

# As-Is Assessment

Implementation of Single Use Plastic (SUP) ban in Tamil Nadu

September 2023

Submitted to

Tamil Nadu Pollution Control Board



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## List of Abbreviations

BCC	Behavioral Change Communication
BO	Brand Owner
CAP	Comprehensive Action Plan
CC	City Corporations
CES	Circular Economy Solutions
CIPET	Central Institute of Petrochemicals Engineering & Technology
CMA	Commissionerate of Municipal Administration
CPCB	Central Pollution Control Board
CPCN	Certificate of Public Convenience and Necessity
CSR	Corporate Social Responsibility
CTE	Consent to Establish
CTO	Consent to Operate
DEE	District Environmental Engineers
DM	District Magistrates
DoEFCC	Department of Environment, Forest, and Climate Change
DRS	Deposit Return Systems
DTP	Directorate of Town Panchayats
EC	Environmental Compensation
EMAT	Environment Management Agency of Tamil Nadu
EoLD	End of Life Disposal
EPR	Extended Producer Responsibility
EPS	Expanded Polystyrene
EV	Electric Vehicles
FiT	Feed in Tariffs
FSSAI	Food Safety and Standards Authority of India
GCC	Greater Chennai Corporation
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GO	Government Order
GoTN	Government of Tamil Nadu
GP	Gram Panchayat
GSM	Gram per Square Meter



IEC	Information, Education and Communication
INR	Indian Rupee
Kt	Kilotonne
LDPE	Low density polyethylene
LED	Light emitting diode
LiFE	Lifestyle for the Environment
LLDPE	Linear low-density polyethylene
MAWS	Municipal Administration and Water Supply Department
MLP	Multi Layered Plastic
MoEFCC	Ministry of Environment, Forest, and Climate Change
MoU	Memorandum of Understanding
MSME	Micro, Small and Medium Enterprises
MT	Megatonne
NABARD	National Bank for Agriculture and Rural Development
NCC	National Cadet Corps
NGO	Non-Governmental Organization
NGT	National Green Tribunal
NHAI	National Highway Authority of India
NSS	National Service Scheme
NYK	Nehru Yuva Kendra
OA	Original Application
PCC	Pollution Control Committee
PET	Polyethylene terephthalate
PIBO	Producers, Importers, and Brand Owners
PMU	Project Management Unit
PP	Polypropylene
PS	Polystyrene
PSU	Public Sector Undertakings
PVC	Polyvinyl chloride
PW(M&H) Rules	Plastic Waste (Management & Handling) Rules
PWM	Plastic Waste Management
PWP	Plastic Waste Processors



RDF	Refuse Derived Fuel
RWA	Resident Welfare Association
SBM	Swachh Bharat Mission
SHG	Self Help Group
SLAC	State Level Advisory Committee
SLMC	State Level Monitoring Committee
SOP	Standard Operating Procedure
SPCB	SPCBs
STF	State Task Force
SUP	Single Use Plastic
TNPCB	Tamil Nadu Pollution Control Board
UDD	Urban Development Department
ULB	Urban Local Body
UNEP	United Nation Environmental Program
UT	Union Territory

# Context

Increasing plastic pollution which could lead to long lasting environmental degradation on land and in water has resulted in many countries, coming up with various restrictions on use of plastic. Single Use Plastic (SUP) Ban (ban on use and throw plastic) is one of such regulation and is being increasingly adopted by various countries to control the plastic menace. However, successful implementation of the same varies highly from region to region, calling for a strategic approach with prioritized action, based on the regional characteristics such as demographics, plastic production and waste handling capacities, availability of fund etc.

In India, nationwide single use plastic ban was enforced with effect from 1 July 2022 and various states are taking varied efforts to bring down the use of single use plastics in the state. In this context, Government of Tamil Nadu has been taking several measures for imposing this ban since 2019, which further gained momentum with the National Level Ban on SUPs. Tamil Nadu Pollution Control Board was keen to understand the effectiveness of these initiatives and the extent of penetration of the ban on single use plastics among general public. In line with this, TNPCB wanted to conduct an as is assessment of the various initiatives taken towards reducing the use of single use plastics. This assessment will help to understand the strengths and weaknesses in current approach to implement the ban and to identify the key areas requiring strategic interventions.

This As-is Assessment report assesses various initiatives taken by GoTN , which are grouped into five categories, namely; institutional and regulatory ecosystem, enforcement of ban, IEC and awareness creation, promotion of alternatives and monitoring and evaluation. The need for an outcome-based approach for implementation of SUP ban forms the basis of this assessment and is carried out based on the understanding of key requirements for the same. This understanding is gathered from various case studies and isolated frameworks highlighting outcome based and prioritized approach to implementing regulatory interventions that promote behavioural change or market changes. The assessment has been conducted through a combination of qualitative and quantitative research methods, including review of regulations, stakeholder consultations, data analysis (based on the data availability), and site visits.

The findings from the assessment are expected to pave the way forward to taking a planned strategic approach for implementation of SUP ban holding on to the strengths of the current systems and addressing the identified gaps, while ensuring engagement of all involved stakeholders.

# Introduction



# 1 Introduction

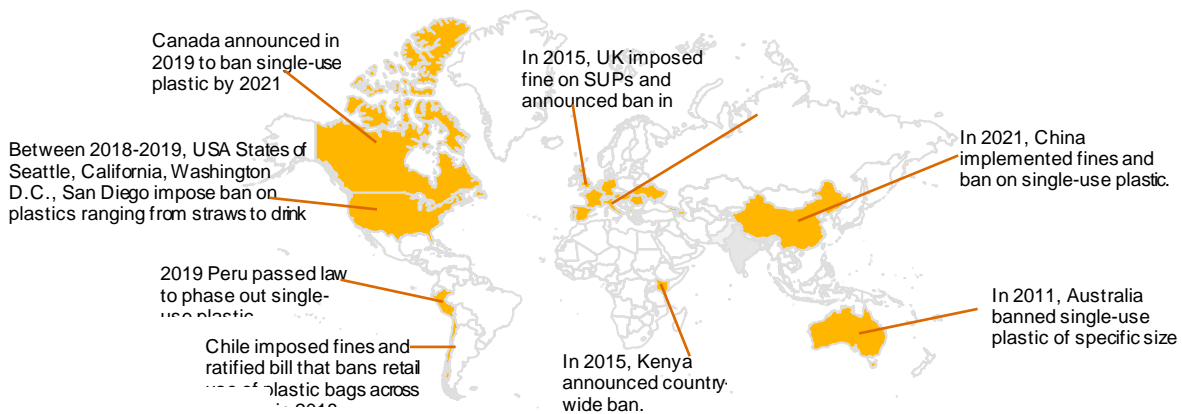
Rapid urbanisation and lifestyle changes increased the dependence on plastic, and with necessary innovation and research, resulted in making plastic one of the most budget-friendly packaging material for all. With technology and innovation, plastic has been gradually changing its form to thinner plastics and multi-layered plastics, further improving convenience, and reducing cost. These thinner plastics or multi-layered plastics are widely used for product packaging including food and beverages, leading to its 'single use and throw' nature. These Single Use Plastics (SUP) started forming a major share of municipal plastic waste with changes in lifestyles and reduction in cost of such packaging, resulting in it being the first choice for all kinds of packaging.

Each plastic type has its own methods of recycling and limits to recycling. While SUP packaging offers multiple benefits and exists in multiple forms, the common denominator lies in the limited recyclability of single-use plastic. Single-use plastic has limited recyclability and therefore, is dangerous to humans and the environment because it does not decay, rather it seeps into soil, food, and even living beings<sup>1</sup>. The increase in SUPs alongside its limited recyclability and low value upon recovery, lead to visible littering and piling of this plastic waste at material recovery and disposal facilities. In addition, the COVID-19 pandemic brought a new wave of single-use plastic production for hygiene and safety purposes, of which, the consequences are starting to manifest in the living environment.

In cognizance of the issue, governments have been taking various measures to deal with SUP waste recycling and disposal (e.g., measures to direct cement kilns to use this waste as fuel by co-processing). While such initiatives were focused on improved management of plastic waste, it was also realised that in addition to the measures taken to manage such waste, there needs to be increased focus on 'waste reduction' to limit use of certain problematic or widely used 'SUP', which could be replaced by more sustainable options.

Globally, governments have been mobilising their efforts to curb SUPs since the last decade. Countries across the world as well as multinational corporations have imposed some form of restriction on the production, sale and consumption of SUPs. Each country has taken unique approaches to implementing restrictions, for example, the UK has a country-wide fine on single-use plastic bags, the EU ban is focused on cutlery, ear buds and other plastic items, while Peru has banned consumption and usage of SUP plastic bags in national parks and other heritage sites. The following figure enumerates such restrictions or bans practiced across various countries.

Figure 1-1: Overview of global efforts to curb SUPs



<sup>1</sup> <https://www.theguardian.com/environment/2022/mar/24/microplastics-found-in-human-blood-for-first-time>

## 1.1 Single Use Plastic Ban in India

India generates around 2.4 Lakh tonnes of Single Use Plastic (SUP) per annum with per capita production of SUP being 0.18 Kg per year. While an Indian uses only one-twelfth of the SUPs that an American use, the magnitude of effects of such use is not small, which leaves both people and the governments struggling with the plastic waste menace arising due to SUP use. Over the last two decades, the central government has been developing policies and regulations on plastic waste management, including that for management and restriction of SUPs. Many States have been proactively making efforts in curtailing or reducing consumption of SUPs. Sikkim was the first Indian State to ban plastic bags in 1998.

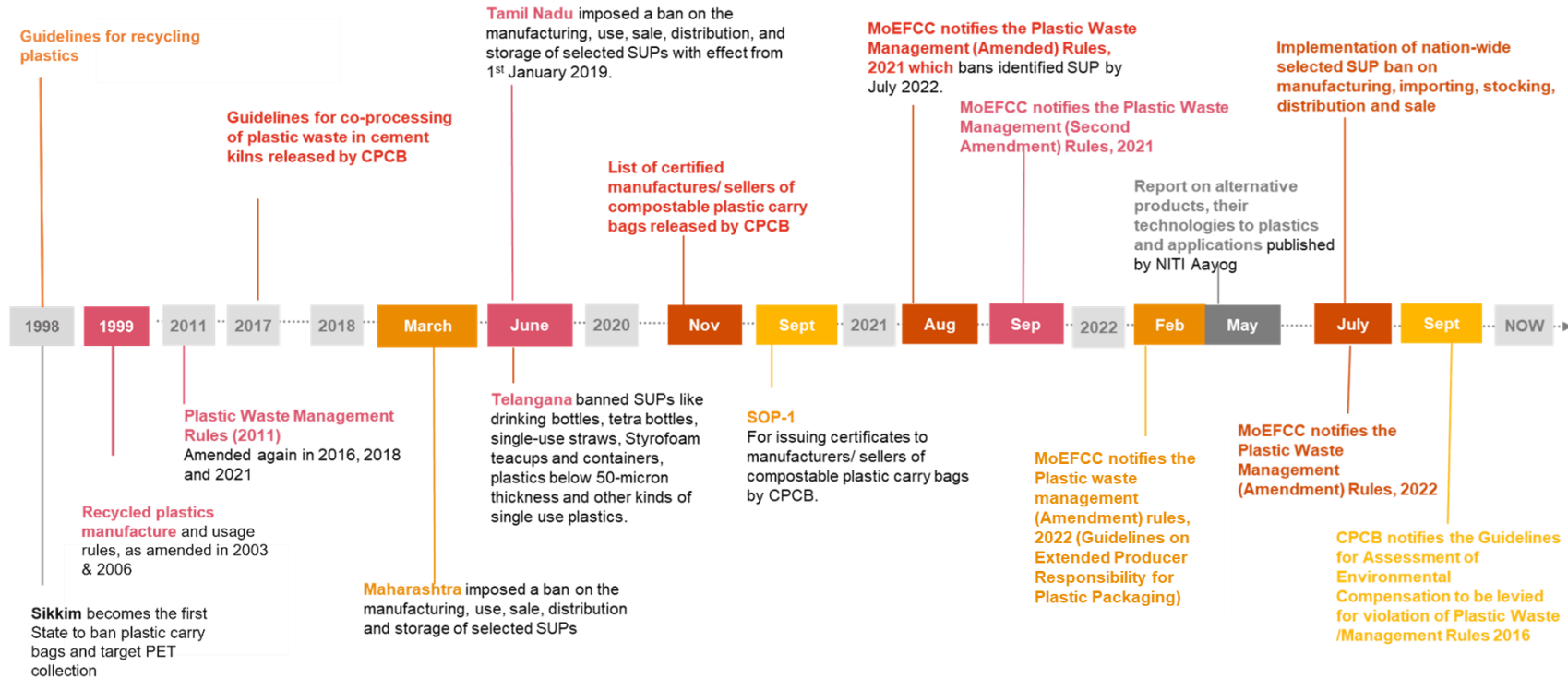


Figure 1-2: Timeline of efforts towards SUP ban in India



In the last decade, **22 States and UTs have imposed partial or complete ban on plastic carry bags**. Each State is unique in its approach towards implementing restrictions. For example, the UT of Puducherry has released an Action Plan on elimination of SUPs, while States of Assam and Tripura have released Action Plans committed to phase out SUPs. States are also distinct in their standards of banning plastics, for example, bans based on the thickness of plastics.

The nature of the single use plastic ban implemented (complete or partial ban with respect to thickness of SUP carry bags banned) across states in India are given in the Figure 1-3 below.<sup>2</sup>

### Single Use Plastic Ban in India

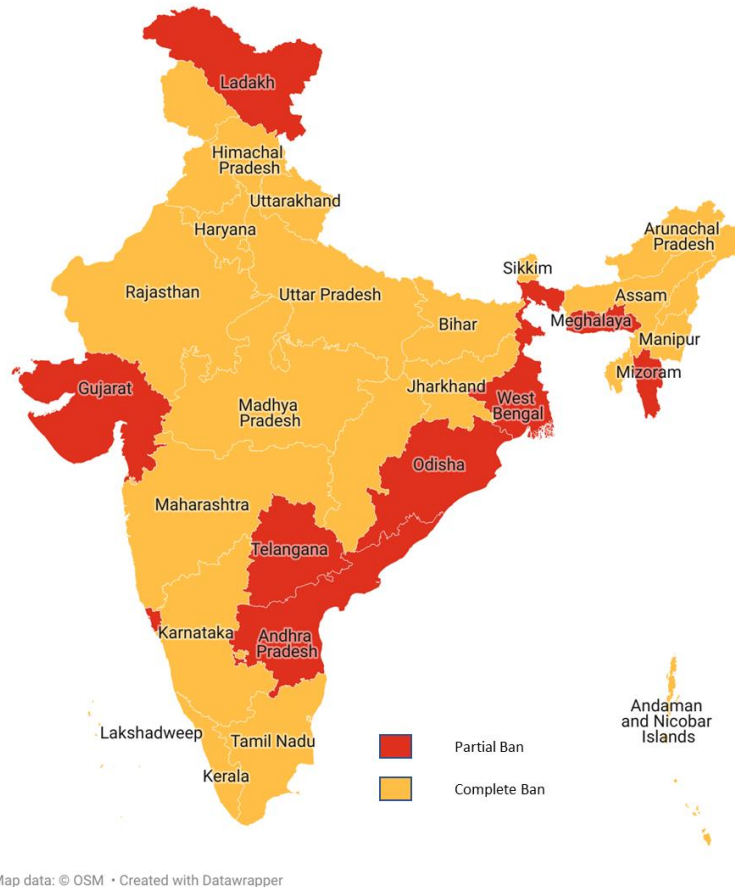


Figure 1-3: Status of Single Use Plastics ban implementation by Indian States

## 1.2 Nation-wide SUP ban since July 2022

The Ministry of Environment & Forests, Climate Change, Govt. of India vide notification dated 12 August 2021 has issued Plastic Waste Management (Amendment) Rules, 2021 in which certain SUP items such as plastic/Polyvinyl chloride (PVC) banners less than 100 microns, cutlery items, ear buds with plastic sticks, plastic sticks for balloons, plastic flags, candy sticks, ice-cream sticks, polystyrene (Thermocol) for decoration, plates, cups, glasses, etc. are prohibited from 1 July 2022. Also, plastic carry bags less than 75 microns and non-woven plastic carry bags less than 60 Gram per Square Metre (GSM) have been prohibited from 30 September 2021 and plastic carry bags less than 120 microns have been prohibited from 31 December 2022.

<sup>2</sup> Partial implementation indicates only restrictions on the thicknesses in case of SUP carry bags by specifying a minimum thickness required, while complete ban indicates ban on SUP carry bags irrespective of thickness. This definition is based on data published in MoEFCC in their press release.

### 1.3 SUP ban in Tamil Nadu

The state of Tamil Nadu announced a ban on one-time use and throwaway plastics irrespective of thickness on 25 June 2018 with effect from 01 Jan 2019 under the Environment (Protection) Act, 1986. In addition to the SUP items banned by Ministry of Environment, Forest and Climate Change (MoEFCC) that followed subsequently, the State of Tamil Nadu had enforced a ban on use and throwaway plastics including all plastic carry bags and non-woven bags irrespective of size and thickness. Some of the items which were not covered under the statewide ban, such as plastic/PVC banners less than 100 microns, cutlery items, ear buds with plastic sticks, plastic sticks for balloons, candy sticks, ice-cream sticks, were included to the list of banned SUP items, following the nationwide ban on these SUPs applicable since 1 July 2022 as notified in the Plastic Waste Management (Amendment) Rules, 2021.

The combined list of banned SUP by Government of Tamil Nadu (GoTN) and MoEFCC (which is now effective in Tamil Nadu) is as given below.

Table 1: List of banned SUPs by GoTN and MoEF&CC

S. No	Banned SUPs by Govt of Tamil Nadu & MoEF&CC <sup>3</sup>
1	Plastic sheet / cling film used for food wrapping
2	Plastic sheet used for spreading on dining table
3	Plastic Thermocol plates
4	Plastic coated paper plates
5	Plastic coated paper cups
6	Plastic teacups
7	Plastic tumbler
8	Thermocol cups
9	Plastic carry bags of all size & thickness
10	Plastic coated carry bags
11	Non-woven Carry Bags of all size & thickness
12	Water pouches / packets
13	Plastic straw
14	Plastic flags
15	Ear buds with plastic sticks
16	Plastic sticks for balloons

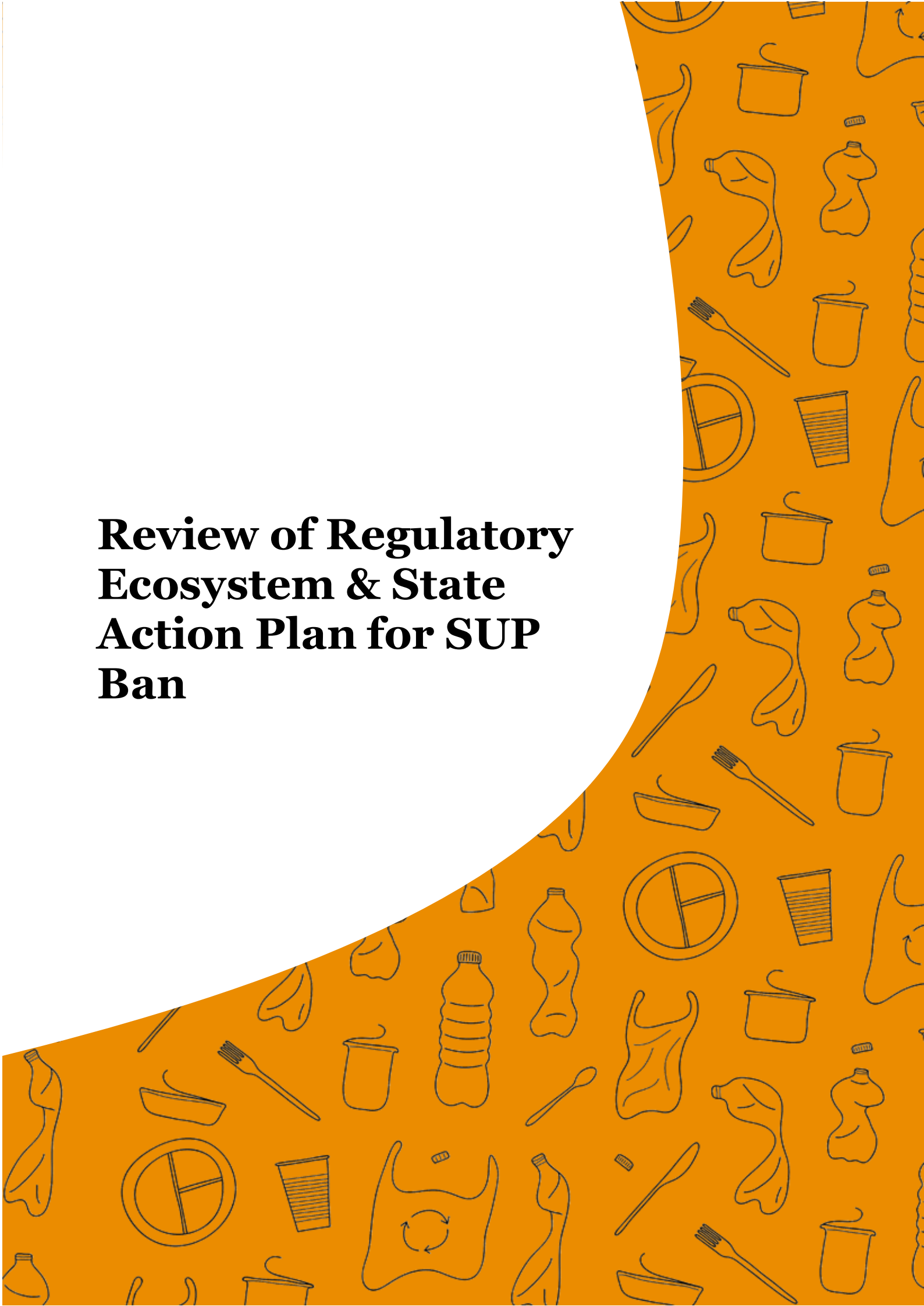
<sup>3</sup> This includes SUP items that GoTN has banned, in addition to the SUP items banned by MoEF&CC



<b>S. No</b>	<b>Banned SUPs by Govt of Tamil Nadu &amp; MoEF&amp;CC<sup>3</sup></b>
17	Candy with plastic sticks
18	Ice-cream with plastic sticks
19	Polystyrene (Thermocol) for decoration
20	Cutlery such as plastic forks
21	Plastic spoons
22	Plastic knives
23	Wrapping or packing films around sweet boxes
24	Wrapping or packing films around invitation cards
25	Wrapping or packing films around cigarette packets
26	Plastic or PVC banners less than 100 micron
27	Plastic stirrers
28	Plastic trays

Following the ban, the GoTN called for the implementation of 'People's campaign against throwaway plastics' in Sep 2021. Subsequently, the State government and TNPCB have been proactive in implementing the SUP ban through social initiatives such the 'Meendum Manjappai Campaign', launched to promote use of the Manjappai (yellow cloth bag) as an alternative to plastic bags. Following the same, the State has been taking considerable efforts in terms of enforcing the ban and taking action against violators, creating awareness about the ban and need for adopting alternatives to plastic and promoting use of alternatives by mapping alternatives and improving accessibility. The subsequent chapters cover each of these aspects and initiatives taken by the State.

