implementing the Interim remedial measure.
- M/s. Hindustan Unilever Limited, Kodaikanal is carrying out the soil remediation of mercury contaminated area

in the unit's premises since March 2021. The activity is being carried out under the supervision of National Environmental Engineering Research Institute (NEERI). Total area for remediation is 17,858 sq.m till February 2023, 5176 sq.m area is remediated and 500 sq.m is under progress. The work will be completed by the end of December 2024.

- In 2013, there was an oil leakage in petroleum product conveying underground pipeline owned by M/s. Bharath Petroleum Corporation Limited in Tondiarpet area, Chennai. As a result, the ground water got contaminated. In order to remediate the contamination in the groundwater, the BPCL has started the remediation works for past 6 years. Now the remediation is nearing completion. As per the directions of the Hon'ble National Green Tribunal, the

Indian Council for Medical Research is carrying out health study in the above area so as to assess the health impact on the general public living in that area.

6.7.4. Steps taken to recover and reuse the Mixed Salt generated from the Zero Liquid Discharge (ZLD) system of Textile and Tannery units

In Tamil Nadu, about 100839.4 Tons and 162039.8 Tons of mixed salts generated from the Zero Liquid Discharge (ZLD) system of Tannery units (located in Vellore, Ranipet, Tiruppathur, Trichy, Erode, Kancheepuram, Tiruvallur, Dindigul and Chengalpattu Districts) and Textile processing units (located in Tiruppur, Erode, Namakkal and Salem Districts) respectively are stored in their premises under closed shed.

Further, the CPCB has issued Standard Operating Procedure (SOP) by June 2021 for utilization of mixed salt generated from textile units so as to recover salts for industrial use.

Based on that, a treatment and disposal facility by a private entrepreneur is under establishment at Ramanathapuram District for further processing of mixed salts and obtained Consent to Establish from the Board on 13.01.2023 valid upto 31.03.2027.

Further, attempts are being made to extract sodium chloride salt from the compound salt discharged from tanneries and use it experimentally in the production of fertilizers.

7. Legal Enforcement Mechanism

The Board is empowered to file complaints in the court of law, issue closure directions and stoppage of Power supply against defaulting/erring units under the various Environmental Acts.

7.1. Appellate Authority

Appellate Authority at Chennai has been functioning since 2000 and deals with appeals

preferred by industries against the orders of the TNPCB.

7.2. National Green Tribunal

The Southern Bench of the National Green Tribunal has been functioning in Chennai since 2012. Any person aggrieved by the orders of the Appellate Authority and by the order passed by TNPCB / State Government can prefer an appeal before the NGT within 30 days of the order passed by the Board / State Government / Appellate Authority.

7.3. Online Legal Case Management and Monitoring System (OLMMS)

TNPCB has developed an Online Legal Case Management and Monitoring System (OLMMS) for monitoring/tracking legal cases filed in various Courts viz. Hon'ble Supreme Court of India, Hon'ble High Court of Madras, Madurai bench of

Hon'ble High Court of Madras, Hon'ble NGT and Appellate Authority.

8. Other Activities

8.1. Environmental Training Institute

The Environmental Training Institute (ETI) of TNPCB functions in the Head office of TNPCB and provides training to the Board staff, industrial representatives, executives of Municipalities, Corporations, line departments and NGOs on pollution control and environmental protection. From April 2022 to February, 2023 ETI has conducted 10 internal training programmes and 11 external training programmes. Totally, 1073 participants were benefited through these training programmes.

8.1.1. Training Programs for TNPCB officials

TNPCB imparts training on new technologies pertaining to Environment, Environmental Acts/Rules, Self Development, Time Management,

Stress Management to Government Officials, Board Engineers and Scientists through Environmental Training Institute.

8.2. Environmental Awareness Programme

To create awareness among the public and to take positive action to protect the environment, the Board conducts various environmental awareness programmes every year through rallies, environmental quiz competitions, planting tree saplings, campaigns through auto-rickshaws, distribution of pamphlets, display boards, broadcasting in FM Radio and screening of short films through visual media etc. In addition, during Deepavali and Bhogi festival season, the Board conducts a special air quality survey.