# **Review of Regulatory Ecosystem & State Action Plan for SUP Ban**



# 2 Review of Regulatory Ecosystem & State Action Plan for the SUP Ban

The implementation of SUP ban in Tamil Nadu is driven by aggregated actions by various departments. The following figure depicts the various stakeholders involved in planning, implementation of SUP ban and the related flow down of instructions and reporting of action taken.

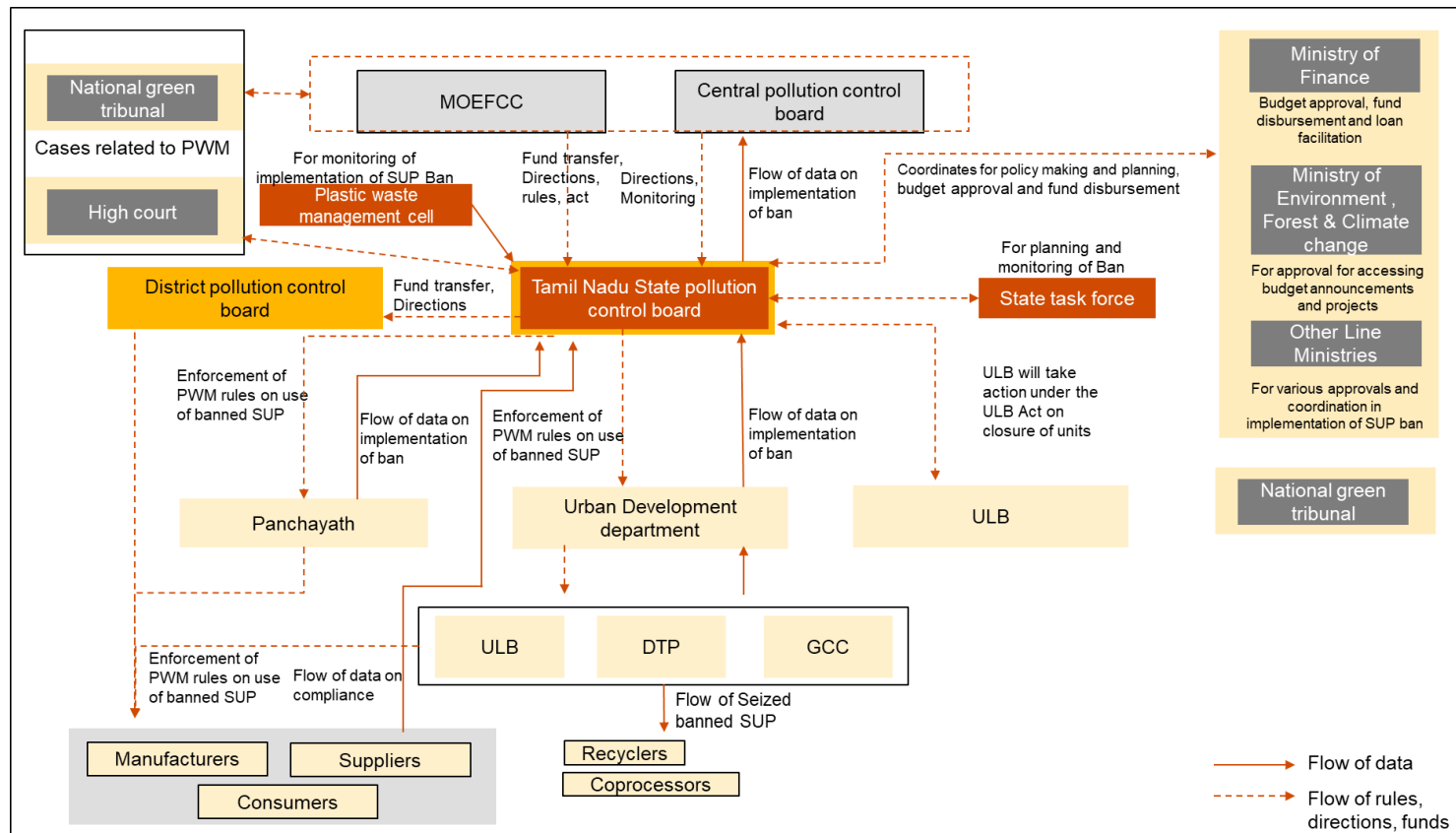


Figure 2-1: The regulatory system followed for implementation of the SUP ban

In the efforts to ban and regulate use of SUP, several key institutions play the pivotal role. These institutions collaborate, cooperate, and develop rules and action plan for implementation and elimination of SUPs.

- The Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India, is the apex Ministry responsible for overseeing the functioning of CPCB and the regulatory actions undertaken by Central Pollution Control Board (CPCB) and State Pollution Control Boards (SPCBs). CPCB provides policies, guidelines, and standards related to pollution control, conducts research and studies on environmental issues, and provides technical assistance and guidance to SPCBs in implementation of rules as per Environment protection Act 1986 and the Plastic Waste Management (PWM) rules 2016. The SPCBs and the local bodies align with these policies and collaborate to implement and enforce the ban on SUPs effectively.
- The Department of Environment Climate Change and Forest (ECCF) oversees the functioning of the Tamil Nadu Pollution Control Board at the State level and issues Government orders pertaining to the effective implementation of the Ban on Single Use Plastics.
- The legislative framework empowers the SPCBs and other relevant authorities such as Urban development department, Urban Local Bodies, Panchayats to establish mechanisms through legislative measures like acts, rules, regulations, directions and notifications. These mechanisms aim to prohibit the production, sale and disposal of banned single use plastic items at both the State level and local level.

Tamil Nadu Pollution Control Board (TNPCB) is the nodal regulatory authority responsible for implementing and enforcing environmental policies and pollution control measures in Tamil Nadu. The TNPCB along with Urban Local Bodies (Directorate of Town Panchayath, and Commissionerate of Municipal administration) are assigned the responsibility of implementation of the PWM rules, 2016. Environment protection acts, rules, and Government orders are the legal basis for functioning of various institutions, though there do not exist a comprehensive integrated accountability framework.

The SPCBs or Pollution Control Committee is the authority responsible for enforcement of the provisions of these rules relating to registration, manufacture of plastic products and multilayered packaging, processing and disposal of plastic wastes. The Urban Development Department of the State or a Union Territory is the authority for enforcement of the provisions of these rules in urban context relating to municipal waste management, use of plastic carry bags, plastic sheets or like, covers made of plastic sheets and multilayered packaging. The enforcement of similar provisions of the rules in rural areas shall be dealt by the respective Gram Panchayats. The delineation of responsibility with regard to implementation of Single Use Plastic Ban beyond the above three key stakeholders is a complex integration of various departments and their coordination. Hence, the key to successful implementation will also depend on provision of appropriate capacity building of staff at all levels of respective departments and seamless coordination for the implementation of the SUP Ban and PWM rules 2016. In order to have a collaborative effort across all stakeholder line departments, the State Steering committee was formed as per G.O 92 dated 5<sup>th</sup> July 2018 which shall meet once every two months with a purpose of monitoring the overall implementation of ban on one time use and throwaway plastics, irrespective of thickness. The ten member steering Committee was constituted under the chairmanship of Chief Secretary, GoTN with the purpose of monitoring the overall implementation of ban on SUPs.

Later in February 2022, the Special Task force was formed for implementation of the plastic ban and to prepare a Comprehensive Action Plan (CAP) for implementation of the Plastic Waste Management Rules, 2016.

## 2.1 State Task Force (STF)

The Ministry of Environment, Forest and Climate Change had directed all States/UTs to constitute a Special Task Force under the chairmanship of Chief Secretary/Administrator to eliminate the SUPs and implementation of Plastic Waste Management Rules, 2016.

To strengthen the implementation of the Plastic Waste Management Rules and for fostering effective coordination and collaboration among all the States and UTs and concerned Central Ministries, a national level taskforce has been constituted. The states are also directed to constitute Task Force at State level, District level and at million plus cities. The GoTN constituted the State Task Force on 07.02.2022 for effective implementation of the ban on SUPs. It was decided that the State Task Force shall meet once in two months to review the progress.

The State Task Force in its meetings, directed the Line Departments for development of action points and the Line Departments are expected to submit their action taken reports accordingly. The list of the Line Departments as a part of the TN State Task Force is mentioned below.

*Table 2: List of line departments that should submit their action taken reports as per the STF meetings*

<b>S.No</b>	<b>Line Department name</b>
1	School Education Department
2	Higher Education Department
3	Municipal Administration and Water Supply Department
4	Rural Development and Panchayati Raj Department
5	Industries & MSME Department
6	Health & Family Welfare Department
7	Youth Welfare and Sports Development Department
8	Labor Welfare & Skill Development Department
9	Home, Prohibition & Excise Department
10	Information and Public relations Department
11	Finance department
12	Department of Environment

A summary of the key roles and designated responsible stakeholder at the State level is described below and depicted in the following Table 3 .

*Table 3: Key roles and responsibilities at the State level towards SUP ban implementation*

<p><b>Policy development</b></p>	<p>Government bodies at the state level, the Tamil Nadu Pollution Control Board, Department of Environment, Climate change and Forests (ECCF) plays a key role in formulating policies and regulations for the single-use plastic ban. TNPCB conducts environmental impact assessments and studies along with reputed agencies and institutions and enforcement raids.</p>
<p><b>Strategy Formulation</b></p>	<p>The State government, TNPCB, State Task Force, Department of Environment Climate Change &amp; Forest (ECCF) collaborate with relevant departments to develop a comprehensive strategy for the single-use plastic ban. This involves setting targets, defining timelines, and identifying key focus areas for implementation.</p>
<p><b>Financing and Funding</b></p>	<p>The assembly announcements on activities around single use plastic will be funded by TNPCB from its operational revenue pool funds which will be used for awareness campaigns, infrastructure development, waste management systems, and other related initiatives.</p> <p>The Central and State funds on Swatch Bharat Mission - Urban and Grameen will be routed through ULBs for conducting Information, Education and Communication (IEC) awareness and as capital for infrastructure.</p>
<p><b>Project Planning and Implementation</b></p>	<p>TNPCB along with ULBs and agencies, oversees project planning and implementation. This involves coordinating activities such as awareness campaigns, training programs, infrastructure development for waste management, and monitoring mechanisms.</p> <p>Local municipalities and urban development bodies play a vital role in implementing the single-use plastic ban within their jurisdiction. They ensure compliance through local regulations, provide necessary infrastructure for waste collection and segregation, and facilitate public outreach and education programs.</p>
<p><b>Asset Creation and Infrastructure Development</b></p>	<p>For the SUP ban to be effective it needs to be complemented with physical infrastructure which includes setting up recycling units, waste collection centers, and implementing waste-to-energy projects and digital infrastructure for monitoring and analysis of the progress. The government as well as private sector will contribute by investing in infrastructure development.</p> <p>The ULBs responsible under PWM rules for development and setting up of infrastructure for segregation, collection, storage, transportation, processing and disposal of the plastic waste.</p>

The Role Matrix provided in Figure 2-2, gives an overview of the key stakeholders involved in activities related to the Single Use Plastic Ban and their respective areas of involvement. This matrix serves as a visual representation and reference point for understanding the intricate web of individuals, organizations, and entities that play a vital role in the planning, implementation, and enforcement of policies and initiatives aimed at reducing or eliminating the use of single-use plastics.

	Plastic waste management	IEC	Enforcement	Monitoring	Environment compensation
<b>Policy Regulation</b>	MoEFCC				CPCB ULB
<b>Strategic Planning</b>	CPCB TNPCB State Task force	ULB State Task force	TNPCB ULB	CPCB TNPCB State Task force	
<b>Financing</b>	TNPCB GoTN MoEFCC	TNPCB ULB			
<b>Project planning</b>	SPCB Dept of ECCF				
<b>Asset Creation</b>	ULBs TNPCB Private sector			CPCB TNPCB	
<b>Implementation</b>	TNPCB ULB	ULB TNPCB	ULB TNPCB	ULB TNPCB	ULB TNPCB

Figure 2-2: Role of Key stakeholders



## 2.2 Regulatory environment

Many existing stakeholders in implementing the SUP ban work in parallel as per PWM rules 2016 with a goal to eliminate SUP usage by developing by-laws, rules, planning frameworks in line with the central government regulations. A summary of these laws and acts is provided in Figure 2-3 below.

	Act	Rules	Directions & G.O	Environment Compensation	Strategy & planning	Guidelines
<b>MOEFCC</b>	Environment Protection Act 1986	PWM rules- 2016, Amendments 2018, 2021, 2022				
<b>CPCB</b>			Directions- Ecommerce, Manufacturers, Brand owners on compliance SPCB/UDD on enforcement raids	EC for violation of PWM rules ( 2022)	District Environment plan National action plan	SOP for Special Inspection Drives
<b>Dept ECCF</b>		State Environment policy 2017	GO 84- Notification on Ban of SUP GO 265- Implementation of Ban in Government dept. GO 116- four strategies to fight plastic pollution GO 37- deletion of exclusion for the item no. 1(b) (b) of go.84		GO 92- Formation of Steering committee GO 82- Appointment of regional coordinators GO 319- Appointment of TNPCB officials for assisting regional coordinators GO 25- Constitution of Special task force	
<b>TNPCB</b>			Directions to District offices & ULBs on Special enforcement raid Memos & Circulars to District offices		Comprehensive state action plan Meendum Manjappai strategy	Action plan for IEC 2022
<b>ULB</b>	ULB by-laws			ULB bylaws- penalties		
<b>National Green Tribunal</b>			Directions to form Environment compensation			
<b>FSSAI</b>	Food safety standards act amendment regarding use of recycled plastic Guidelines for use of recycled PET for food contact applications		Directions to regional FSSAI on implementation of SUP Ban			

Figure 2-3: Regulations issued by the key stakeholders

The following table summarises all the central acts and rules pertaining to SUP ban as issued by MoEFCC and CPCB.

Table 4: Summary of various acts and rules pertaining to SUP Ban

Sr. No	Rules/ Acts	Status	Specifics pertaining SUP ban
1.	Environment Protection Act 1986, amended 1991	Active	Even though there are no specific rules laid down on SUPs in the EPA act, the rule indirectly provides provision for the following.

Sr. No	Rules/ Acts	Status	Specifics pertaining SUP ban
	(May 1986)		<ul style="list-style-type: none"> <li>• The act empowers the central government to take measures to tackle pollution and environmental hazards.</li> <li>• The central government has the authority to establish standards for the quality of the environment, including air, water, and land</li> <li>• Issue directions to industries, individuals, or any other person to take necessary measures</li> <li>• Powers of entry and inspection by any person empowered by central government</li> <li>• Central government can delegate power to State or other authority</li> <li>• Central government has power to make rules which has to be laid before parliament</li> </ul>
2.	Recycled Plastics Manufacture and Usage Rules 1999, (September 1999)	Amended	<ul style="list-style-type: none"> <li>• Restricted use of carry bags made of recycled plastics for storing, carrying, dispensing, or packaging of foodstuffs and if used for other purposes, the bags should adhere to standards as mentioned in PWM rules. Carry bags to be made of virgin plastic with minimum 20 micron thickness.</li> </ul>
3.	National Environment policy 2006 (May 2006)	Active	Has brief on segregation, collection, recycling and disposal of solid waste generated but has no specific mention of plastic waste
4.	Plastic Waste (Management and Handling) Rules 2011 (February 2011)	Superseded	<ul style="list-style-type: none"> <li>• Carry bags to be made of virgin plastic/ recycled/ compostable plastic with minimum 40 micron thickness</li> <li>• Restricted use of carry bags made of recycled plastics for storing, carrying, dispensing, or packaging of foodstuffs</li> <li>• To not use Sachets using plastic material for gutkha, tobacco, pan masala</li> <li>• Formation of State level advisory board</li> <li>• Rules introduced the concept of extended producer responsibility</li> <li>• Exemption for manufacture of carry bags for export purposes</li> <li>• Municipal authority to include the rules in municipality by laws</li> </ul>
5.	PWM rules 2016 (March 2016)	Amended	<ul style="list-style-type: none"> <li>• Carry bags and plastic packaging shall either be in natural shade which is without any added pigments as per relevant Indian standards</li> <li>• Restricted use of carry bags made of recycled plastics for storing, carrying, dispensing, or packaging of foodstuffs, Pharmaceuticals and drinking water</li> <li>• Carry bag made of virgin or recycled plastic, shall not be less than fifty microns in thickness</li> <li>• To not use Sachets using plastic material for gutkha, tobacco, pan masala</li> </ul>

Sr. No	Rules/ Acts	Status	Specifics pertaining SUP ban
			<ul style="list-style-type: none"> <li>• Plastic sheets which is not integral part of Multi-Layered Plastic (MLP) and packaging shall not be less than 50 micron except where the thickness of such plastic sheets impair the functionality of the product.</li> <li>• Thickness will not be applicable for compostable carry bags</li> <li>• Local bodies to frame by-laws for Plastic Waste Management and implementation of the SUP ban</li> <li>• Retailers and street vendors shall be liable to pay such fines as specified under the by-laws of the local bodies for usage of carry bags, MLPs and plastic sheets not manufactured as per rules</li> <li>• Shop keepers willing to sell plastic carry bags under by-laws shall make provisions for such registration on payment of plastic waste management fee of minimum INR 48,000 per month</li> <li>• Only the registered shopkeepers or street vendors shall be eligible to provide plastic carry bags for dispensing the commodities</li> <li>• To constitute State level Monitoring Committee (SLMC)</li> <li>• All institutional generators of plastic waste, shall segregate and store the waste generated by them in accordance with the Municipal Solid Waste rules 2000 and handover segregated waste to authorised waste processing/ disposal centers</li> <li>• Rules were not applicable on export-oriented units, or units in Central Government notified SEZs involved in the manufacture of products, intended for export.</li> </ul>
6.	Tamil Nadu State Environment policy 2017 (July 2017)	Active	<p>Though the policy has not specifically mentioned actions to curb SUP usage, the following actions may indirectly be associated with the same</p> <ul style="list-style-type: none"> <li>• Industrial Master Plans for all new identified industrial corridors and nodes</li> <li>• To Prepare and enforce Environmental Management Plans for existing Industrial Areas to identify and address gaps in environmental infrastructure and monitoring</li> <li>• Periodic review of pollution standards of industries</li> <li>• Effective mechanisms for safe management of solid waste and special task force to be constituted at district level</li> </ul>
7.	PWM rules, amendment 2018 (March, 2018)	Active	<ul style="list-style-type: none"> <li>• Rule applies to every waste generator, local body, gram panchayats, manufacturers and importers</li> <li>• Exemption not provided to units engaged in using plastic material for storing and selling Gutkha, tobacco and pan masala</li> <li>• Carry bags shall not be less than 50 microns in thickness</li> </ul>

Sr. No	Rules/ Acts	Status	Specifics pertaining SUP ban
8.	GO. 84, Notification on Ban on SUP (June 2018)	Active	Details on the Ban on one time use and throwaway plastics in Tamil Nadu along with the list of all banned SUPs along with the exemptions.
9.	GO 37, Amendment Notification – Deletion of exemption clause 1(b)(b) from Go 84 (June 2020)	Active	<p>From the list of banned use and throwaway plastics as per GO 84 effective from January 2019 the Government had exempted plastic used for certain purposes.</p> <p>The GO.37 Amendment removed exemption from item 1(b)(b) which exempts items (viz., The plastic bags which constitute or form an integral part of packaging in which goods are sealed prior to use at manufacturing/ processing units)</p> <p>The alternatives to be used shall be examined and tested by Central Institute of Plastic Engineering and Technology ( CIPET) and necessary approval/consent shall be obtained from TNPCB</p>
10.	PWM rules, amendment 2021 (August 2021)	Active	<ul style="list-style-type: none"> <li>• Rule applies to every waste generator, local body, gram panchayats, manufacturers and importers, BOs and plastic waste processor (recyclers, co-processor etc.,)</li> <li>• Defined SUP Commodity as plastic item intended to be used once for the same purpose before being disposed or recycled</li> <li>• Carry bag made of virgin or recycled plastic shall not be less than seventy five microns in thickness from 30th September 2021 and one hundred and twenty microns in thickness from 31st December 2022</li> <li>• Non-woven plastic carry bag shall not be less than 60 gsm from 30th September 2022</li> <li>• Ban on specified SUP Commodities from 1st July 2022 <ul style="list-style-type: none"> <li>• ear buds with plastic sticks, plastic sticks for balloons, plastic flags, candy sticks, ice-cream sticks, polystyrene [Thermocol] for decoration.</li> <li>• plates, cups, glasses, cutlery such as forks, spoons, knives, straw, trays, wrapping or packing films around sweet boxes, invitation cards, and cigarette packets, plastic or PVC banners less than 100 micron, stirrers.</li> </ul> </li> </ul> <p>Any notification prohibiting manufacturing, import and sale of banned SUPs will come into force after ten years, from the date of its publication.</p>
11.	PWM rules amendment, 2021 (17 <sup>th</sup> September 2021)	Active	Carry bags made of recycled plastic or products made of recycled plastic can be used for storing, carrying, dispensing, or packaging ready to eat or drink food stuff subject to the notification of appropriate standards and regulation under the Food Safety and Standards Act, 2006 (34 of 2006) by the Food Safety and Standards Authority of India
12.	Guidelines on the Extended Producer	Active	<ul style="list-style-type: none"> <li>• Provides guidelines on Extended producer responsibility as a part of PWM rules 2016 for</li> </ul>

Sr. No	Rules/ Acts	Status	Specifics pertaining SUP ban
	Responsibility (EPR) for plastic packaging waste (Plastic Waste Management (Amendment) Rules, 2022 ) (February, 2022)		<p>producers, BOs, Importers and Plastic waste processors PWPs along with the targets for recycling, use of recycled plastic content, reuse and end of life disposal</p> <ul style="list-style-type: none"> <li>Provides roles of stakeholders under Extended Producer Responsibility rules</li> </ul>
13.	PWM rules, amendment 2022 (July 2022)	Active	<ul style="list-style-type: none"> <li>Rules on biodegradable and compostable plastics were amended in PWM rules</li> </ul>
14.	Guidelines for assessment of environment compensation to be levied for Violation of PWM rules 2016 ( Sept 2022)	Active	<ul style="list-style-type: none"> <li>Provides the guidelines for environment compensation to be levied for non-compliance of PWM rules which include rule 4, 6, 7, 8, 9 and 10, 11, 13, 14, of PWM rules 2016</li> <li>Environment compensation under Extended Producer Responsibility (EPR) guidelines for rule 9, 10,11,12 and 13 under PWM Amendment rules 2022.</li> </ul>
15.	Food safety standards act, 2022 amendment (June 2020)	Active	<ul style="list-style-type: none"> <li>Products made of recycled plastics including carry bags may be used for packaging, storing and dispensing of food products as per guidelines framed by Food Authority and comply with National standards/regulations.</li> <li>Guidelines for recycling of post-consumer Polyethylene terephthalate (PET) for food contact applications &amp; acceptance criteria</li> </ul>

## 2.3 State orders and Directives

### 2.3.1 Orders by GoTN

The Government of Tamil Nadu has been proactive in taking initiatives towards implementing the ban on SUPs and has issued various government orders from time to time with respect to the same

- Tamil Nadu Government in G.O. (Ms). No.84 dated 25 June 2018, notified ban on manufacture, store, supply, transport, sale or distribute of use and throwaway plastics irrespective of thickness including plastic carry bags of any size and thickness and it came into effect from 01 January 2019
- 15 June 2018 G.O. 82 - Appointment of Regional Coordinators for Plastic Ban
- 5 July 2018 G.O. 92 - Constitution of Steering Committee headed by the Chief Secretary for monitoring the implementation of ban.
- 5 July 2018 G.O. 30 - Financial Sanction of INR 54 lakhs for conducting Regional Workshops
- 20 Sep 2018 G.O. 265 - To implement Ban on one time use and throwaway plastics in Government Departments
- 10 Nov. 2018 G.O (D) 319 - Nomination of TNPCB Officials for assisting Regional Coordinators of Plastic Ban.

- 27 Nov 2021 G.O. 116 - Four strategies to be adopted to fight plastic pollution and eliminate single use throwaway plastics
- 07 Feb 2022 G.O 25 - The Government of Tamil Nadu constituted a Special Task Force (STF) under the chairmanship of Chief Secretary for implementation of the plastic ban and to prepare a Comprehensive Action Plan (CAP) for implementation of the Plastic Waste Management Rules, 2016

### 2.3.2 ULB by-laws

As per PWM rules 2016, the local bodies have the responsibility to frame by-laws incorporating the provisions of the rules. Accordingly, by-laws have been developed by Urban Local Bodies (ULBs) and are in practice across the State. The by-law details out the responsibilities within the ULB, the penalty structure, user fee and other key details for the activities that needs to be carried out by the ULBs.

## 2.4 Comprehensive Action Plan

Along with the constitution of State Task Force, the States and UTs were also directed to prepare a Comprehensive Action Plan based on the proforma shared by the Ministry consisting of 10 thematic areas and 48 action points to eliminate SUPs. The States/UTs were asked to add thematic areas and activities to the indicative action plan based on the issues faced specifically by the State.

A comparative assessment of the Comprehensive Action Plan (CAP) prepared by Tamil Nadu, Tripura, Rajasthan, Puducherry, and Madhya Pradesh was carried out. The detailed comparison highlights the action points adopted and left out by the States is shown in Table 5. It also highlights the action taken by Tamil Nadu against each action point. It was also found that some of the action points were not listed down in the Comprehensive Action Plan prepared by Tamil Nadu but were being carried out as a part of implementation of ban on Single Use Plastics.

Table 5: Comparative assessment of the Comprehensive Action Plans

S.no	Action	Tamil Nadu	Rajasthan	Tripura	Puduchery	MP	Status of Implementation in Tamil Nadu	Remarks (for Tamil Nadu)
<b>Policy and regulatory framework</b>								
1.	Preparation of a comprehensive action plan for elimination of single use plastics	✓	✓	✓	✓	✓		
2.	Drafting of policy for effective enforcement of PWMR through byelaws of local bodies and SPCB (like spot fines)	✗	✓	✓	✓	✓		
3.	Drafting of policy for incentivizing units adopting alternatives to single use plastic	✓	✓	✓	✓	✓		
4.	Inclusion of mitigation measures and activities for phasing out SUP in ongoing projects activities.	✓	✓	✓	✓	✓		
5.	Drafting of guidelines for collection and transportation of plastic material to other states for recycling	✗	✓	✗	✗	✗		
6.	Constitution of State Level Advisory Committee (SLAC) under the chairmanship of the Secretary, UDD and District Level Committee under the chairmanship of the DMs for monitoring, and effective implementation of Plastic Waste Management Rules, 2016.	✗	✗	✓	✗	✗	✓	<p>The ten member steering Committee was constituted under the chairmanship of Chief Secretary, Government of Tamil Nadu with the purpose of monitoring the overall implementation of ban on SUPs.</p> <p>Later State Level Special Task Force was constituted under the chairmanship of Chief Secretary, Government of Tamil Nadu on 07.02.2022 as per GO 25</p>



S.no	Action	Tamil Nadu	Rajasthan	Tripura	Puduchery	MP	Status of Implementation in Tamil Nadu	Remarks (for Tamil Nadu)
<b>Policy and regulatory framework</b>								
7.	Meetings to be organized with representatives of different bazar committees, representatives of different NGOs/ voluntary organizations/ SHGs in connection with implementation of the plastic carry bag ban order, penalty provisions for violations, and finding out alternatives of plastic carry bags	✗	✓	✓	✓	✓	✓	Stakeholders Meetings held with producers, traders, merchants engaged in manufacture, storage, supply, sale and distribution of SUPs has been mentioned. Meetings were conducted with representatives of shopping malls, Hotels and Marriage Halls, TASMAC, Eco alternative manufacturers, composable plastic manufacturers
8.	Preparation of Policy for development of de-centralized recycling infrastructure/ End of Life Disposal infrastructure, with special focus on low-value plastics	✗	✗	✓	✗	✓		Refer to point 66.
9.	Adoption of sustainable public procurement policy for products and plastic packaging material made of recycled plastics, and alternatives to identified single use plastics, as per applicable standards	✗	✗	✗	✗	✓		
10.	Constitution of a Steering Committee to monitor the overall implementation of the ban	✓	✗	✗	✗	✗		Steering committee was replaced by a task force Special Task Force under the chairmanship of Chief Secretary/Administrator to eliminate the SUPs and implementation of Plastic Waste Management Rules, 2016.
11.	Regular functioning of the Special Task force and review of work done	✓	✓	✓	✓	✓		

S.no	Action	Tamil Nadu	Rajasthan	Tripura	Puduchery	MP	Status of Implementation in Tamil Nadu	Remarks (for Tamil Nadu)
<b>Institutional mechanism</b>								
12.	Listing of legal, industrial and other units engaged in sale and manufacture of SUP on website	✗	✓	✗	✓	✓	✓	
13.	Constitution of dedicated Task Force for overseeing implementation both at State and district level	✓	✓	✓	✓	✓		
14.	Identification of nodal department for coordinating the implementation of plastic waste management	✓	✓	✓	✓	✓		
15.	Constitution of a plastic waste management cell at state and district level	✗	✓	✗	✗	✓	✓	PWM Cell constituted only at State level
16.	Constitution of subgroup of State Task Force for assistance of the State Level Task Force and PWM Cell	✗	✓	✓	✓	✓	✓	District level taskforce has been formed at district level
17.	Taking up of a survey and listing of illegal units in markets, residential area etc.	✗	✓	✗	✗	✗		
18.	Having dedicated Toll-free number for registering complaints regarding storage, manufacture and sale of SUP items.	✗	✓	✗	✗	✗	✓	Tollfree number 1800-425-6750 was setup from July 2022 and have received 106 number of complaints related to use of Single use plastic
19.	Conducting capacity building for educational institutions, government offices, ULBs, RWAs for promoting the use of alternate materials	✗	✓	✓	✓	✓	✓	regular IEC activities are conducted and animated videos targeting school students are developed. - Workshops for alternative eco products conducted at all districts - Regional conferences for plastic pollution free Tamil Nadu among various stakeholders at Chennai, Coimbatore, Trichy, Madurai, Tirunelveli, and Salem

S.no	Action	Tamil Nadu	Rajasthan	Tripura	Puduchery	MP	Status of Implementation in Tamil Nadu	Remarks (for Tamil Nadu)
<b>Institutional mechanism</b>								
20.	Development of guidelines and targeted awareness raising activities at State, District and ULB/GP level for citizens, institutional waste generators, RWAs/Market associations (especially with the green protocol)	✗	✓	✓	✓	✓	✓	Distict level IEC and awareness plan was developed
21.	Offering Tax holiday for alternative to SUP product	✗	✗	✗	✓	✗		
22.	The commercial centres which are not using SUP to be honoured by providing “Green Award”.	✓	✗	✗	✓	✗		Initiatives taken by commercial establishments to replace plastic with eco-friendly alternatives is one of the criteria for Manjappai Awards
23.	Providing training for processing of leaves for food packaging materials, making cloth bags and paper bags.	✗	✗	✗	✓	✗	✓	Training to SHGs provided by RDPR and Women development coroporation
24.	Stalls of low-cost alternative materials to be placed in many places of the State. Financial assistance to be organized through Banks / NABARD etc.	✗	✗	✗	✓	✗		Could be taken up in Koyambedu and is planned as pilot scheme in one constituency
25.	Advertisements of brand owner products on alternatives to be printed, in order to reduce cost of the alternate products. Brand owners to bear part of the cost of the bags/cups towards advertising their products.	✗	✗	✗	✓	✗		
26.	All the brand owners of personal care products having their production unit in the region to be directed to establish their product waste collection centre under EPR in collaboration with local bodies.	✗	✗	✗	✓	✗		
27.	Consumers to be given incentive when the consumers return the used plastic/ MLP wrapper to the vendors. The Brand Owners should print the buyback cost on the wrapper while it is manufactured.	✗	✗	✗	✓	✗		

S.no	Action	Tamil Nadu	Rajasthan	Tripura	Puduchery	MP	Status of Implementation in Tamil Nadu	Remarks (for Tamil Nadu)
<b>Institutional mechanism</b>								
28.	Plastic Reprocessing							plastic waste collected in Solid waste is channelised for recycling or coprocessing in cement kilns
	1. Plastic waste to be used for road making and pavers block manufacturing.							
	2. All the industrial estates and Commune Panchayats/Municipalities to have minimum one waste plastic reprocessing unit.	✗	✗	✗	✓	✗		
	3. All the industrial plastic waste to be channelized to reprocessing unit thereby avoiding mixing in solid waste.					✓		
29.	Setting up of RDF (Refuse Derived Fuel) facility of suitable capacity in solid waste disposal sites	✗	✗	✗	✓	✗		
30.	Under Polluter Pays Principle and Corporate Social Responsibility (CSR), plastic products manufacturing units to provide plastic waste collection bin to the house holds for collecting exclusively plastic waste. It should be collected for recycling.	✗	✗	✗	✓	✗		
31.	Rag pickers to be organized in Self Help Groups (SHGs) to promote recycling.	✗	✗	✗	✓	✗	✓	Initiative undertaken under 2023 assembly announcements to involve rag pickers for recycling and improving circular economy. Meetings are conducted with stakeholders on mainstreaming ragpickers on 28.06.2023 and 08.08.2023

S.no	Action	Tamil Nadu	Rajasthan	Tripura	Puduchery	MP	Status of Implementation in Tamil Nadu	Remarks (for Tamil Nadu)
<b>Institutional mechanism</b>								
32.	Hoardings to be installed at railway stations, airports, markets, tourist places etc. highlighting issues of plastic wastes and cleanliness	✗	✓	✓	✓	✓	✓	Display boards of banned items at 45 toll plazas across NHAI. Display boards at entrance of all District TNPCB offices, at Bus stands  Letters sent to Airport authority on displaying messages on SUP ban
33.	An audit team to be constituted by the State Pollution Control Board to conduct regular visits in different Government offices to assess and monitor the present level of implementation on the direction issued regarding phasing out of Single Use Plastics	✗	✗	✓	✗	✗		Formats are developed using google forms and are circulated to all line departments to monitor the activities undertaken by the line departments
34.	Conducting of audit of current amounts of banned plastic items produced per year and calculation of required quantity of alternatives to be produced	✗	✓	✓	✓	✓		
35.	Constitution of City Level Task Force for million plus cities: under Commissioner of Municipal Corporation or Deputy Commissioner or District Magistrate or any other officer of suitable rank as deemed appropriate by the State/UT Government	✓	✗	✗	✗	✓		Details regarding regular functioning and frequency of Task force are not formally obtained
36.	Constitution of District Level Task Force (excluding million plus cities) under District Magistrate (for both rural areas and urban areas)	✓	✗	✗	✗	✓		
37.	Setting up of Project Management Unit (PMU) and technical expert assistance for the state level task force activities	✓	✓	✓	✓	✓		PWM Cell supports activities under State level task force and plastic waste management
38.	Setting up of PMU at SPCB to support activities on Plastic waste management	✓	✓	✓	✓	✓		

S.no	Action	Tamil Nadu	Rajasthan	Tripura	Puduchery	MP	Status of Implementation in Tamil Nadu	Remarks (for Tamil Nadu)
<b>Management of littered single use plastic items</b>								
39.	Identification of littering hot spots with respect to SUP items and development of strategy for their collection and further management	✗	✓	✓	✗	✓	✓	TNPCB along with IIT-Madras conducted a study on identification of ecologically sensitive areas or ban on use and throwaway plastics and identifying alternatives for the same
40.	Identification of ingress points of littered single use plastic items in surface water bodies and drains and strategy for prevention	✗	✓	✗	✗	✓		
41.	Preparation of phased plan for cleaning surface water bodies and drains of floating single use plastic items and their further management.	✗	✓	✗	✗	✓		
42.	Documentation of total quantity of plastic waste present in legacy waste sites and implementation of plan to manage legacy plastic waste - location-wise.	✗	✗	✗	✗	✓		Will be the responsibility of GCC and ULBs
43.	Activities to be specifically included under Swachh Bharat Mission 2.0 for SUP elimination and management of legacy waste sites, as per guidelines	✗	✓	✗	✗	✓		
<b>Plastic waste management including single use plastics items</b>								
44.	Capacity building for repurposing and promoting reuse of plastic packaging, adopting alternate materials	✗	✓	✓	✓	✓	✓	National expo on Alternatives to SUPs and Start up conference held in September 2022  Workshops for eco alternative products conducted at all districts.  Training on manufacturing of alternate to plastics to self help group

S.no	Action	Tamil Nadu	Rajasthan	Tripura	Puduchery	MP	Status of Implementation in Tamil Nadu	Remarks (for Tamil Nadu)
<b>Plastic waste management including single use plastics items</b>								
45.	Capacity building for a range of stakeholders: NGOs, Universities, Research organizations, State level autonomous bodies, Government departments, Bulk Consumers, Industry associations, Resident associations (RWAs), School teachers, RoPCBs, ULBs and GPs	✓	✓	✓	✓	✓		<ul style="list-style-type: none"> <li>- Capacity building of producers, bulk consumers, ULBs on plastic management (procurement to disposal), for officials of SPCB, RoPCB, SBM, MAWS, DTP, CC has been mentioned in action plan</li> <li>- Regional conferences for plastic pollution free Tamil Nadu among various stakeholders at Chennai, Coimbatore, Trichy, Madurai, Tirunelveli, and Salem</li> <li>- TNPCB conducted meeting and workshops with District/NGC/Eco club coordinators and chief educational officers</li> <li>- Awareness programs on ill effects of plastic pollution have been carried out in all districts involving public, school students, NGOs, Residential Welfare associations and industries.</li> <li>- workshops for Eco alternative products are conducted at all districts</li> </ul>
46.	Assessment for plastic waste generation in State, district-wise	✗	✓	✓	✓	✓		<ul style="list-style-type: none"> <li>- Baseline assessment study to map the hotspots of plastic leakages in Chennai city.</li> <li>- ULB wise plastic waste generation and usage data are compiled for the purpose of PWM annual report</li> <li>- TNPCB partnered with IIT-Madras to conduct a study for identification of Ecologically sensitive areas for Ban on "Use and Throw Plastics" and identifying alternatives for the same</li> </ul>



S.no	Action	Tamil Nadu	Rajasthan	Tripura	Puduchery	MP	Status of Implementation in Tamil Nadu	Remarks (for Tamil Nadu)
<b>Plastic waste management including single use plastics items</b>								
47.	Assessment of infrastructure required for plastic waste management - collection, segregation, recycling, to be carried out district-wise	✘	✘	✘	✘	✔		
48.	District-wise details of infrastructure at municipal and gram panchayat level for collection, segregation and channelization of plastic waste to be provided to recyclers	✘	✘	✘	✘	✔		Details of Infrastructure at municipal and gram panchayath for collection, segregation are maintained under Swachh Bharath Mission database.  TNPCB has listed the data base of Plastic waste recyclers on the Meendum Manjappai Website
49.	Gap analysis and strategy to be developed for development of infrastructure for PWM - District-wise including, ULBs	✘	✘	✘	✘	✔		
50.	Leveraging of funds under Swachh Bharat Mission 2.0, as per guidelines	✘	✘	✘	✘	✔		
51.	Development of strategy for collection and segregation of plastic waste at the municipal and GP level	✘	✘	✘	✘	✔		
52.	Development of scheme for registration of Producers/Importers and Brand Owners and Recyclers and Plastic Waste Processors by SPCB/PCC	✘	✘	✘	✘	✔	✔	The Producers, Importers, brandowners and recyclers register themselves on Extended producer responsibility portal and EPR cell has been formed at TNPCB for assisting the entities for registration
53.	Development of database of PIBO implementing EPR	✘	✘	✘	✘	✔	✔	The Producers, Importers, brandowners and recyclers register themselves on Extended producer responsibility portal which maintains a database of these entities and EPR cell has been formed at TNPCB for assisting the entities for registration

S.no	Action	Tamil Nadu	Rajasthan	Tripura	Puduchery	MP	Status of Implementation in Tamil Nadu	Remarks (for Tamil Nadu)
<b>Plastic waste management including single use plastics items</b>								
54.	Development of scheme for verification/audit of recyclers, PIBOs/ End of Life Disposal (EOLD) entities by SPCB/PCC	✗	✗	✗	✗	✓		The Producers, Importers, brandowners and recyclers register themselves on Extended producer responsibility portal which maintains a database of these entities and EPR cell has been formed at TNPCB for assisting the entities for registration
55.	Development of strategy for regular data collection with respect to plastic waste and reporting under PWMR by State/UT and ULBs	✗	✗	✗	✗	✓	✓	Data collection formats are circulated to Directorate of Municipal administration, Directorate of Town Panchayath and Greater Chennai Corporation and the data is collected every fortnightly and is connected to a dashboard which include data for all ULBs
56.	Issuance of ban on manufacture, storage, supply, sale and distribution of certain use and throwaway plastics such as plastic sheets, plastic plates, plastic tea/water cups, water pouches/packets, plastic straw, plastic flags, plastic carry bags irrespective of size and thickness	✓	✓	✓	✓	✓		
57.	Assessment of microplastics and development of guidelines for monitoring and management.	✓	✗	✗	✗	✗		
58.	Strengthening the capacities of nodal departments on the implementation of a national framework on EPR with trainings, workshops and ad hoc support. This may include activities like:	✓	✗	✗	✗	✗		
	1. Training of trainer manuals for bulk consumers aimed towards promoting alternatives to plastics							
	2. Capacity building of producers, bulk consumers, ULBs on plastic management (procurement to disposal), including upscaling demonstrated technological solutions							
	Capacity Programmes for officials of SPCB, RoPCB, SBM, MAWS, DTP, CC							