The Board also monitors the water quality of the water bodies before and after the immersion of Vinayagar idols, and reports are sent to Central Pollution Control Board(CPCB).

8.3. Online Grievance Petition Redressal System (OLGPRS)

To redress the environmental pollution-related public complaints, the Board has established an online Grievance Petition Redressal Mechanism for filing complaints. From April 2022 to February 2023, 3696 complaints were registered in OLGPRS and 2874 complaints were investigated and completed.

9. New Initiatives/ Flagship Programmes taken up by TNPCB

Modernization of TNPCB

- Assistant Environmental Engineer offices functioning from December, 2021 at Hotspots/Vulnerable areas such as Manali, Ranipet and Mettur for monitoring industries, enhanced supervision and handling of investigation/ complaints within the stipulated time.

- Flying Squads (FS) at Chennai, Vellore and Salem were formed to monitor and protect water bodies from the discharge of sewage/effluent and dumping of solid wastes. They are functioning from December, 2021.
- Joint Chief Environmental Engineer (Monitoring), Cuddalore Office was formed in order to improve the efficiency of monitoring mechanism as there is more number of 17 category industries located in and around Cuddalore and it is functioning from December 2021.
- New Joint Chief Environmental Engineer (Monitoring) Office is under formation at Chengalpattu (Maraimalai Nagar) in order to ensure better supervision and monitoring of various provisions of Water Act, Air Act and Environment Protection Act and Rules made there under.

- IT wing in the Board has been formed for maintaining various IT web Applications.

Utilization of E-Vehicles

- As a part of reduction in Green House Gases(GHG) emission,TNPCB purchased 25 E-Vehicles which were flagged off by Hon'ble Chief Minister of Tamil Nadu on World Environment Day (05.06.2022) and are being used.

Issue of Consent CTO/RCO as a block

- TNPCB issues Consent to Operate (CTO)/Renewal of consent as a Block instead of issuing consent for every year under Ease of Doing Business policy of the Government CTO / RCO to the Red, Orange and Green category industries for the extended period of 5/10/14 years respectively on getting the necessary consent fee from December 2021. From

1st April, 2022 to 28th February, 2023 totally 10428 industries have been issued with bulk consent. This facilitates the industries from making application for consent every year, reduces file processing time of TNPCB, and enhances monitoring of various waste management and abatement works of environmental pollution. Industries have furnished their positive feedback on the usefulness and benefits obtained through this provision.

Establishment of Real Time Water Quality Monitoring Stations (RTWQMS), forecasting Air Quality and Integrated Environmental Monitoring Studio (IEMS)

- As per the Finance Minister Announcement in Budget Speech 2021, TNPCB is initiating the establishment of Real Time Water Quality Monitoring Stations (RTWQMS) and Continuous Ambient Air Quality Monitoring Stations (CAAQMS).

- Establishment of forecasting Air Quality on real time basis with early warning system in collaboration with Anna University and Swiss Federal Agency.
- TNPCB is initiating to establish India's first Integrated Environmental Monitoring Studio to monitor industrial air/water quality, tracking of Bio Medical/ Hazardous Waste and all web applications.

Action taken on erring units

- TNPCB has issued closure order to erring 366 industrial units and issued show cause notice to 4190 industries for non compliance of Consent Conditions and Environment Regulations during April 2022 to February 2023 to protect the Environment.

Open House Session

- To make the functions of the Board more transparent and in turn to generate

confidence and trust among the stakeholders, Board is conducting "OPEN HOUSE SESSION" (OHS) on 5th of every month from April 2022 at all TNPCB offices wherein the public can interact with officials and sort-out their issues across the table. From April 2022 to February 2023, 498 complaints were registered in Open house and 480 complaints have been resolved.

Green Champion Awards

- From the year 2021 onwards, TNPCB presents Green Champion Awards to Organization / Education Institutions / Schools / Colleges / Residential Welfare Associations / Individuals / Local body / Industries that have made exemplary contribution towards environment conservation and protection. 100 awardees from the above categories would be selected every year for the Award. Each

Award carries a cash prize worth Rs.1.0 lakh. In the year 2021-22, 85 proposals were selected by 32 District Collectors for the issue of Green Champion Award. Hon'ble Chief Minister of Tamil Nadu presented the Green Champion Awards to the selected awardees on the World Environment Day 2022. The selection of awardees for the year 2022-23 is under progress and awards will be issued during World Environment Day 2023.

Announcement on People's Campaign against Plastic - Meendum Manjappai

- The Hon'ble Chief Minister of Tamil Nadu launched the Meendum Manjappai campaign in 23.12.2021 to create awareness among the people and to promote alternatives to plastic, alongside enforcement of ban on SUPs. Meendum Manjappai campaign

is a massive people's campaign against throwaway plastics which is "a call for back to basics and into the future" with traditional nature-based solutions. The campaign urge citizens to replace use of single use plastic carry bags with Manjappai, a traditional symbol of Tamil culture.

- TNPCB, in coordination with Government of Tamil Nadu and Ministry of Environment, Forest and Climate Change (MOEF&CC), Government of India, organized a first of its kind National Expo on Eco alternatives to Single Use Plastics (SUPs) and Start-up Conference 2022 on 27.09.2022 & 28.09.2022 at Chennai Trade Centre in Chennai. The Expo was organized with an objective to create a conducive environment for

manufacture and sales of alternatives to plastic, promote use of such alternatives to banned plastic and to create awareness among the public on the availability of a diverse set of alternatives for SUPs. A total of 173 number of exhibitors from all over India had participated in the expo.

- A first of its kind directory on Manufacturers & Suppliers of Eco-alternative materials for SUP with details on 659 eco alternative manufacturers in Tamil Nadu was released in order to promote the availability and visibility of eco-alternatives to SUPs among businesses like hoteliers, caterers, marriage Halls, theatres, malls etc. The directory comprises of district-wise details of manufacturers and

suppliers of eco-friendly alternatives to Single Use Plastic products and has received applause from the Hon'ble Madras High Court. The directory is used as a reference document and looked upto by other Pollution control boards.

- The campaign is being implemented in all districts and awareness activities are being conducted in coordination with District Collectors and line departments. The local bodies are taking action to inspect the shops / commercial establishments to check the use of SUPs and are seizing the materials already banned by the Government of Tamil Nadu and imposing fine thereon.

- **High Court plastic free zone**

- In support to the campaign and to make Manjappai available and accessible to general public, the Government of Tamil Nadu came up with a first of its kind cloth bag vending machine and has installed these machines at strategic locations with high footfall like markets, malls, public building premises such as Madras High Court Premises at Chennai and Madurai, Koyembedu Market complex, District Collectorate offices etc., with a motive to make the Madras High Court and Madurai bench of Madras High court premises free from SUPs, the TNPCB has installed five Manjappai vending machines and two Reverse Vending Machines in Madras High Court premises and five Manjappai Vending Machines and one

Reverse Vending Machines in the Madurai Bench of the Madras High Court.

- So far, 36 Manjappai Vending Machines have been ordered and 16 vending machines have been placed at various strategic locations in the State. These machines have catered to a demand of nearly 25000 Manjappais till date.

- **Meendum Manjappai Express- Exhibition On Wheels**

- It is also proposed to launch the Manjappai Express - multi stakeholder targeted exhibition train travelling the entire State of Tamil Nadu in the month of June, 2023 on World Environment Day to create massive awareness to Students, Self Help Groups (SHGs)& General Public on impact of plastics and reviving our

ecofriendly tradition in the fight against single use plastics.

- **Manjappai Awards**

- Government of Tamil Nadu have announced Manjappai awards to reward 3 best schools, 3 best colleges and 3 best commercial establishments on their efforts to avoid single use plastics within their premises and to create awareness regarding the need for transitioning to alternative materials to plastic. The efforts shall be evaluated for a period of one year from 1st April 2022 to 31st March 2023 and the Awards shall be presented on World Environment Day 2023. The evaluation would be based on around 10-15 well defined criteria including reduction in use of single use plastics, initiatives in creating awareness, other environmental awards won by

the institution or establishment, participation in environment theme related events, observance of World Environment Day etc.