S.no	Action	Tamil Nadu	Rajasthan	Tripura	Puduchery	MP	Status of Implementation in Tamil Nadu	Remarks (for Tamil Nadu)
<b>Plastic waste management including single use plastics items</b>								
59.	Inventorization of PIBOs, PWPs through third party agencies	✓	✗	✗	✗	✗		Consulants are onboarded and EPR cell has been formed to assist entities for registration for EPR and maintain database
60.	Planning and demonstrating selected technological solutions to implement EPR in collaboration with producers and recyclers	✓	✗	✗	✗	✗		
<b>Enforcement of ban imposed on the use of identified single use plastic items at District/ULB/GP level</b>								
61.	Enforcement actions against violations; Identification and closure of manufacturing units of prohibited SUP items	✓	✓	✓	✓	✓		
62.	Illegal SUP units and godowns of the stockists to be traced and shut down	✓	✓	✓	✓	✓		
63.	Enforcing no use SUP in government Office, government functions, tourist places on priority	✗	✗	✗	✓	✗	✓	Government order has been issued to make all Government offices Single use plastic free.
64.	Conducting of interface meetings with producers, traders, merchants engaged in manufacture, storage, supply, sale and distribution of SUPs	✓	✓	✓	✓	✓		
65.	Monitoring of inter-state movement/transport of banned plastic items into the state	✓	✓	✓	✓	✓		
<b>Plastic recycling infrastructure and end of life disposal facilities</b>								
66.	Development of database of recyclers of plastic category wise and End of life disposal (EOLD) entities including recycling capacity.	✗	✗	✗	✗	✓	✓	Data base of plastic waste recyclers are uploaded in Meenudum Manjappai website
67.	Development of plan for setting up recycling facilities	✗	✗	✗	✗	✓		
68.	Development of incentive scheme for setting up of plastic recycling capacity category-wise	✗	✗	✗	✗	✓		
69.	Development of plan for management of compostable plastics or bioplastics	✗	✓	✗	✗	✗		

S.no	Action	Tamil Nadu	Rajasthan	Tripura	Puduchery	MP	Status of Implementation in Tamil Nadu	Remarks (for Tamil Nadu)
<b>Plastic recycling infrastructure and end of life disposal facilities</b>								
70.	Development of industrial composting facilities for compostable plastics.	✗	✓	✗	✗	✓		
71.	Development of infrastructure for EOLD, Waste to oil, waste to energy, road construction, co processing cement kilns.	✗	✗	✗	✗	✓		The seized plastic and the plastic waste generated are collected and sent to recyclers and coprocessed in cement kilns which have partnered with ULBs
72.	Development of scheme for promotion of recycling technologies and products made from recycled plastics	✗	✗	✗	✗	✓		National expo on eco alternatives to SUPs and Start up conference was held in September 2022 for promoting Alternatives, machinaries and new technologies
<b>Development and promotion of alternatives to prohibited single use plastic items and promoting innovation</b>								
73.	Conducting of Expos on eco-alternatives to banned single use plastics items	✓	✗	✗	✗	✗		
74.	Development of scheme for promoting producers to change design of plastic packaging to reduce use of plastic packaging material	✗	✗	✗	✗	✓		
75.	Promoting research and development on creating alternative packaging materials to plastics	✗	✗	✗	✓	✓	✓	TNPCB conducted National expo on eco alternatives to SUPs and Start up conference was held in September 2022 for promoting Alternatives to SUPs, machinaries and new technologies  TNPCB hosted Hackathon on the theme of reducing Single use plastic which attracted multiple entries involving innovative packaging solutions

S.no	Action	Tamil Nadu	Rajasthan	Tripura	Puduchery	MP	Status of Implementation in Tamil Nadu	Remarks (for Tamil Nadu)
<b>Development and promotion of alternatives to prohibited single use plastic items and promoting innovation</b>								
76.	State level study to be carried out on alternatives to plastic	✓	✓	✓	✓	✓		
	1. Inventorization of agencies engaged in production of eco-friendly alternative materials	✓						TNPCB partnered with TERI to develop the directory on eco alternatives to Single use plastics and is available on TNPCBs Meendum Manjappai website and Meendum Manjappai Mobile application
	2. Identification of start-ups and innovators engaged in alternate packaging materials	✓						TNPCB partnered with TERI to develop the directory on eco alternatives to Single use plastics and is available on TNPCBs Meendum Manjappai website and Meendum Manjappai Mobile application.  The Mobile application provides feature for Alternative material manufacturers to register and get listed on the application
<b>Data collection and monitoring mechanism</b>								
77.	Development of online database and monitoring system	✗	✓	✓	✓	✓	✓	The Meendum Manjappai website provides an online database of activities undertaken by TNPCB and ULBs under Ban of Single use plastics. It includes details on enforcement raids, SUP seizures, IEC activities, Manjappai vending machines, eco alternative manufacturers, Plastic waste recyclers.  Dashboard has been developed using PowerBI for monitoring activities related to enforcement raids

S.no	Action	Tamil Nadu	Rajasthan	Tripura	Puduchery	MP	Status of Implementation in Tamil Nadu	Remarks (for Tamil Nadu)
<b>Data collection and monitoring mechanism</b>								
78.	Development of online public grievance/complaints Portal	✗	✗	✗	✗	✓	✓	TNPCB developed a Mobile app named Meendum Manjappai app with grievance redressal functionality
79.	Development of mechanism to undertake regular quarterly survey for (i) prohibited single-use plastic items in plastic waste and (ii) compositional characterization of plastic waste in the following categories (a) Rigid plastic packaging including multi-layered packaging, (b) Flexible (plastic packaging -single layered and multi-layered of the plastics only and (c) Multi layered multi material (at least one layer of plastic and at least one layer of other material) plastic packaging	✗	✗	✗	✗	✓		
<b>Awareness generation and capacity building</b>								
80.	Publicity in mass media for awareness on the notification for elimination of Single use Plastic	✓	✓	✓	✓	✓		Detailing of frequency needed. No specific forms of media mentioned in action plan, but TV commercials and newspaper publicity has been done
81.	Creation of a tag line for use on all Government/ Media	✗	✓	✗	✗	✗		
82.	Empanelling of agencies for publicity / awareness	✗	✓	✗	✗	✗	✓	Not mentioned in action plan, but GoTN has empanelled agencies for digital awareness creation. -Agencies are hired for handling Social media pages. -Agencies are hired for development of animated videos for creating awareness on Single use plastic ban -Partnered with Agencies to conduct awareness through message on wheels

S.no	Action	Tamil Nadu	Rajasthan	Tripura	Puduchery	MP	Status of Implementation in Tamil Nadu	Remarks (for Tamil Nadu)
<b>Awareness generation and capacity building</b>								
83.	Development of a public movement by engaging with youth organizations such as SHGs, NCC, NSS, NYK and school students	✓	✓	✓	✓	✓		
84.	Promoting awareness on bioplastics and products marketed as plastic alternatives and capacity building of local actors to distinguish these products	✗	✓	✗	✗	✗		
85.	Promotion of zero waste stores and alternate materials like cloth bags run by Self-Help Groups (SHGs)	✗	✓	✗	✗	✗		
86.	Releasing a documentary movie on the “Ill effects of Single Use Plastic”.	✗	✗	✗	✓	✗	✓	Partnered with agency to develop Animated videos on the theme of ill effects of single use plastics
87.	SUP ban to be published and distributed through various means among public. Banners should be erected in public gathered places.	✓	✓	✓	✓	✓		Banners, Posters and displays are placed at public places like NH tolls, Bus stand, Malls, Government offices, TNPCB regional offices
88.	Employment of street plays as a vital instrument in awareness creation particularly in the Rural areas	✗	✗	✗	✓	✗	✓	Street plays are conducted at regional offices of TNPCB. Awareness through the concept of Message of wheels is undertaken which includes street plays at places of high footfall
89.	Formation of IEC cell which will publish updated awareness informative materials on SUP and host in website periodically.	✗	✗	✗	✓	✗	✓	PWM cell has been formed for the purpose of dissemination of information via Meendum Manjappai website
90.	LED awareness van to be displayed in all regional languages for creating awareness about “Ill effects of SUP”.	✗	✗	✗	✓	✗	✓	Not specified in action plan, but has been carried out through Message of wheels program

S.no	Action	Tamil Nadu	Rajasthan	Tripura	Puduchery	MP	Status of Implementation in Tamil Nadu	Remarks (for Tamil Nadu)
<b>Awareness generation and capacity building</b>								
91.	Several awareness programmes to be organised throughout the state involving Eco Club Schools & NGOs for implementation of plastic carry bag ban order. The School Education Department to mandate organizing awareness programme by school students.	✗	✓	✓	✓	✓	✓	Not specified in action plan, but has been carried out at school and college level in coordination with regional TNPCB offices
92.	An essay competition on “Ill-effects of Single Use Plastics on environment & health” to be organized among the school students for creating awareness among the people as well students.	✓	✗	✓	✗	✗	✓	Not specified in action plan, but has been carried out at school and college level in coordination with regional TNPCB offices. Drawing and essay Competitions were also held during the G20 Mega beach cleanup program
93.	Preparation of road map for awareness generation activities at State, District and ULB/GP level for citizens, institutional waste generators, RWAs/Market associations.	✗	✗	✗	✗	✓		
94.	State-wide launch of the people-led flagship awareness program	✓	✗	✗	✗	✗		
95.	Organising competitions and hackathons organized for school and college students	✓	✗	✗	✗	✗		



The state level action plans discussed various aspects covering policy and regulatory framework, Institutional mechanism, management of littered SUP items, plastic waste management including SUPs items, enforcement of ban imposed on the use of identified SUP items at District/ULB/ Gram Panchayat (GP) level, plastic recycling infrastructure and end of life disposal facilities, development and promotion of alternatives to prohibited SUP items and promoting innovation, data collection and monitoring mechanism, awareness generation and capacity building and action taken for reducing/elimination of SUP items in State/UT Government offices, attached/ subordinate offices, PSUs/ other organisations.

The most common action points which were observed across the action plans prepared by TN and other States is mentioned below.

- Drafting policy for incentivising units adopting alternatives to SUP
- Inclusion of mitigation measures and activities for phasing out SUP in ongoing projects activities
- Regular functioning of the Special Task force at state and district levels and review of work done
- Setting up of Project Management Unit (PMU) and technical expert assistance
- Setting up of PMU at SPCBs to support activities on Plastic waste management.
- Issuance of ban on manufacture, storage, supply, sale and distribution of certain use and throwaway plastics
- Enforcement actions against violations
- Conducting interface meetings with various stakeholders
- Monitoring of inter-state movement/transport of banned plastic items into the state
- Development of a public movement by engaging with youth organisations such as SHGs, National Cadet Corps (NCC), National Service Scheme (NSS), Nehru Yuva Kendra (NYK) and school students

However, there were some action points which were present in the action plans of other States, which were not present in the Comprehensive Action plan of TN. The comparative assessment carried out had led to the identification of the indicative and not exhaustive list of action points under the broad heads of the action plan which are detailed out in the Figure 2-4.

Enforcement	IEC & Awareness creation	Promotion of Alternatives	Monitoring & Evaluation
Survey of illegal Units	Targeted awareness	Sustainable public procurement policy	Online Database for Monitoring
Mechanism to regularly undertake survey	Details on Medium of creating Awareness	Tax holiday for SUP	Auditing to assess level of implementation
		Cost efficient alternatives	
		Schemes for promoting alternate packaging	

Figure 2-4: Broad action points from the Comprehensive Action Plans

The Comprehensive Action Plan prepared by Tamil Nadu required detailing of the action points with focus on outcome oriented and time bound planning for effective implementation of the ban on SUP, where each task has to be detailed out with specific outcomes along with the timeline and the responsible organization.

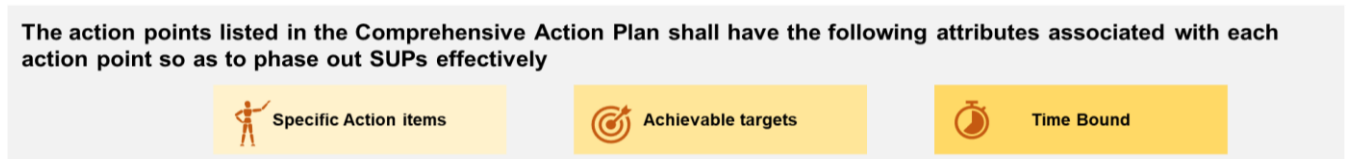


Figure 2-5: Indicative action points for a Comprehensive Action Plan

### Specific action items<sup>4</sup>

A few indicative Key Performance Indicators (KPIs) for monitoring the progress and accountability may include the aspects as provided in the Table 6.

Table 6: Indicative KPIs for action plan

Specific action point	Target	Time
<b>Enforcement</b>		
All category of commercial establishments	Defined number of raids based on type of ULB and Panchayaths	Monthly targets to complete the set targets
<b>IEC and awareness</b>		
All category of stakeholders Students, public, staffs, senior citizens	To define each ULB and panchayath to conduct specific number of IECs based on population  To reach out to defined number of people	Monthly targets to complete the set targets
<b>SUP usage</b>		
	To set the percentage reduction targets on average SUP seized per violations	Monthly targets to complete the set targets
	Targets on type of banned SUP	Monthly targets to complete the set targets
<b>Plastic recycling targets for ULBs</b>		

<sup>4</sup> The KPIs provided in the table is an indicative list of a few target oriented and time bound activities and is not an exhaustive list

SUPs effectively recycled	Percentage of SUPs effectively recycled as a percentage of plastic seized	Monthly targets to complete the set targets (ULBs & Panchayath)
Plastic collection points/ recycling centers	Number of plastic recycling Centers established by ULBs and private entities	Half yearly targets to complete the set targets ( ULBs & Panchayath)
<b>Adoption of Alternatives</b>		
Percentage Adoption of Alternatives	Measure the number of businesses transitioned into eco alternative production as a percentage of industries which were SUP manufacturers	Quarterly targets to complete the set targets (SPCB and Industries & MSME)

## 2.5 Legislative Ecosystem

The legislative ecosystem comprising of National Green Tribunal (NGT) and High Court plays a crucial role in the implementation of the single-use plastic ban in India.

### National Green Tribunal (NGT):

The NGT is a specialised judicial body established under the National Green Tribunal Act, 2010. It has the authority to hear and adjudicate environmental matters, including issues related to the single-use plastic ban. The legislative ecosystem involving the NGT includes:

- Issue directions, take legal actions and impose penalties to ensure compliance with existing regulations
- To review and appeal decisions made by CPCB, SPCBs and other authorities.
- Acts as an appellate body to ensure proper enforcement and implementation of the ban.
- Direct CPCB/SPCBs to appoint expert committees to provide technical advice and recommendations on matters related to the single-use plastic ban.

### High Courts:

High Courts have the power of judicial review and can issue directives to enforce environmental laws and regulations. The legislative ecosystem involving High Courts includes:

- High Court can address any Public Interest Litigation in the High Court on issues related to the single-use plastic ban.
- High Courts can take Suo-moto cognizance of matters on their interest and authority to review the actions and decisions of the CPCB, SPCBs and other relevant authorities regarding the single-use plastic ban.
- Issue directions, pass orders, and monitor the progress of the implementation of the ban
- Stringent measures to enforce compliance with the single-use plastic ban.

## 2.6 Other regulatory directions on SUP

CPCB being the apex regulatory body provides guidance, notifications, directions, reporting norms to support SPCBs in their efforts to effectively implement and monitor the ban on SUP. The CPCB issues directions including indicative action plans, directions for enforcement raids, awareness activities etc. All directions related to ban on SUP has been consolidated in the Table 7. The status of action taken for each direction is annexed in annexure 2.1.

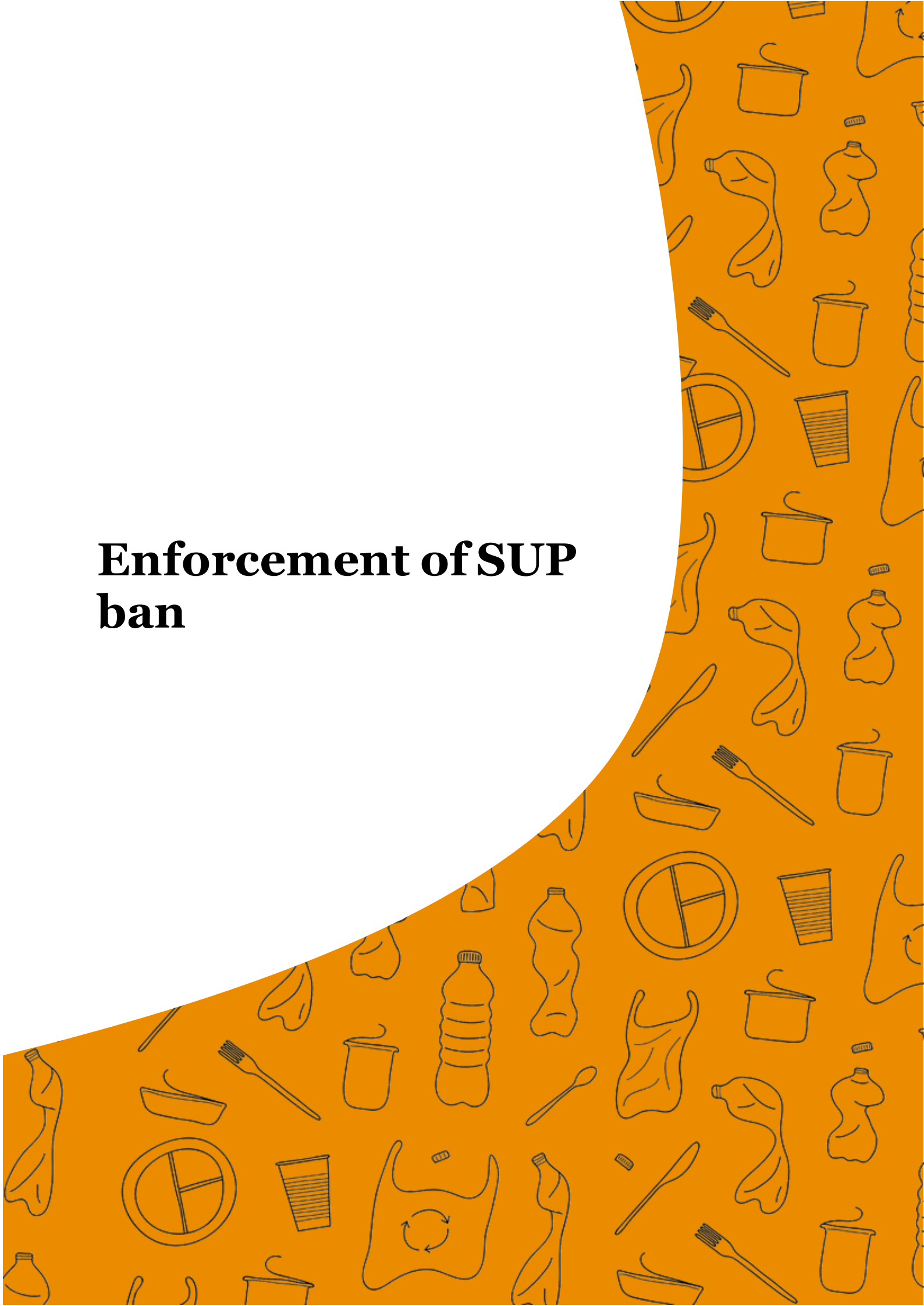
Table 7: Regulatory directions by CPCB on SUP ban to SPCBs

Date	Actions and tasks for SPCB
Mar 2023	SPCB along with UDD officials shall inspect industrial units and UDD officials shall inspect commercial establishments for four days during the period March to August 2023
Sept 2022	SPCBs or Pollution Control Committee by itself or through a designated agency shall verify compliance of Producers, Importers & Brand-Owners through inspection and periodic audit, as deemed appropriate, as well as plastic waste processors in their jurisdiction as per the Plastic Waste Management Rule, 2016
June 2022	Check whether manufactures print “not to be used in manufacture of SUP items prohibited under PWM rules” on packaging bags, invoices, Memorandum of Understanding (MoU) and Sales contract /price lists.
Feb 2022	To direct ecommerce companies to discontinue selling of banned SUP items
Feb 2022	To identify major commercial establishments dealing in SUP items
Feb 2022	Workshops with the entities commercial establishments to ensure zero inventory of SUP before 01 July 2022
Feb 2022	To take necessary action including cancellation of commercial licenses for commercial establishments
Feb 2022	To issue fresh commercial licenses for stockiest, retailers, sellers, and commercial establishments with a condition that they will not stock, sell or use banned SUP
Feb 2022	To frame local by-laws for levying environmental compensation in line with CPCB guideline
Feb 2022	Workshops and meetings with key stakeholders and key ministries directly/ indirectly involved or associated with production, storage, distribution, stocking and sale of banned SUP items
Feb 2022	To conduct field inspections in association with District Magistrate, District Police and Local urban and rural authorities as per format
Feb 2022	To identify SUP producers engaged in production of banned SUP items through contact tracing/ public notices and action against them in association with local authorities
Feb 2022	To coordinate with State authorities to ensure grievance raised in the SUP app or other similar apps and resolve the same
Feb 2022	To take penal action/ levy Environmental Compensation (EC) on violators
Feb 2022	To be executed through other agencies <ul style="list-style-type: none"> <li>To provide necessary assistance for convening of training programs of MSMEs</li> </ul>

Date	Actions and tasks for SPCB
	<p>involving Central Institute of Petrochemicals Engineering &amp; Technology (CIPET), Certificate of Public Convenience and Necessity (CPCN), and MSME State institute to facilitate transition from SUP to alternatives by MSMEs</p> <ul style="list-style-type: none"> <li>• To conduct market survey through Third Party Agency to phase out banned SUP items</li> <li>• Submit detailed awareness program for elimination of SUP along with timelines</li> <li>• Submit fortnightly reports 5<sup>th</sup> and 20<sup>th</sup> of every month to CPCB as per format Annex II</li> </ul>
Feb 2022	Manufacturers to not supply plastic raw materials to producers engaged in production of banned SUP items. Ensure suppliers/stockiest/dealers not to supply raw materials to producers engaged in production of banned SUP items
Feb 2022	<p>Constitution of State Task Force for effective implementation of the plastic ban and to prepare a Comprehensive Action Plan (CAP) for implementation of the Plastic Waste Management Rules, 2016.</p> <ul style="list-style-type: none"> <li>• Prepare comprehensive action plan</li> <li>• Assess plastic waste generated in the state- identify gaps in policy, implementation, enforcement</li> <li>• Strengthen policy, regulatory, institutional mechanisms for implementation of PWM 2016 rules</li> <li>• Measures for effective enforcement of PWM rules</li> <li>• Develop policies for supporting the adoption of alternatives for identified SUP</li> <li>• Measures strengthen Urban local Bodies/ gram panchayats on the storage, transport, collection, segregation, disposal, processing</li> <li>• Measures of monitoring of implementation of PWM rules</li> <li>• Road map for activities to build awareness and outreach</li> <li>• Strategy for building a strong public movement for mitigation of plastic pollution by involving schools, clubs, NGOs with a detailed action plan</li> <li>• Effectively implement Meendum Manjappai campaign</li> <li>• Promote Eco alternatives by effectively documenting and incentivising such initiatives</li> </ul> <p>District level</p> <ul style="list-style-type: none"> <li>• Implement the comprehensive action plan prepared by STF at district and city level</li> <li>• District level TF will submit the plastic generated in the respective districts with collection, recycling and end of life disposal and identify gaps</li> <li>• Necessary measures for effective enforcement of PWM rules and ban imposed</li> <li>• Measures to strengthen the ULB/ GM for the storage, transport, collection, segregation, disposal, processing</li> <li>• District level task force shall conduct necessary awareness with strong public movement for mitigation of plastic pollution</li> <li>• Shall promote eco alternatives</li> </ul>
Feb 2022	The funds collected under environmental compensation shall be kept in a separate Escrow account by CPCB or SPCBs or Pollution Control Committee. The funds collected shall be utilized in collection, recycling and end of life disposal of uncollected and non-recycled or non- end of life disposal of plastic packaging waste, on which the environmental compensation is levied. Modalities for utilisation of the funds for plastic waste management on an annual basis would be recommended by the Committee for Extended Producer Responsibility implementation and approved by the Competent Authority in the Ministry

Date	Actions and tasks for SPCB
Feb 2022	SPCBs or Pollution Control Committee (PCC) will establish a mechanism to ensure a regular dialogue between relevant stakeholders involved in the fulfilment of extended producer responsibility obligations under the Plastic Waste Management Rule, 2016.
July 2021	SPCB/ PCCs to conduct quarterly assessments of phasing out SUPs in their jurisdiction
June 2021	Govt of India decided to form special task force under chairmanship of chief secretary of govt for taking measures to eliminate SUP and to prepare a comprehensive action plan for implementation in a mission mode
Oct 2020	Directions for setting up of Institutional mechanism for enforcement of provisions of PWM rules
Oct 2020	Enforcement of provisions of PWM rules for storing, packaging, or selling cigarette, gutkha, tobacco, and pan masala in all forms
Sept 2020	<p>NGT order “CPCB and SPCB to workout enforcement strategies, including action plan in all districts, involving educational, religious and other institutions”</p> <p>One model district has to identified and made compliant</p>
Nov- 2019	Status of Marking & Labeling on Carry bags/Multilayered Packaging recyclable, type)
Sept 2019	Hon'ble National Green Tribunal vide order dated 26 September 2019 in O.A. No. 360 of 2018 directed that CPCB shall facilitate the District Magistrates in preparation of District Environmental Plan by placing Model plan on its website. This model plan may be adopted as per local requirements by all Districts under supervision of District Magistrate. The said order also directs that Department of Environment in respective States / UTs should collect district plans to prepare State Environment Plan, which shall be monitored by respective Chief Secretaries of State/UT by 15 December 2019.
July 2019	SPCBs/ PCCs and Municipalities should constitute squad to check illegal manufacturing, stocking, sale of <50microns thickness plastic carry bags and uncertified compostable carry bags/products in the market.

# Enforcement of SUP ban





# 3 Enforcement of ban

## 3.1 Need for enforcement

Over the years plastic has become the most convenient, safe, tamper free and economical material choice for most of the routine products and packaging, replacing conventional materials. It has become the most preferred choice of material at a business or retail level to even at a household level, for example thin plastic films are replacing a steel or aluminium lid for a vessel. Such is the convenience that plastic has brought to human lives.

A State-wide ban of the SUPs has been formulated and implemented across States to prevent the use of SUPs and encourage the use of eco-alternatives to SUPs. It is, hence, essential to monitor the implementation of the ban and reward/ punish the adherers and the non-adherers of the ban. It is in this context that enforcement of the ban through various measures become critical in bringing the change among the citizens. Enforcement refers to the act of compelling observance of or compliance with a law, rule, or obligation. For the implementation of SUP ban, various enforcement measures such as inspection, seizure of plastics, imposing of fines etc. are commonly practiced.

This section presents the various enforcement approaches taken for implementation of SUP ban across the globe and assesses the key enforcement initiatives taken by Tamil Nadu Government with respect to target segment, frequency and impact created, to suggest actions to strengthen enforcement of SUP ban in the State.

## 3.2 Global practices for enforcement and its impact

Globally, efficient enforcement activities undertaken have been one of the key factors in deterring production and use of SUPs. It is observed through research that most of the enforcement activities undertaken globally for implementation of SUP ban revolve around taxes, levies, cancellation of licenses and in some cases imprisonment. However, the moderation and the intensity of these actions differ greatly causing wide disparity in the impact of these actions. These global examples highlight the importance of certain nuances in approaching enforcement of SUP ban like setting of short-term goals, giving provincial powers, SUP focused levies, focus on tourists etc., that have contributed to the success of the ban.

Some of the successful cases where enforcement of the ban has been efficient in making considerable impact in terms of reduction in SUP production/ plastic waste generation are as given in Table 8.

Table 8: Global practices for enforcement of SUP ban

S.No.	Enforcement initiatives	Country of application	Success factors	Impact
1.	PlasTax- Tax on plastic bags at points of sale	Ireland (2002)	The PlasTax levied was priced higher than the Willingness to Pay (WTP) of the citizens for a plastic carry bag.	According to UNEP, within one year from the introduction of the tax, the use of plastic bags in Ireland dropped by more than 90% and the consumption per person fell from 328 plastic bags per year to 21 bags. Likewise, while prior to the 2002 levy, plastic bags accounted for 5% of the national waste, in 2004 this number fell to 0.22%, with a strong perception among surveyed households of the positive effects of the levy on

S.No.	Enforcement initiatives	Country of application	Success factors	Impact
				the environment.
2.	Kenya: Punitive total ban	Kenya (2017)	Kenya Government came up with the new law. According to the law, offenders can face fines of up to \$38,000 or four-year jail term, making Kenya's plastic bag ban the most severe in the world. Kenya's law allows the police to take action against anyone who is carrying a plastic carry bag.	Large super-markets have completely shifted to provide cloth bags. The actual impact is currently being estimated by the Government.
3.	Regulation in the Caribbean SIDS and countries with islands	Antigua and Barbuda (2016)	Key elements for the success of the policy include four rounds of stakeholder consultations to ensure that the enforcement policy would be acceptable and practical for their country. In addition, the enforcement policy was not dealt with, in isolation, rather was coupled with friendly nudging like conduct of awareness campaigns and tax rebate for alternatives.	In the first year, the ban contributed to a 15.1% decrease in the quantity of plastic discarded in landfills in Antigua and Barbuda and paved the way for additional policies targeting the reduction of plastics. For instance, following this, the import of plastic food service containers and cups was prohibited in July 2017.
4.	Stringent ban on SUP carry bags	Tanzania (2019)	Tanzania's had a stringent enforcement of the ban on SUPs. A hefty fine up to 20 million shillings was levied in case of any violation. In addition, tourists and travelers were prohibited from bringing in any type of SUP product. There were tracking and deposit mechanisms to ensure the same.	Such stringent measures have slowly moved Africa off the global SUP waste hotspot map from being a major hotspot with a generation of 11 MT (plastic waste) in 2019
5.	National and provincial policies	China (2008)	China is one of the earliest countries to implement the ban on SUPs. It initiated the ban as early as in 2008. The success of their approach can be attributed to their focus on provisional policies and autonomy and their target oriented short-term plans (5 year/	One year after the introduction of the legislation, the distribution of plastic bags fell on average by 70% avoiding the use of nearly 40 million plastic bags. Within 7 years the number of plastic bags used by super-markets and shopping malls shrank by two thirds.

S.No.	Enforcement initiatives	Country of application	Success factors	Impact
			10-year plans)	

As discussed in the table above, though the activities undertaken towards enforcement of the SUP ban are similar globally, small changes to customise these activities for the local population resulted in making the ban a success. The need for customisation arises due to the cultural, commercial and demographic differences from one region to another. These customisations could be in the frequency of activities, quantum of fines levied, choice of violations for penalties, targeted segment of society etc.

### 3.3 Components for planning enforcement of SUP ban

The following are the key components that are discerned from experiences of other countries, global frameworks and recommendations by international stakeholders like United Nation Environmental Program (UNEP), that should be considered for successful enforcement of SUP ban. The three key components of the enforcement process are as follows.

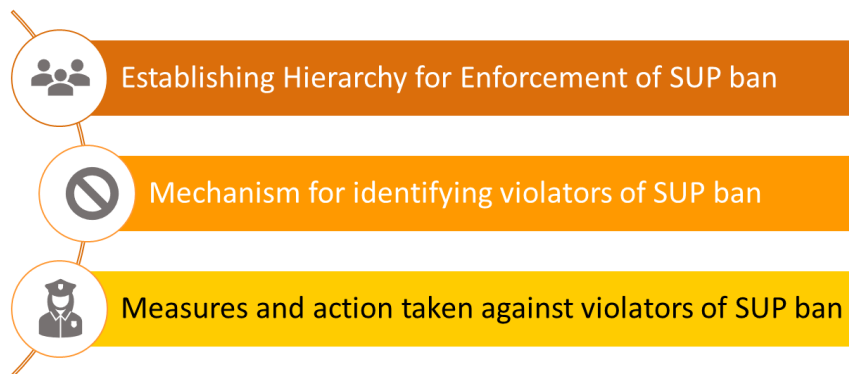


Figure 3-1: Key components for planning enforcement of SUP ban

#### Hierarchy for enforcement

Establishing a hierarchy for dissemination of regulations and reporting is vital to create a smooth system for delegation and supervision. Such a defined structure will also ensure accountability for the enforcement process. Some of the key aspects that are to be accounted for, while establishing a hierarchy for enforcement include.

- **Defined roles and responsibilities for enforcement**  
 The roles and responsibilities in terms of enforcement may be clearly defined. For e.g. the nodal officer for carrying out the enforcement may be assigned and his/ her role in terms of raids, monitoring of the repeat violators etc. may be defined more specifically.
- **Ensuring sufficient resource allocation for enforcement**  
 Enforcement in itself is a full-time responsibility that demands dedicated attention to the timing, frequency, target of the enforcement activities and monitoring the action taken by the violators to prevent repeated violation. Hence, it requires resources at every institution level (SPCB/ PCC/ ULB). Sufficient resource allocation may be undertaken at each institution that is responsible for enforcement of the ban. This includes the ULBs, Regulatory body of ULBs, SPCB head office and district offices and other related entities.

## Mechanism for identifying violators of SUP ban

Plastic pollution is being increasingly regulated globally. Such regulations are currently adopted by more than 137 countries. However, research reveals that legislations are also proving to be challenging to implement in many countries with limited law enforcement. Hence, putting in place a mechanism to identify the violators of the laid regulations is crucial for enforcement of the SUP ban.

- Creation of baseline data

The lack of baseline data on the status of enforcement of the ban hampers the ability to report and track progress. The baseline information on the number of industries/ shops/ retail outlets/ SUP manufacturers in a jurisdiction and the status of adoption of the ban by these entities makes it easy to track progress and alter strategies for more effective enforcement if required. This will also aid in having focused enforcement drives where the officials know the entities to target during these drives.

- Institutional coordination for enforcement

Enforcement is a multi- entity activity where there are different entities responsible for various aspects of the enforcement like formulation of regulations, dissemination of regulation related information, conducting of raids and levying of fines, monitoring of progress, cancelling of licenses etc. For e.g. lack of regular communication between the regulatory body that frames ban related regulations and the implementing authority/ nodal department will make it difficult for the former to track progress and understand the impact of the regulations. Lack of coordination amongst the institutions undertaking different activities will hinder the progress towards successful enforcement of the SUP ban. Hence, planning mechanisms to ensure communication channels and coordination across entities is essential for successful implementation of the ban.

- **Measures to curb violation**

There are a number of innovative measures that are framed to curb violation against the SUP ban. These are essential to deter violation through both pre and post violation actions. The following are some innovative measures

- Preventive Cess for preventing the occurrence of a violation

A tax on banned SUP items for the commercial entities may disincentivize the consumption of the banned items. PlasTax introduced by Ireland mentioned above is one such cess.

- Enforcement on the floating population

Given that the cities are expanding widely and consequently the percentage of floating population is also on the rise it is important to hold them responsible for any kind of violation against the ban. Regular checks at the transit locations like check posts and toll gates to prevent transportation of the banned items in the State. The tourists should also be held responsible not to consume the banned SUP items.

- Communication of the enforcement process to the concerned stakeholders

Regular notification of the updated PWM rules to the concerned stakeholders (industry/ retailers/ importers/ BOs etc.) along with the actions to be taken against violation of each provision. Sufficient resource allocation may be undertaken at each institution that is responsible for enforcement of the ban. This includes the ULBs, Regulatory body of ULBs, SPCB head office and district offices and other related entities.

- Mechanism for monitoring the action taken against violators

An independent tracker to have a database of violators and the action taken against them by the State has proven essential. This tracker will not only help in monitoring the action taken by the State from time to time but will also be vital in tracking the post violation actions taken by the violators. These may be further used

to do progressive levy on the repeat offenders. For e.g., progressive levy on the second or third time of violation by an entity.

### 3.4 Enforcement of SUP ban in India

According to the hierarchy for enforcement of SUP ban in India, the main regulatory authority is the Central Pollution Control Board (CPCB). The SPCBs (SPCB) is the primary monitoring authority at the State level and follows the enforcement requirements as guided by CPCB. The ULBs, the UDDs and the Gram Panchayats are responsible for their respective jurisdictions. According to the Tamil Nadu ULB Act (TNULB) Act, ULBs can frame their own by-laws for local governance across sectors. The SUP manufacturers and producers are also included in the enforcement actions undertaken in the State.

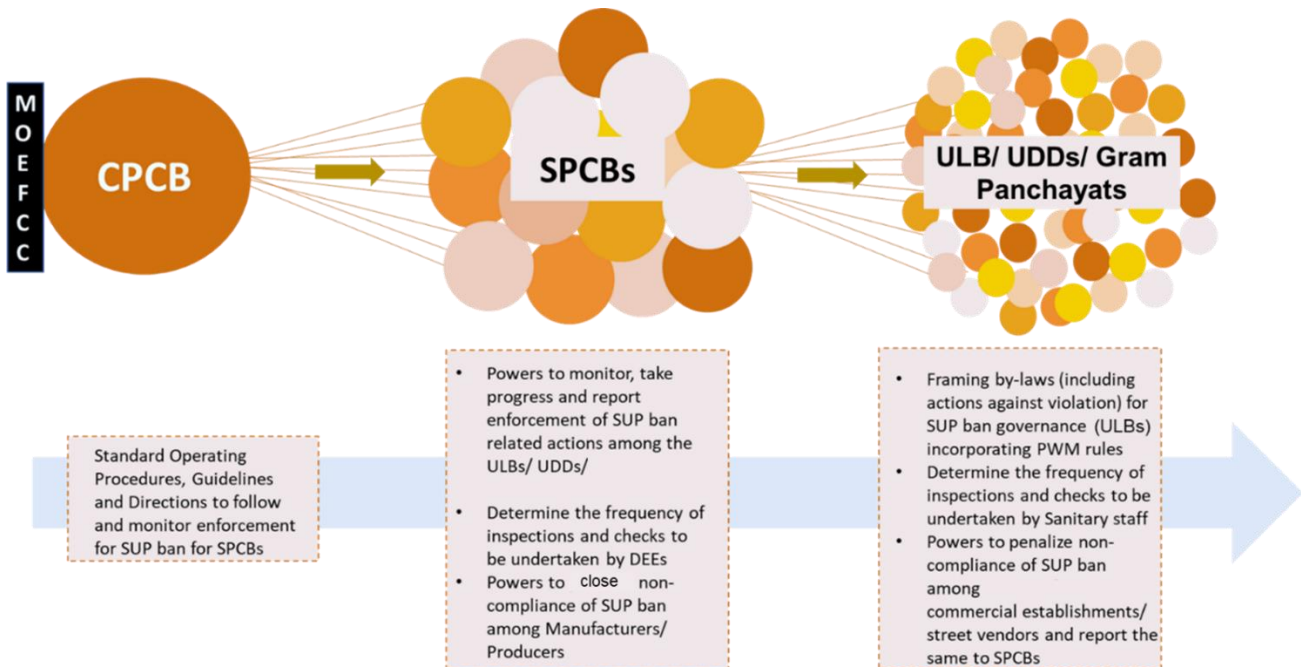


Figure 3-2: Enforcement structure of SUP ban in India

### 3.5 Guidelines and rules constituted by CPCB

CPCB is the governing and regulatory body for implementation of Plastic Waste Management (PWM) Rules in India. Following the National Ban on SUPs from July 2022, CPCB has been providing guidance and directions to the State with respect to implementation of the ban in the respective States. CPCB has laid down mechanisms and guidelines to conduct enforcement activities with respect to SUP ban in the States. The key guidelines, direction or Standard Operating Procedures (SOPs) issued from time to time in this regard by CPCB are listed below.

1. Standard Operating Procedures (SOP) for special inspection drive
2. Directions under the Environment Protection Act for implementation of SUP ban (by SPCBs/ UDDs)
3. Guidelines for Assessment of Environment Compensation (EC) to be levied against Violation of Plastic Waste Management Rules, 2016
4. Directions to SUP sellers/ users, plastic raw material manufacturers and e-commerce companies regarding actions that would be taken against the non-compliance to the ban.

A brief overview of these directions and guidelines are as given below.

### 3.5.1 SOP for special inspection drives

CPCB has released the Standard Operating Procedures (SOPs) for Special Inspection Drives for enforcement of Ban on SUPs. The SOP mandates conducting of special inspection drives at the State level for strict enforcement of the SUP ban laying emphasis on restricting usage of banned SUP items by the informal sector including the street vendors, flower sellers, vegetable/ fish market, wholesalers etc. The SOP lays down the protocols for conducting special inspection drive with the objective of identifying entities that are violating the ban on SUP.

Table 9: Key aspects as discussed under the SOP for special inspection drives

SI.No.	Description of aspect	Standards for Operating (w.r.t. inspections)
1.	<b>Frequency of monitoring</b>	The inspections shall be carried out for at least four days a month for the six months starting from February 2023 (February – August 2023). The dates for inspection shall be decided by the SPCB/ PCC / CPCB Regional Directorate / CPCB head office. Element of surprise has to be ensured while scheduling the inspections.
2.	<b>Constitution of team</b>	The nodal agency (SPCBs/ PCCs) shall nominate the nodal officer for conducting SUP inspections. The nodal officer shall plan for inspection to be carried out by a team assigned to her/ him.
3.	<b>Targeted entities</b>	Commercial Establishments (including both sellers and users) and Industries producing banned SUP items (Producers)
4.	<b>Reporting of inspection</b>	The inspection reports -are mandated to be filed by the field officers through the SUP monitoring compliance app. This app was developed by CPCB to facilitate direct reporting of enforcement details by field officers. The portal has reporting mechanisms to monitor the status of implementation of the ban and the inspections/ enforcement activities undertaken. The portal has formats for both fortnightly and daily reporting by the SPCBs and the District Environmental Engineers respectively.
5.	<b>Action taken against violators of SUP ban</b>	Action against violators shall be taken by the SPCB/PCC and may include the following <ol style="list-style-type: none"> <li>Seizure of banned SUP items</li> <li>Levying of EC</li> <li>Closure of Unit</li> </ol>
6.	<b>Daily / Monthly Reports</b>	Daily/ Monthly reports shall be auto-generated based on the inspections reports filed. The Nodal officer can view the report before confirming the same.

### 3.5.2 Directions under the Environment Protection Act for implementation of SUP ban

Following the release of the SOP for special inspection drives, CPCB issued the Direction under section 5 of Environment (Protection) Act, 1986 for implementation of ban on SUPs on 1<sup>st</sup> March, 2023. The key action to be taken by the SPCBs or ULBs or UDDs as directed are given below.

- To follow Standard Operating Procedures (SOPs) for conducting inspection drives for enforcement of SUP ban.
- To deploy concerned officials and provide assistance for execution of the planned activities for enforcement of SUP ban.



3. Register all the field officers on the SUP ban field inspection app
4. Completion of the field inspections before 25<sup>th</sup> of every month and timely submission of the auto generated report in the SUP ban monitoring portal
5. To take action against the complaints received on the banned SUP public grievance app within seven days of registration of a complaint
6. To take action against banned SUP producers/ raw material suppliers to banned SUP manufacturers.

### 3.5.3 Guidelines for Assessment of Environment Compensation

CPCB in compliance with the Hon'ble NGT order dated 10.09.20 in O.A. No. 247/2017, framed the regime for levying EC for violation of PWM Rules and the same was published in September 2022. As per provision 18 notified through Amendments to PWM Rules dated July 06, 2022, "The Environmental Compensation shall be levied based upon polluter pays principle, on persons who are not complying with the provisions of these rules, as per guidelines notified by the CPCB." According to the NGT order dated 8<sup>th</sup> January 2021, it is directed that "EC and penal action regime proposed by the CPCB may be duly implemented by the CPCB, State PCBs/PCCs, State Level Monitoring Committees and all other concerned authorities". The detailed list of action to be taken against violations under each of the provisions of the PWM rules along with the commensurate Environmental Compensation to be undertaken in terms of fines, seizures, closure of units are detailed out in the *Guidelines for Assessment of Environment Compensation to be levied for Violation of Plastic Waste Management Rules, 2016*<sup>5</sup>. The violations related to the SUP ban that are covered include production, manufacturing, stocking, distribution, selling, usage and import of banned SUP items. The following is a summary of the Environment Compensation regime as per the guidelines published by CPCB.