- **Carbon-Neutral Koyambedu Market Complex**

- Government of Tamil Nadu has undertaken effective steps to achieve Carbon Neutrality for the Koyambedu Market Complex which is one of Asia's Largest Market Complex which would set an example for other cities and States to follow. The project will be facilitated by TNPCB in coordination with CMDA and GCC. IIT Madras has been entrusted to carry out the DPR for the project. Vision for the carbon neutral Koyambedu market complex encompasses aspects around using renewable energy sources, creating green spaces, use of sustainable

materials, ways to reduce carbon footprints, implementation of single use plastic ban and ensuring that environmental responsibility is brought in entire functioning of the market complex. The estimated cost of the project is Rs.25 Crores.

Green Rating of Industries

- TNPCB proposes to launch a system for green rating of the industries which is an initiative that can be hugely beneficial for the environment as it assesses industries on their environmental performance to encourage them to align to best practices such as, energy efficiency, reducing green house gas emissions, water conservation, renewable energy generation and circular economy – oriented waste management etc. Green Rating of Industries will facilitate industries on their performance in achieving

the environmental standards and encourage the industries to go beyond the standards to improve the environment by adopting cleaner technologies and other innovative initiatives. Industries will be rated as Platinum, Gold, Silver and Bronze based on their performance.

Action taken on NGT Orders

- TNPCB proposes to conduct “Carrying Capacity Study” in Manali area so as to take necessary decision for issue of consent for new industries and expansion for existing industries.
- As per Hon’ble NGT order in OA No. 147/2020 dated 24.08.2022, 943 number of Poultry farms have been inventorised in Namakkal District and 70 number in Erode District. Action is being taken to bring them under the purview of TNPCB.

Power Delegation for ease of doing business

- Board vide proceeding dated 13.04.2022, 23.08.2022 issued power delegation to JCEE (Monitoring) for the issue of CTO and RCO to 29 type of industries including mining of minor minerals with sand quarry falling under B1 & B2 Category projects. Further approval has been issued by the Board in its meeting date 16.03.2023 to extend the same.

Capacity Building for TNPCB Employees

- For brainstorming of Engineers/Scientist, TNPCB organizes a programme called "Listening to Leaders". Every 2nd and 4th Thursday experts in the field of environmental protection have made presentation on various topics of environmental protection. This programme is being conducted in hybrid mode and so far seven programmes were conducted.

10. Sustainable Development Goals

The Sustainable Development Goals (SDGs) are an inter-governmental agreed set of targets relating to international development to end poverty, protect the planet and ensure that all the people enjoy peace and prosperity. The SDGs cover 17 goals and 169 targets resolved in UN Summit held in September 2015. India is a signatory of the 2030 Agenda, committed to achieve SDGs. The Goals, Targets and Indicators pertaining to TNPCB are as follows:

Goal - 6, '*Clean Water and Sanitation*' has set a Target 6.3 – By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.

This Goal comes under Working Group-2 'Health Care and Sanitation'. This Goal is not directly linked to TNPCB but linked indirectly through the Indicator 6.3.2. Percentage of industries complying with waste water treatment as per CPCB norms (Indicator No.6.3.2) is set as one of the Indicators and this comes under TNPCB.

This Indicator aims to ensure that all industries treat the trade effluent to comply the norms of CPCB. The TNPCB emphasizes all the highly polluting industries to provide Zero Liquid Discharge (ZLD) system for trade effluent with an aim to recycle treated waste water thereby reducing the consumption of raw water for industrial purpose. Further, this Indicator is a National Indicator.

Goal - 9, '*Industries innovation and infrastructure*' has set a Target 9.2 – Promote inclusive and sustainable industrialization and by

2030, significantly raise industries share of employment and gross domestic product in line with national circumstances and double its share in least developed countries.

This Goal comes under Working Group-5 'Innovation, Industrialization and Sustainable Development'. This Goal is not directly linked to TNPCB but linked indirectly through the Indicator 9.4.1a. Number of air quality monitoring stations (Indicator No.9.4.1a) is set as one of the Indicators and this comes under TNPCB.