- The environment compensation for sale/ usage of banned SUPs shall be levied per ton of banned SUPs seized.
- Repeated violations up to 3 times shall be noted and there shall be a 100% and 200% increased compensation over the fine levied for the first violation of the PWM rules.
- Compostable plastic manufacturers will have their CPCB certificates cancelled and their unit closed if they do not comply by the conditions specified in the CPCB certificate.
- The environment compensation rules have actions to be undertaken by the ULBs as well as the SPCBs.
- The guidelines fix the minimum and the maximum fine to be levied based on the type of violation, type of violator, size of violator etc.

#### Other CPCB initiatives towards SUP ban enforcement

A one-month long pan India enforcement campaign was undertaken for implementation of ban on identified SUP items from 1st to 31st July 2022. Further, States and Union territories were asked to undertake regular enforcement drives to implement ban. States and UTs were also asked to undertake random checking at border checkpoints to stop inter-State movement of banned SUP items.

- The guidelines provide instruction regarding the action to be taken against the violators as well as local bodies. The guidelines also notifies that the collected EC funds will be put in an Escrow account and will be utilised for disposal of the plastic waste collected in the region.

<sup>5</sup> [https://cpcb.nic.in/uploads/plasticwaste/EC\\_Regime\\_PWM.pdf](https://cpcb.nic.in/uploads/plasticwaste/EC_Regime_PWM.pdf)



A summary of the Environment Compensation rules is given in the Table 10.

Table 10: Summary of the environment compensation rules

Violator type	Violation	Seizure of SUP items	Progressive fines for repeat violations	Cancellation of registration/licenses
Producer	Manufacturing plastic bags not meeting Specifications Manufacturing plastic sheet	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Production of prohibited SUP items		<input checked="" type="checkbox"/>	
Manufacturer	Certificate not obtained for compostable plastics or not complying with conditions specified in Certificate issued by CPCB		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Raw material sold to producers not having registration from SPCB		<input checked="" type="checkbox"/>	
Stockist/distributors	Stocking and distribution of prohibited SUP items or Selling products in plastic bags which are not complying with provisions of PWM Rules	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Importer	Import of prohibited SUP items	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Commercial establishments	Selling of prohibited SUP items or Selling products in plastic bags which are not complying with provisions of PWM Rules	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Street vendor	Selling of prohibited SUP items or Selling products in plastic bags which are not complying with provisions of PWM Rules		<input checked="" type="checkbox"/>	
Municipal Commissioner, Village Panchayat,	Adequate facilities for plastic waste management (PWM) not provided		<input checked="" type="checkbox"/>	
Person responsible for plastic burning /Industries	Burning plastic / SUP		<input checked="" type="checkbox"/>	
Waste generator	Waste not segregated, Waste littered		<input checked="" type="checkbox"/>	
Manufacturer/ Producer/BO	Not following labelling requirements		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

### 3.5.4 Directions to stakeholders regarding non-compliance of ban

CPCB has issued independent directions to different types of stakeholders like SUP sellers/ Plastic manufacturers/ e-commerce companies etc. regarding necessary action to be taken towards the phasing out of the SUP. The action that will be taken against the violations of the PWM rules that apply to the particular entity are also specified in the directions.

## 3.6 Action taken and status of enforcement initiatives by TNPCB

Tamil Nadu Pollution Control Board (TNPCB) has been undertaking enforcement activities in addition to the enforcement initiatives recommended by CPCB and has been conducting regular enforcement activities. There

have been regular raids and checks conducted both by the ULBs and the District Environmental Engineers (DEEs).

As defined by CPCB, the respective ULBs are responsible for enforcement of the SUP ban against the retailers and sellers, and Commercial establishments. TNPCB is responsible for the enforcement amongst the manufacturers and producers (as defined in the Tamil Nadu Urban Local Bodies Act). According to the Tamil Nadu’s ULB Act, the ULBs can form their own by laws for Plastic Waste Management under which the responsibilities of stakeholders involved in enforcement of the ban and actions to be taken against the violations of various provisions have been defined. However, Environment Compensation rules mandates levying penalties based on these rules. Some of the ULBs like Greater Chennai Corporation (GCC) have prepared by laws and the action taken in their jurisdiction is as per these laws.

At the ULB level, the sanitary officer is responsible for carrying out the enforcement activities with respect to the SUP ban. The enforcement activities in case of industry and manufacturers are undertaken by the respective District Environmental Engineers (DEEs) of TNPCB. The designated personnel report the progress regarding the activities undertaken in their respective areas to the TNPCB corporate office.

At present there is no independent team allocated for the monitoring of the enforcement activities at TNPCB corporate office. It is observed that the team allotted for Plastic Waste Management (PWM) takes care of the enforcement activities with a nodal officer appointed for the same. The enforcement activities undertaken by TNPCB and ULBs towards the SUP ban are as given in the figure below.

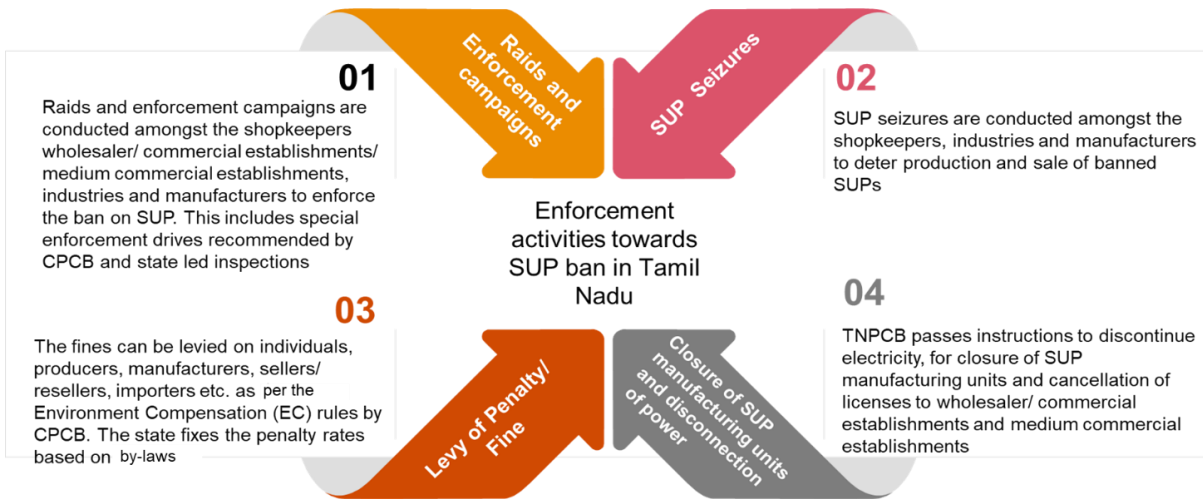


Figure 3-3: Enforcement activities undertaken by ULBs<sup>6</sup>








### 3.6.1 Action Taken in response to CPCB requirements

The following observations in Table 11 have been made in terms of the progress against the CPCB requirements for enforcement.

Table 11: Status of action taken by TNPCB towards CPCB requirements

S.No.	Aspects of inspection	Status of action taken	Key activities undertaken
-------	-----------------------	------------------------	---------------------------

<sup>6</sup> Commercial establishments and shops having more than 1000 sq. ft. area. Shops in malls, textile shops, all supermarkets, all theatres, all kalyana mandapams, all air conditioned hotels and restaurants should be treated and fined under this category. Commercial establishments and shops between 101 and 1000 sq. ft. area. All small commercial and street vendors up to 100 sq. ft. area.

S.No.	Aspects of inspection	Status of action taken	Key activities undertaken
1.	Adherence to SOP for special enforcement drives		The SOP are followed in the State for the special enforcement drives in terms of the frequency and enforcement activities to be conducted. However, the reporting requirements to CPCB are not completely met.
2.	Conducting of special enforcement drives every month (for 4 days)		The special enforcement drives have been regularly undertaken by TNPCB with the ULBs by the District offices.
3.	Conducting of field inspection every month before 25 <sup>th</sup> of that month		Field inspections are conducted by the ULB staff and the district engineers of TNPCB every month and the report are shared with TNPCB head office.
4.	To take action against complaints received on SUP public grievance app within 7 days of complaint registration		ULBs resolve the complaints within 7 days while TNPCB monitors the resolving of the complaints within the 14 days of the posting of the complaint. In case of delay in addressing post 7 days, the complaint will be directed to the respective DEEs TNPCB. However, it is also observed that few of the complaints have extended beyond the specified timelines. The complaint status reports are sent to TNPCB by the ULBs which is to be update in the app. Daily reports of the complaints registered (covering the nature of complaint, details of the violator and the actions taken against these complaints) are submitted to CPCB from 1 <sup>st</sup> July 2022 (Date of effectiveness of the national ban on SUPs)
5.	To monitor and take necessary action against SUP manufacturers and raw material suppliers		There are regular checks and visits are made to manufacturing clusters and the units to ensure discontinuation of their operations. Directives for closure and disconnection of power supply were issued to 229 industries involved in manufacture of banned SUPs between Dec 2019 to Aug 2023.
6.	Nomination of nodal officer for conduction of SUP inspections		TNPCB has nominated a nodal officer from their plastic waste management team at the corporate office to handle activities relating to enforcement.
7.	Filing of inspection reports through the SUP monitoring portal		TNPCB collects the field inspection reports from a few districts at present. However, these are not currently uploaded in the portal as informed by field officer. Accounts have not been created as the portal is posing some technical glitches.

S.No.	Aspects of inspection	Status of action taken	Key activities undertaken
8.	Action against violators shall be taken by the SPCB/PCC as prescribed in the guidelines by CPCB	●	The actions currently taken towards the violations is a combination of the CPCB norms, Tamil Nadu Local Body Act and the SWM rules. It has a detailed list of responsibilities for each stakeholder involved in PWM, the penalties for contravention of these laws and the enforcement mechanisms. These are explained in detail in 3.6.2.
9.	Submission of daily/ monthly reports auto generated from the SUP monitoring portal	●	The SUP monitoring portal is not regularly use by the TNPCB team due to technical glitches, and lack of its understanding by the staff.
Legend: Complete adherence- ● Partial adherence- ● Not currently followed- ●			

The assessment of the action taken by TNPCB towards the requirements laid down by CPCB indicates gaps in reporting of the enforcement activities undertaken, to CPCB, especially in time intervals as recommended by CPCB. It is also partly due to the technical glitches in using the SUP monitoring portal (especially for the shop wise inspection details to be recorded as recommended by CPCB).

### 3.6.2 Assessment of enforcement activities in Tamil Nadu

During the enforcement campaigns, non-compliance of the SUP ban has been witnessed in commercial establishments, manufacturing and retail shops in local markets. Actions have been taken on the deviations against the violations of the PWM rules as given in the above figure. As on date, the penalty levied during the enforcement campaigns is approximately Rs. 1529 lakhs and 2146 tons of material was seized. The above fine and seizure quantities are cumulative numbers for the period January 2019 to August 15th 2023. Closure directions and disconnection of power supply were issued to 229 industries involved in manufacture of banned SUPs during the period January 2019 and August 2023.

#### a. Need for planning of enforcement activities

The figure below indicates frequent fluctuations in the number of raids conducted every month, with the number in April 2023 being the lowest in the selected period at 16000 raids. The overall fluctuation in the number of raids conducted may be attributed to limited planning of enforcement activities devoid of monthly entity wise targets prepared based on a baseline data (as explained under section 3.3).

Further, it can be noted that the number of raids conducted saw a 100% rise in August 2022 following the central ban on 19 SUP items including carry bags with thickness less than 75 microns. Following this, the consistent number of raids during October, November and December 2022 may be attributed to the special enforcement drives conducted by the State as per the instructions of CPCB, after which the number of raids started to witness a downward trend. A consistent planned and targeted approach to enforcement is critical in achieving the desired outcomes. Such consistent action layered up with strict action on repeat offenders by planning for a follow up mechanism shall aid in ensuring adherence to SUP ban.

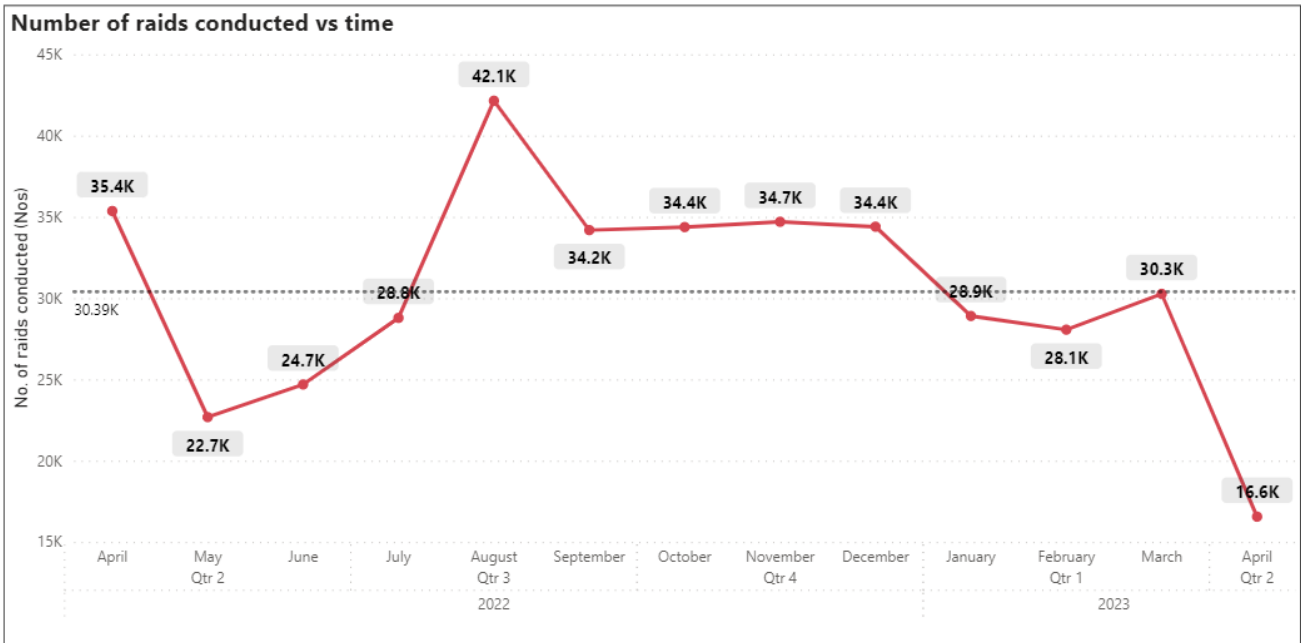


Figure 3-4: Number of Single use plastic Ban enforcement raids conducted per month ( FY22-23)

As observed in the Figure 3-5, the trend of fines levied and collected in the last financial year, indicate a correlation between the number of raids conducted and the fines levied. The effectiveness of the special enforcement drives conducted during August to September 2022 is also evident through the fall in the fines levied during these months.

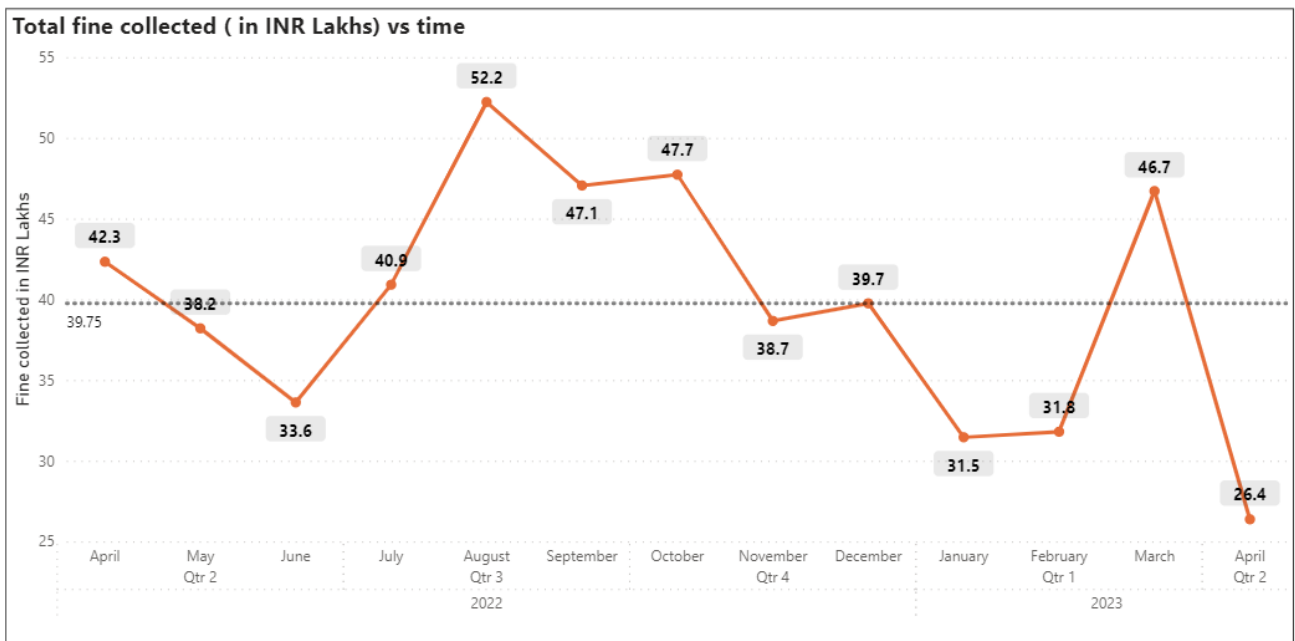


Figure 3-5: Fine collected in INR Lakhs per month

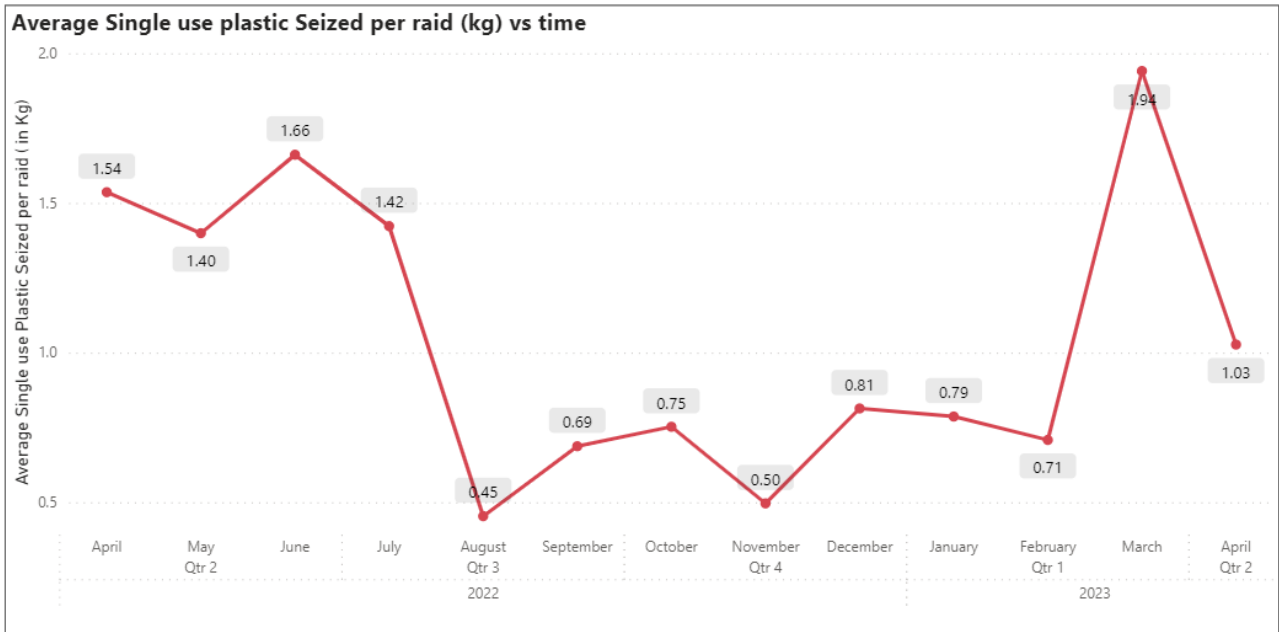


Figure 3-6: Average SUP seized per raid

The following figure depicts analysis of day wise seizure data for Chennai for the month of April and May 2023. It is noted from the analysis that percentage of violators are relatively higher on Sundays and Mondays in all the weeks during the indicated period<sup>7</sup>. However, it is also observed that the number of raids conducted on Sundays remain the lowest during any week. Hence, the increased percentage of violators during the weekend and on Mondays could be attributable to either increased use/ transaction of SUPs during weekends or low number of raids during the weekends. Either ways, this emphasizes the need to strengthen enforcement activities on weekends since the analysis indicate a possibility of increased SUP use during weekends (and hence violation).

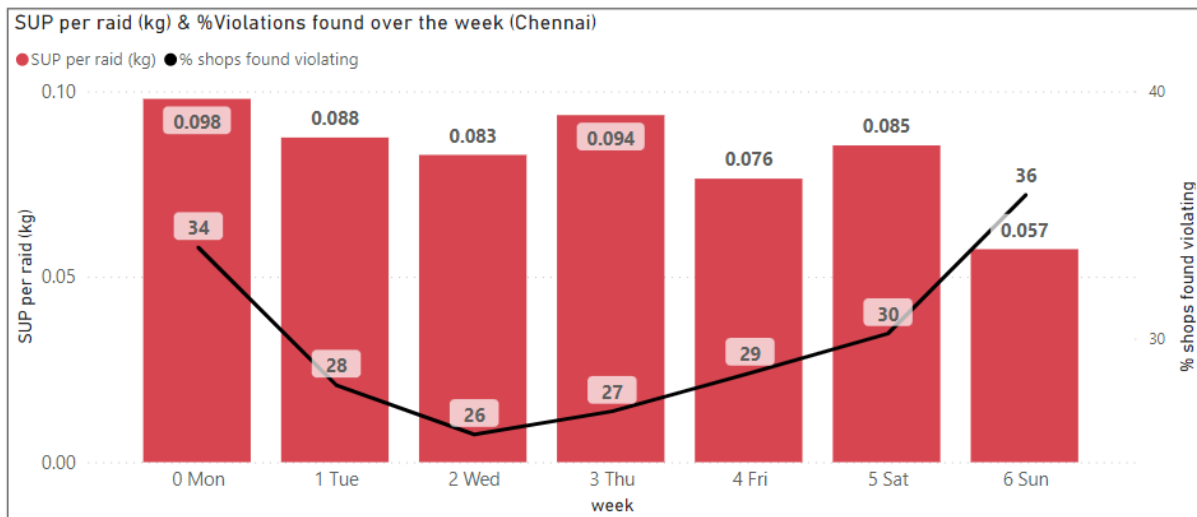


Figure 3-7: SUP per raid (kg) & %violations found over the week<sup>8</sup>

The figure above summarises the findings from the daily enforcement details shared by GCC for the months April 2023 and May 2023.

<sup>7</sup> Please note that the day-wise data is available only for the months of April and May 2023 for Chennai only. The observations are limited to the day-wise data available.

<sup>8</sup> The day-wise data provided in the graph is an average for the period of April and May 2023

## b. Compensation mechanism followed in Tamil Nadu

A brief comparison of the enforcement measures in terms of the fines recommended for the different violations as per the Environment Compensation rules and as per the SWM By-law (prepared by GDD) is as given in Table 12.

Table 12: Comparison of the fines levied in TN against the EC rules

S.No.	Name of the offence	Fines defined as per SWM by law (GCC) for first offence	Fines defined as per EC for first offence
1.	Storage, supply, transport, sale, and distribution of use and throwaway plastics	INR 25000 <sup>9</sup>	INR 2000
2.	Use and distribution of use and throwaway plastics in large commercial establishment like malls, textile shops and supermarkets	INR 10000 <sup>10</sup>	INR 2000
3.	Use and distribution of use and throwaway plastics in medium commercial establishment like grocery shops and pharmaceuticals	INR 1000 <sup>11</sup>	INR 2000
4.	Use and distribution of and throwaway plastics in small commercial vendors	INR 100 <sup>12</sup>	INR 200
5.	Open burning of plastic waste in public place	INR 1000- INR 2000 (Private enterprise/ Public place)	Individual- INR 5000 Bulk burning- INR 25000

It is observed from the above table that certain categories of violators are not covered. The action to be taken and the fines to be levied are not well defined in the SWM by-laws (GCC)<sup>13</sup>. Some of the violators who are missed in the by-laws include; individual consumers who use banned SUPs, importers and the waste generators. These are important stakeholders who are part of SUP product lifecycle. It is also observed that the fines levied on the large establishments are at par or higher than the rate recommended by EC, however, the fines levied on the medium and small entities is lesser than the recommended rates by EC. It is also observed that the fine levy is defined for individual SUP litterers/ waste generators in the EC, however, the same is not defined in the bylaws. In line with this, the individual consumers are not currently penalised for SUP usage/ littering by the ULBs.

## c. Spread of enforcement activities across urban and rural areas

It is inferred from the reporting structure that the main focus of the enforcement activities in the State is towards the urban areas. Even within the urban local bodies, the number of enforcement activities (raids) undertaken in the corporations is higher than those undertaken in the municipalities and town panchayats as seen in the Figure 3-8 below. However, the quantity of SUP seized in the municipalities is considerably high in proportion to

<sup>9</sup> For a wholesaler- [https://chennaicorporation.gov.in/images/swm\\_bye\\_laws.pdf](https://chennaicorporation.gov.in/images/swm_bye_laws.pdf) - verified by GCC official

<sup>10</sup> For a vendor with shop space above 1000 sq ft- [https://chennaicorporation.gov.in/images/swm\\_bye\\_laws.pdf](https://chennaicorporation.gov.in/images/swm_bye_laws.pdf) - verified by GCC official

<sup>11</sup> For a vendor with shop space between 100- 1000 sq ft- [https://chennaicorporation.gov.in/images/swm\\_bye\\_laws.pdf](https://chennaicorporation.gov.in/images/swm_bye_laws.pdf) - verified by GCC official

<sup>12</sup> For a vendor with shop space up to 100 sq ft- [https://chennaicorporation.gov.in/images/swm\\_bye\\_laws.pdf](https://chennaicorporation.gov.in/images/swm_bye_laws.pdf) - verified by GCC official

<sup>13</sup> The GCC SWM by laws was used as a sample of ULB by laws for the purpose of the study



the number of raids conducted, emphasising the probability of increased SUP use in municipalities in comparison to corporations. Hence, there seems to be a need to increase the frequency of raids conducted in the municipalities. It is also observed that there is lack of focus on providing directions regarding action to be taken towards the implementation of the SUP ban and the documentation of the action taken regarding the same in rural areas (gram panchayats) of the State.

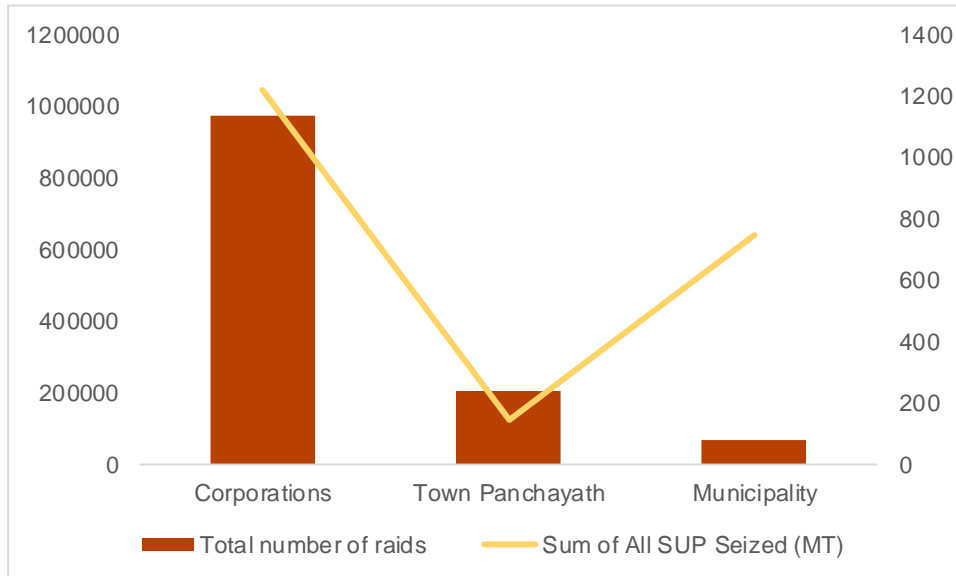


Figure 3-8: Total number of raids conducted and SUP seized since the implementation of SUP ban in TN from January 2019 to April 2023

#### d. Need for tracking repeat offenders

Repeat offenders/ violators are a major focus even in the CPCB regulations. The whole objective of enforcement is to create a permanent change amongst the vendors, shopkeepers, manufacturers etc. The repeat offenders are being identified by the respective officials who conduct the enforcement activities. The documentation of the offenders comprises of challans for fines levied, the number of violators identified during raids and number of closures undertaken. However, the documentation does not include details of violators which help the officials to plan and track repeat offenders. This is essential to keep track of violators and identify occurrences of repeat offences. This shall help evaluate the impact of enforcement activities and indicate any need for changes.

#### e. Communication mechanism with stakeholders

The enforcement system consisting of the ULB staff and the TNPCB staff, has a communication mechanism to convey the penalties and the action that will be taken in case of violations. There have been public announcements of the penalties that will be levied against the violators at important market-places in the city/ town where there are retail clusters. This helps in raising awareness among the shopkeepers prior to taking action against violators so that the lack of awareness of the ban or related provisions does not result in violation.

#### f. Enforcement for checking incoming SUPs from other States

In addition to the enforcement activities to control manufacturing or sale of banned SUPs in the state, it is also important to keep a check on the routes that might lead to transport of banned SUPs into the State. It is observed from the stakeholder discussions that the transport of these banned SUP items from other States/ UTs is a primary source of supply for sellers and vendors. To address the same, Tamil Nadu Pollution Control

Board (TNPCB) has initiated requests to the police and the other concerned authorities to have a check at important transit locations like check posts/ toll gates/ State borders etc. The same is subsequently planned to be extended to other modes of transport across the State.

### 3.7 Impact of enforcement activities

The positive impact of enforcement activities is indicated through decreased need of stringent enforcement initiatives. Analysis of the data on enforcement activities (raid) and the quantity of SUP seized for the financial year 2022- 23, indicates a slight decrease in SUP seized with increase in enforcement activities. Further, analysis of the data establishes a moderate negative correlation. This emphasises the positive impact of the stringent enforcement activities undertaken by the State, resulting in decreased use of banned SUPs. However, the analysis seems to indicate that there is scope for attaining better impact through outcome oriented and target based planning of enforcement activities. To attain better impact of the enforcement activities, it is also essential to combine the enforcement activities with other initiatives like awareness generation and promotion of alternatives to SUP.

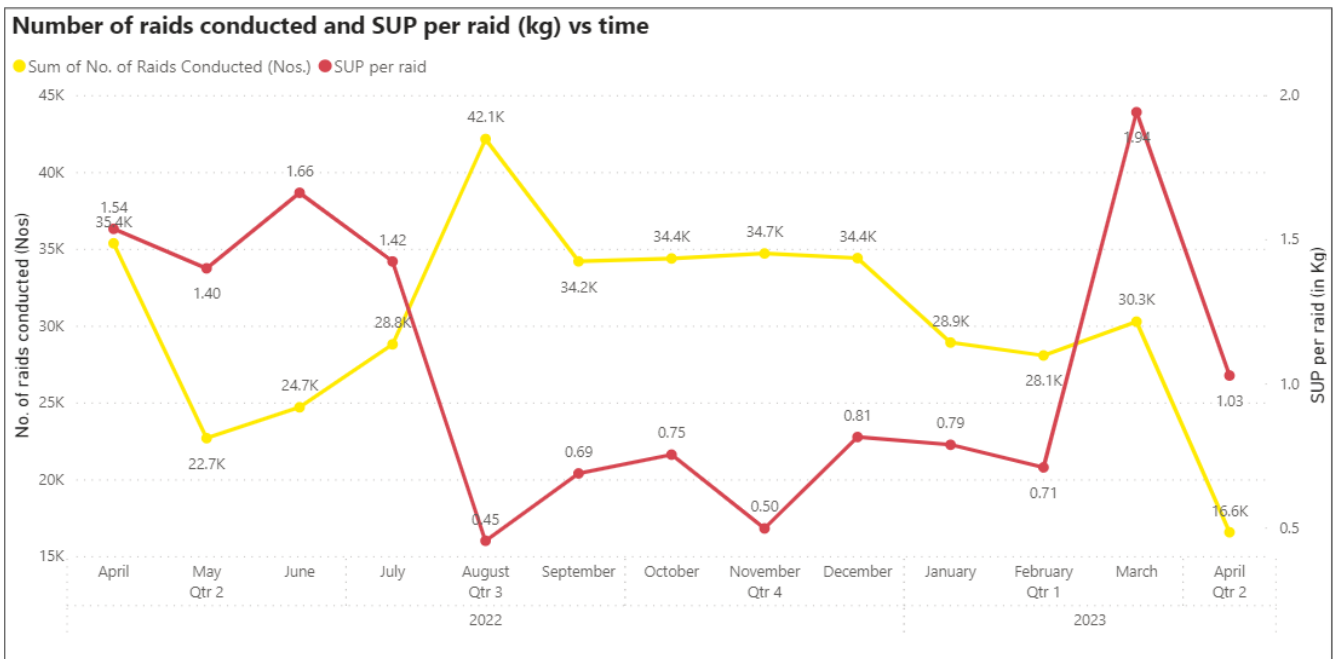


Figure 3-9: Number of raids conducted and SUP per raid from January 2019 to December 2023

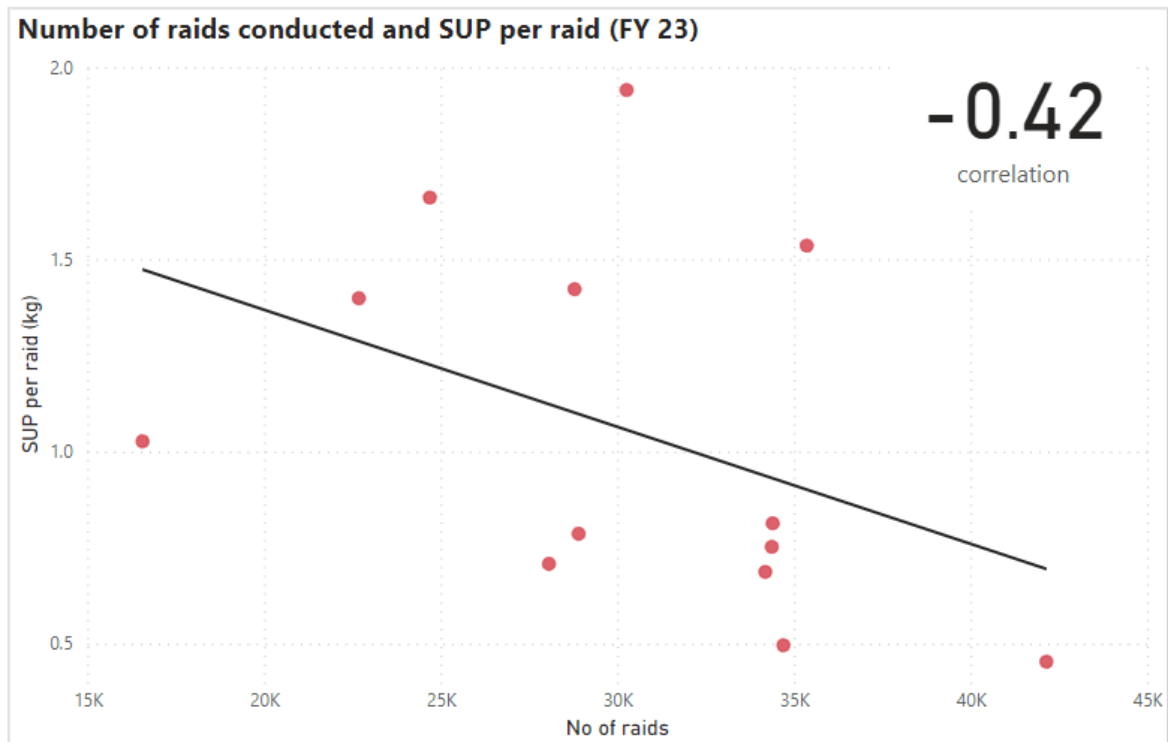


Figure 3-10: Correlation between number of raids and SUP per raid for the period January 2019 to December 2023

It is to be noted that the correlation between raids and SUP seized may be attributed to the following factors.

1. **Awareness and compliance:** It's possible that in districts with a higher number of raids, the general public and businesses might have become more aware and compliant with regulations on single-use plastics. As a result, there may be less single-use plastics available for seizure during raids.
2. **Illegal trade and distribution networks:** Districts with a positive correlation may indicate the presence of well-established illegal trade and distribution networks for single-use plastics. These networks might be more difficult to dismantle, requiring more targeted and strategic approaches beyond conducting raids.
3. **Enforcement strategies:** The effectiveness of enforcement strategies can vary across districts. Factors such as coordination among law enforcement agencies, intelligence gathering, and the ability to identify and target high-risk areas or businesses can influence the outcomes of raids.

The other factors which might impact will be nature of enforcement activities, the level of public awareness, the presence of alternative sustainable options.

## 3.8 Key observations in enforcement

### Establishing Hierarchy for Enforcement

- CPCB has a detailed list of requirements and processes to be undertaken towards violations of the PWM rules. At present it is observed that the standards for some enforcement activities is followed as per the Tamil Nadu Urban Local Bodies Act. It is observed that the enforcement activities like the seizure, closure of manufacturing units, disconnection of electricity etc. are done in line with the Environment Compensation rules, however, the fines levied for the medium and small enterprises are lesser than the rates recommended by environment Compensation rules.

- Undertaking enforcement activities to ensure adherence to the ban is a combined responsibility of TNPCB and the ULBs. The ULBs are responsible for conducting the enforcement activities amongst the retailers/ sellers/ vendors etc. while TNPCB is responsible for conducting the enforcement activities amongst the producers, manufacturers and other large entities.
- There is an observed need for dedicated capacity building and training sessions for the field inspection staff (TNPCB/ ULBs) regarding the PWM rules and provision, violations, enforcement activities to be undertaken for each violation type, methods of approaching different entities for enforcement, reporting of inspection reports on the CPCB app etc.

### **Mechanism for identifying violators of SUP ban**

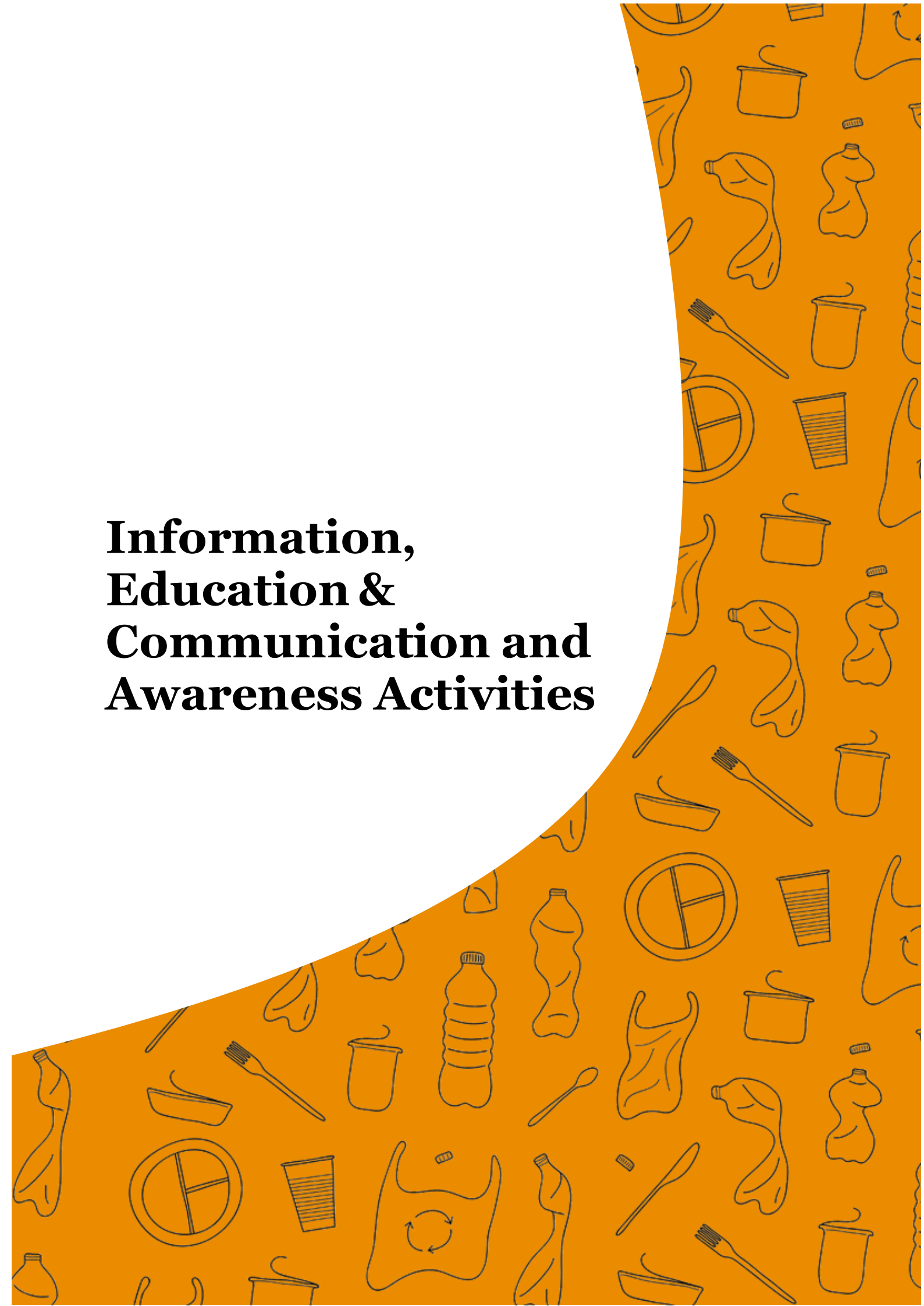
- The regularity and the frequency at which the enforcement activities are undertaken by the officials is commendable given the busy schedules of the District Environment Engineers (DEEs).
- It is necessary to have an outcome-oriented action plan for enforcement to be undertaken in each district, with a focus on the frequency of each type of enforcement activity and number of entities to be targeted in a month based on the type of entity (industry/ manufacturing/ retail) and its size.
- Following an outcome-oriented approach and monitoring of the enforcement activities should be followed with actions taken towards strengthening the enforcement plan based on the monthly or biannual observations on the effectiveness of these activities. At present, the monitoring system by TNPCB is regular and commendable however, there is limited use of this data to revise the action taken regarding the enforcement activities.
- CPCB has created an extensive monitoring mechanism to monitor the progress of States regarding the enforcement of the SUP ban on a daily and fortnightly basis. Though, TNPCB monitors the progress towards enforcement activities on a fortnightly basis, the format of monitoring could be more detailed as recommended by CPCB and the same shall be reported through the recommended portal on daily and fortnightly basis.
- Repeat offenders shall be targeted with a plan and a comprehensive record of offenders to monitor them. The penalty shall be levied as recommended by CPCB. The repeat offenders will have a 100% to 200% rise in the penalty levied on them and the same is targeted to deter repetition of violation.
- The rigorous enforcement undertaken especially in the market-place of cities is commendable. Stakeholder consultations reveal that the repeated raids have disincentivised shopkeepers from using banned SUPs. A little more diversity in the areas that are focused for undertaking enforcement activities might make the process even more effective across the State including rural areas rather than a city focused outcome. It is to be noted that PWM rules has listed the stakeholder wise responsibilities towards SUP ban including the enforcement activities to be undertaken by each of them. The enforcement plan shall consider these actions and responsibilities of stakeholders across regions/ institutions/ entities.