The TNPCB monitors ambient air quality at 87 stations (52 manual stations under the National Air Quality Monitoring Programme (NAMP), 34 Continuous Ambient Air Quality Monitoring Stations (CAAQMS) and 1 mobile CAAQMS) covering the district head quarters and major industrial clusters. The TNPCB's proposal to establish furthermore 25 CAAQMS in the State to monitor the air quality in the cities / urban / rural

areas of Tamil Nadu is under progress. Four cities were identified as non-attainment cities with reference to particulate matter level. Action is being taken to improve the air quality in these cities.

Further, this Indicator is not a National Indicator but is monitored at the State level and District level under the State Indicator Framework and District Indicator Framework respectively.

Goal - 12, 'Responsible Consumption and Production' has set a Target 12.4 – By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment and a Target 12.5 – By 2030, substantially reduce waste generation

through prevention, reduction, recycling and reuse.

This Goal comes under Working Group-6 'Sustainable Consumption and Production'. This Goal is not directly linked to TNPCB but linked indirectly through the Indicators 12.4.2a, 12.5.4 and 12.5.5.

Environmental quality monitoring by introduction of monitoring stations across the State (Indicator No.12.4.2a), Per capita hazardous waste generated (Indicator No.12.5.4) and Ratio of processed quantity of hazardous waste sent to recycle to hazardous waste generated (Indicator No.12.5.5) are set as Indicators and these come under TNPCB.

This Indicator 12.4.2a aims to monitor the quality of environment by introducing water quality monitoring stations, air quality monitoring stations, ambient noise monitoring stations etc.

The TNPCB monitors water quality of inland surface water bodies through its 175 stations with 158 stations installed under National Water Quality Monitoring Programme (NWMP) and 17 under Chennai City Waterways Monitoring Programme (CCWMP). Similarly, ambient air quality is monitored through 87 stations in the State and ambient noise level in 10 locations in Chennai city. The data are uploaded in TNPCB website. Further, this Indicator 12.4.2a is monitored only at the District level under the District Indicator Framework.

The Indicator 12.5.4 aims to assess the quantity of hazardous waste generated per head. This Indicator is a National Indicator and is also monitored at the District level under the District Indicator Framework.

The Indicator 12.5.5 aims to assess the quantity of hazardous waste recycled. This Indicator is a National Indicator and is also

monitored at the District level under the District Indicator Framework.

Goal - 13, 'Climate Action' set a Target 13.3 – Improve education, awareness raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.

This Goal comes under Working Group-7 'Sustainable Environment and Climate Change'. This Goal is not directly linked to TNPCB but linked indirectly through the Indicator 13.3.2.

Strengthening of institutional, systemic and individual capacity building to implement adaptation, mitigation and technology transfer and development actions in the State (Indicator No.13.3.2) is set as one of the Indicators and this comes under TNPCB.

This Indicator 13.3.2 aims to strengthen capacity building to bring about developments in

the State. The TNPCC conducts training programmes through its Environmental Training Institute (ETI) and also encourages TNPCC officials to attend training programmes conducted by Technical Expert Institutions. Further, in order to create environmental awareness among the public, several awareness programmes on waste management are conducted especially during festival seasons throughout Tamil Nadu by the District Environmental Engineers of TNPCC in their respective Districts.

Siva.V. Meyyanathan
Minister for Environment and
Climate Change



Green Award presented to the District Collectors of Madurai, Thiruvannamalai and Villupuram District on Environment Day, 05.06.2022 by the Hon'ble Chief Minister of Tamil Nadu



Hon'ble Chief Minister of Tamil Nadu flagged off 25 E-Vehicles for TNPCB on World Environment Day (05.06.2022) as a part of reduction in GHG emission



Inauguration of National Expo on Eco-alternatives, conducted by Tamil Nadu Pollution Control Board in coordination with GoTN and MoEF&CC, Gol on 26.09.2022



Launch of Single use Plastic Free Madras High Court on 10.11.2022
presided by the Hon'ble Acting Chief Justice, Madras High Court



Tamil Nadu Climate Change Mission Launched by Hon'ble Chief Minister on 09.12.2022



MoU signed with UNEP for implementing urban cooling programme for Tamil Nadu



First Meeting of the Tamil Nadu Governing council on Climate Change under the Chairmanship of Hon'ble Chief Minister of Tamil Nadu on 3.3.2023.



Climate Delegation Meet organized by Tamil Nadu Green Climate Company on 24.03.2023