### **Measures and action taken against Violators**

- CPCB recommends the use of fines collected towards PWM practices in the respective regions. The funds that are collected through fines and levies may be utilised for the awareness generation activities related to SUP ban and use of eco-alternatives to SUP.
- Any action towards enforcement of a ban is a multi-stakeholder approach and requires consensus from all the stakeholders to bring out fruitful outcomes. Multi stakeholder meetings to be conducted at regular intervals to ensure coordination and timely completion of tasks towards activities like conduct of enforcement activities, uploading of inspection reports etc.

- There is some level of documentation maintained, like the challans collected during levy of fines, by the Board towards the enforcement activities undertaken by the ULBs. The database can have more focus on the violated entity, type of violation, repetition of violation if any etc. so that the entities may be monitored closely to observe their actions post the penalty, especially the repeat offenders.
- In addition to trainings, the field staff shall be provided support by the local police especially in areas where shopkeeper unions dominate the field staff and deny adherence to the penalties imposed against their violations.

# **Information, Education & Communication and Awareness Activities**



# 4 IEC and Awareness Activities

## 4.1 Introduction

The use of SUPs has brought significant convenience and cost-effectiveness in packaging, leading to a preference for the same. While certain types of SUPs have been banned, certain plastic items of the 'use and throw' category continue to be permitted. Furthermore, unauthorised production of many of the banned SUPs continues to occur. This could be attributed to the inadequate supply of equivalent alternatives and continuing supply of SUPs at lower costs than alternatives to plastic.

Under these circumstances, complete enforcement of the ban will be possible only through active engagement of the key stakeholders – through a people's initiative to avoid SUPs and use other eco-friendly packaging options. This shall help in cutting down the demand for SUPs in the long run and increasing willingness and hence demand for alternatives to plastic. IEC (Information, Education, and Communication) and awareness activities are, hence, crucial for the success of the SUP ban in Tamil Nadu. Effective IEC and awareness programs can help to change people's behavior and encourage them to reduce the use of SUPs. By educating the public about the negative impacts of SUPs, people can be motivated to take action to reduce their use of these products. Moreover, awareness campaigns can also help to promote sustainable alternatives to SUPs, such as cloth bags, paper bags, and reusable containers. By promoting these alternatives, people can be encouraged to adopt more sustainable practices in their daily lives.

In this regard, the GoTN through the local governments and various government departments has been organising IEC campaigns and programs to raise awareness and promote behavioral change related to the use of SUPs. This chapter covers the assessment of various IEC and awareness campaigns conducted considering the planning, implementation, impact, and monitoring aspects.

## 4.2 Key considerations for IEC plan

Before planning any IEC initiatives, the following aspects shall be given due consideration during planning.

### 1. Covering and understanding all stakeholders

The SUP ban affects and involves various stakeholders across categories, with each stakeholder being affected in different ways and at different levels. It has to be ensured that every stakeholder related to the successful implementation of the SUP ban is thoroughly covered, the level of impact on each category of stakeholder is fully understood, and the most important stakeholders are prioritised.

### 2. Curated IEC and BCC plans based on the stakeholders

Increasing magnitude of plastic use, especially use of the SUP has an impact that goes beyond easy to relate consequences such as clogging of drains or accumulation of waste in landfills. Plastic is polluting marine ecosystems, impacting domestic animals, and affecting the overall biodiversity. However, considering that the impact related to the latter is not commonly found in our daily lives, it is important to make the key waste generators aware of the consequences. Also, while communicating the impact, it is important to convey the relatable impact to each category of stakeholder or to make other larger impacts visible to the stakeholders through visual media to the extent possible. IEC campaigns for each target group shall differ as the action they are involved in the overall ecosystem may differ. A consumer may behave differently to SUPs than a shopkeeper. Similarly, youth or students may appreciate the understanding gained regarding impacts and maybe word of mouth about the messages. Moreover, every citizen falls into multiple target groups, and it may become essential that a single person is targeted as per



the various roles he plays. Hence, it is important to have programs in the IEC plan which are curated to each stakeholder.

### **3. Choosing the right medium of communication for the right target group**

This is perhaps one of the most important factors affecting the success of IEC and awareness campaigns. The choice of communication channel is key to its effectiveness. It is essential to choose the right mode that people relate to and are comfortable with as a medium to absorb information (e.g., audio/visual, etc.). As implementers, the priority should be given to the ease and convenience of the recipient of information. For example, while it has been an established method of information dissemination through the use of hoardings and public announcements for spreading public awareness, a study revealed that a very limited number of recipients actually identified 'hoardings' as a source of receiving information. Visual media, radio messages, and social media advertisements are gaining popularity as effective mediums of IEC delivery in recent times and could be used more.

### **4. Length and intensity of IEC programs**

IEC activities differ in their suitability for mass communication and duration of implementation. While some activities are more suited for ensuring a high coverage of target audience like awareness rallies, some are more suited to be one-on-one interactions like classroom awareness programs. Hence, due consideration should be given to assess the appropriate duration for each type of IEC activity and the number of people to be targeted for each category of activity.

### **5. Measuring of impact of the IEC programs**

With IEC programs having to be completed within an allocated budget, it is essential to know which programs have been effective and which have not. For this purpose, the impact of each IEC program should be measured comprehensively, including the types of target groups that were covered in each activity, so as to assess the coverage of IEC activities among all target groups.

### **6. Flexibility to realign**

Based on data captured from the IEC events conducted, it would be possible to measure the actual impact of the programs as compared to their planned impact. The IEC plan should be flexible enough to be realigned in order to reinforce the programs that are proving to be more effective and improve the programs which are turning out to be ineffective.

### **7. Understanding that key messages for IEC goes beyond the SUP ban**

IEC programs for SUP ban shall not solely cover topics related to ban, impact of plastic or alternative materials available. Rather, it shall focus on inculcating an overall behavior of conscious consumption of plastic. This calls for the need to educate and communicate to people characteristics of plastic as a material (ability to identify plastic and not-so-obvious plastic like polypropylene bags), recyclability of various kinds of plastic, recyclability-based segregation practices, means of plastic waste management and enabling circular economy as a whole.

### **8. Understanding alternative options and choices available**

IEC programs are carried out to pass information, educate people about the relevance of information and communicate the need for change. Right communication of the need and criticality of need shall bring in a behavioral change in stakeholders incrementally and continuously over a period of time. It is essential that stakeholders have various means to change without inconveniences at a point in time when behavioral changes are expected to convert to actions. In case of SUP, it is highly critical that alternative options to

banned SUP are made available at the required scale for IEC programs to achieve results in the form of action, else IEC may facilitate only redundant information with very minimal action.

### 4.3 Planning of IEC activities in Tamil Nadu

The TNPCB Corporate office relays broad instructions to the district offices about the IEC activities to be conducted, and the TNPCB district offices have the autonomy to conduct the activities in the manner they prefer. Apart from TNPCB, other departments have autonomy to conduct the IEC and awareness activities on their own under the Solid Waste Management Rules, 2016, and also conduct IEC activities in collaboration with the local TNPCB office.

This decentralised system, while allowing for flexibility, limits the potential of the TNPCB Corporate office to know and assess the kind of messaging that is being conveyed through the activities and the target audiences covered at the district-level IEC activities. While implementation of activities may be decentralised, the planning of IEC activities needs to have a centralised approach to ensure an incremental and scientific approach to awareness campaigns being instrumental in bringing behavioral change among people over a planned period of time.

#### State Action Plan

As discussed under section 2.2, the State action plan for implementation of SUP ban was notified in March 2022 during the first Special Task Force meeting. The plan discusses the following activities for creating awareness and educating people about the need for the ban and calling them to avoid the banned plastics and use identified alternatives to banned SUPs. The IEC activities discussed in the State Action Plan of Tamil Nadu are given in Table 13.

Table 13: IEC component of State Action Plan

S.no	Activities	Target details (Duration) <sup>14</sup>	Implementing agency & Partners
1	The Meendum Manjappai Campaign	Long	DoECCF, TNPCB, GIZ
2	People's campaign against throwaway plastics	Continuous	DoECCF and other nodal departments
3	District level awareness through use of short film, social media outreach and other effective ways of outreach	Continuous	DoECCF, TNPCB, GIZ
4	Mass Awareness Campaigns in the State to attract the attention of all categories of target population using innovative publicity and behavior change strategies	Continuous	DoECCF, TNPCB, GIZ

<sup>14</sup> Short (6 months), Medium (9 months), Long (>9 months) - as per State Action Plan

S.no	Activities	Target details (Duration) <sup>14</sup>	Implementing agency & Partners
5	Development of a public movement by engaging with women & youth organisations such as SHG, NCC, NSS, NYK and school students	Continuous	DoECCF, SE, GIZ
6	Competitions and hackathons organised for school and college students	Medium	GIZ, TNPCB, TNSCSTE, Startup TN

While the State action plan provided a broad direction for IEC programs by naming some of the means of creating awareness and covering specific programs launched by the government, a further detailed plan, or guidelines to districts/ other implementation agencies/ stakeholders for target-specific IEC and awareness creation would be critical in ensuring an outcome-oriented approach to IEC and awareness creation. As can be seen from the above table, the first four activities refer broadly to carrying out awareness campaigns and may not be distinguishable. The specificity at the planning stage shall aid in not only implementation but also monitoring and evaluation of the action taken.

#### 4.4 Status of Action Taken for IEC and awareness creation

Based on the action plan and as per instruction of the Government and TNPCB, numerous activities have been carried out by various local bodies and other stakeholders. Table 14 provides the status of action taken against the various requirements for IEC and awareness creation.

Table 14: Status of IEC component of State Action Plan

S.no	Activities	Status
1	The Meendum Manjappai Campaign	The Meendum Manjappai Campaign was launched in December 2021. The campaign was launched with an intention to make the shift to alternatives sources of plastic a 'People's movement'. The specific activities carried out under the campaign have been detailed after the table.
2	People's campaign against throwaway plastics	
3	District level awareness through use of short film, social media outreach and other effective ways of outreach	The district-level awareness campaigns have been actively conducted through district offices and ULBs. There are a total of 1,44,548 IEC campaigns conducted between January 2019 to May 2023.
4	Mass Awareness Campaigns in the State to attract the attention of all categories of target population using innovative publicity and behavior change strategies	
5	Development of a public movement by engaging with women & youth organisations such as SHG, NCC, NSS, NYK and school students	Initiatives have been undertaken to involve school children, college-going students, commercial establishments, etc. The Manjappai awards have also been announced to encourage schools, colleges, and commercial establishments to implement the SUP ban in their premises and undertake innovative initiatives to encourage use of alternatives among the public.

S.no	Activities	Status
		<p>Under the Circular Economy Solutions (CES) project, eight Manjappai vending machines are being supported by SHGs and these will be placed in different locations in Chennai under the guidance of DoEF&amp;CC and TNPCB.</p> <p>School students from the National Green Corps (NGC) served as volunteers for the G20 mega beach clean-up drive in May 2023.</p>
6	Competitions and hackathons organised for school and college students	<p>Competitions such as drama competitions for school children and short film contests for the general public have been conducted across districts.</p> <p>Under the CES project, an awareness campaign on SUP ban was conducted in Chennai at various locations and College students participated in the essay and drawing competitions.</p> <p>Under the CES project, four beach clean-up events were organised in Chennai, Cuddalore, Nagapattinam and Ramnad districts. School and College students have participated in all events. Awareness sessions on Plastic waste management and prevention of marine litter were organised.</p> <p>The Enviro-solvers Hackathon was conducted in June 2023 with one of the themes being reduction of SUP usage.</p>

Under the broad activities as provided in the State Level Action Plan, several campaigns and programs have been implemented in Tamil Nadu to create awareness on the need for refraining from SUPs. A brief about the various programs carried out till date are given below. Some of these initiatives include.

### 1. Meendum Manjappai campaign activities

The GoTN launched the Meendum Manjappai campaign in December 2021 to create awareness among the people and promote alternatives to plastic, alongside enforcement of ban on SUPs. Tamil Nadu Pollution Control Board and its divisional offices have been proactive in creating awareness among public on avoidance of SUP and use of Alternatives to SUP, accordingly the districts have conducted 65,917 awareness activities for general public and have distributed around 3.5 lakh Manjappai carry bags through awareness campaigns as of June 2023.

#### Case Study: Umuganda community meeting tradition in Rwanda

The use of the age-old tradition of carrying Manjappais for all purposes is an effective strategy as it taps into the idea that people have been using sustainable methods for a long while the use of SUPs is a recent phenomenon from which we can move back. This is similar to the successful use of the Umuganda community meeting tradition in Rwanda to promote the ill effects of plastic carry bags. Rwanda was one of the first countries to successfully implement a stringent ban on plastic bags and in the long run, citizens became used to the new regulation and Kigali, the capital of Rwanda, was nominated by UN Habitat in 2008 as the cleanest city in Africa.

Various programs were conducted under this campaign such as,

- Display of posters in predominant locations to spread the details of banned SUP items and use of eco alternative materials like government offices and metro stations
- Display of banners, including metal boards at National Highway Authority of India tollbooths

- Distribution of pamphlets
- Messages through autos
- Pledge-taking at schools, colleges, and industries
- Awareness rallies
- Marathons
- Drawing, essay, and speech competitions
- Publicity through print and TV media

#### **Case Study: “I’m making a difference one bag at a time” campaign in Antigua and Barbuda**

In Antigua and Barbuda, an awareness-raising campaign titled “I’m making a difference one bag at a time” included **frequent television short clips** by the Minister of Health and the Environment **providing information on the progress of the ban** and feedback from stakeholders. A **catchy jingle was created** to encourage the adoption of long-lasting bags in order to foster a cleaner and more sustainable environment. During the initial year, the prohibition resulted in a 15.1% reduction in plastic waste deposited in landfills in Antigua and Barbuda, while also laying the groundwork for further measures aimed at minimizing plastic usage, emphasizing the importance of publicity through TV media.

## **2. Launch of Manjappai vending machines**

The Manjappai Vending Machines were launched to improve access to alternatives to plastics as a preliminary step. The installation of cloth bag vending machines has increased the availability of alternatives to plastics in strategic locations such as marketplaces, shopping malls, Government offices, etc., thus assisting in a behavioral shift to the use of cloth bags. As of June 2023, 62 Manjappai vending machines are installed at strategic locations across the State, including prominent places like the Madras High Court, Madurai bench of Madras High Court, Koyambedu marketplace and nearly 46,362 Manjappais have been collected by general public through the vending machines installed at various location. The vending machines at various locations were inaugurated by dignitaries as public events, which helped raise a good amount of publicity for the Manjappai campaign.

## **3. National Expo on eco alternatives to SUPs and Start-up Conference**

To make the general public aware of the alternatives available and facilitate the manufacturers, suppliers, and consumers the ease of access to eco alternatives the National Expo on Eco alternatives was held on 26<sup>th</sup> and 27<sup>th</sup> September 2022. A total of 173 exhibitors from all over India participated in the expo (Eco-alternative manufacturers and financial institutions). The target group was sustainability-conscious consumers and school students, who turned out in large numbers, while the feedback was received from all the participants in which they appreciated the exposure, network, and buyers they received through participating in the expo.

## **4. Animated awareness videos**

Animated awareness videos on the ill effects of SUPs and the promotion of eco-alternatives targeting the school-going age group have been screened at schools and uploaded to the TNPCB YouTube channel and website since January 2023. The videos aim to engage the students while making them aware of the seriousness of the problem of using SUPs.

## 5. Mega beach-clean-up drive

Under the LiFE Mission, mega-beach clean-up drives were carried out in 3 beaches in Tamil Nadu to promote consciousness among the general public about problem of beach litter. Dignitaries like the Minister for Environment graced the event, which helped gain publicity for the event in multiple newspapers, helping to pass on the awareness messages. School students served as volunteers for the program, which helped involve them actively in tackling the problem of beach litter and educating them about the enduring impacts of plastic on marine ecosystem.

## 6. Manjappai Awards

The GoTN launched the Manjappai Awards to reward 3 best schools, 3 best colleges and 3 best commercial establishments in their efforts to avoid SUPs within their premises and to instill a behavioral change by motivating the intended participants to transition to alternative materials to plastic. The efforts were evaluated for a period of one year from 1 April 2022 to 31 March 2023 and the awards were presented on World Environment Day 2023. The evaluation was based on around 10-15 well-defined criteria including reduction in use of SUPs, 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. Competing on these parameters would help the participants to realise the need for and importance of each aspect considered for the evaluation.

## 7. Plastic-free zones

The Government is taking steps to make prominent places with high footfall like the Vellore fort, Madras High Court, and Tamil Nadu Secretariat as plastic-free zones, where the use of single-use plastics is prohibited. Such initiatives while helping to reduce the plastic in use and circulation, shall also instill a behavioral change.

## 8. Setting up stalls at exhibitions

Stalls promoting eco-alternative products and Manjappai vending machines were set up at various exhibitions like the Chennai Food Mela, India Tourism and Trade Fair, Rotary Club Sustainability and Wellness Expo, India International EV show, etc. across districts. The placing of stalls at events with high footfall like these helps raise awareness and visibility about the eco-friendly alternatives available to commonly used SUP items.

## 9. Street plays and cultural programs

Street plays, folk dances and cultural programs were carried out by professional drama troupes at strategic locations like railway stations, bus stands, and markets, which helped engage the general public and create a long-lasting impression in their minds about the seriousness of the issue of SUP usage.

## 4.5 Assessment of action taken

As discussed previously, several factors have to be considered when organizing IEC (Information, Education and Communication) – BCC (Behavioral Change Communication) activities and programs such as the key messages, efficacy to grab attention, efficacy of medium for the audience, and ability to instill behavioral change. The various IEC-BCC initiatives taken in Tamil Nadu have been assessed based on these parameters in Table 15. “Efficacy to grab attention” assesses how visually and aurally engaging the activity is to the audience, “efficacy of medium for the audience” assesses how appropriate the medium of the activity is for the target groups considering their age group, gender, location, etc., and “ability to instill behavioral change” assesses how participatory in nature the activity is and how actively it involves the audience.

Table 15: Assessment of IEC activities

Activity	Audience	Key messages	Efficacy to grab attention	Efficacy of medium for the audience <sup>15</sup>	Ability to instill behavioral change	Remarks
Posters/banners and distribution of pamphlets in strategic locations like government offices, railway stations, hospitals, etc.	General Consumers, Local Vendors, Passengers and Travelers, Government Officials	The 28 Items covered in the ban	Low	Medium	Low	Contextualizing the poster based on location of display and targeted audience would improve interest and recollection of the message by target audience
Pledge-taking at schools, colleges, and industries	Students	Avoiding/reducing the use of SUPs, protecting the environment	High	Medium	Medium	Pledges, alongside observation of the pledges (in practice) at schools/colleges, would improve impact

<sup>15</sup> ability to arouse interest to read or listen further



Activity	Audience	Key messages	Efficacy to grab attention	Efficacy of medium for the audience <sup>15</sup>	Ability to instill behavioral change	Remarks
Messages through autos	Households	The ban on specific SUP items, Avoiding/reducing the use of SUPs, protecting the environment	High	High	Medium	Repeated in-person interactions understanding the nature of households would improve impact.  Messages in moving autos may not provide a listener chance to listen to the entire message
Awareness rallies	Households, Students, Commuters	The ban on specific SUP items	High	Medium	Medium	The activity is effective in capturing the attention of audience due to slogans being called out and placards being displayed.
Marathons	Students, Households	Importance of avoiding SUPs and using Manjappais	Medium	Medium	Medium	The activity does not grab attention unless it is advertised well to the public. Otherwise, it is limited to the people participating.
Drawing, essay, and speech competitions	Students	Ill-effects of SUPs and promotion of eco-	Medium	High	High	Display of selected drawings at key locations as done

Activity	Audience	Key messages	Efficacy to grab attention	Efficacy of medium for the audience <sup>15</sup>	Ability to instill behavioral change	Remarks
		alternatives				during the beach clean-up and using drawings for advertising and awareness generation, would help increase involvement of audience
Street plays	General Public, Travelers	The ill-effects of SUPs on the environment, and seriousness of the problem	High	Medium	Medium	The street plays have to be announced in advance so that it gets a bigger audience
Animated awareness videos	Students	The ill-effects of SUPs on the environment and animals	High	High	Medium	Different videos could be made for different target age groups. Currently, the videos are screened generally for primary school students
Mega beach-clean-up drive	School/College Students, Visitors	Impact of plastic on marine eco-system	High	High	High	The activity involves the active involvement of the audience and requires them to exhibit behavioural change as part of the activity.

Activity	Audience	Key messages	Efficacy to grab attention	Efficacy of medium for the audience <sup>15</sup>	Ability to instill behavioral change	Remarks
Meendum Manjappai Awards	Students, Commercial Establishments	Importance of avoidance of SUPs and use of eco-alternatives	Medium	Medium	Medium	The program had a limited audience. Wider publicity is required to make it an effective program.
Plastic-free zones	General Public	Importance of avoidance of SUPs and use of eco-alternatives	Medium	Medium	Medium	Primarily an enforcement measure which shall assist in instilling a behavioral change
National Expo on eco alternatives to SUPs and Start-up Conference	Entrepreneurs, Brand Owners (BOs), General Consumers	Importance of use of eco-alternatives	High	High	Medium	Primarily a means of promoting alternatives, which would also help in informing about the available alternatives
Setting up eco-alternative stalls at Exhibitions	Sustainability Conscious General Public, Students	Importance of use of eco-alternatives	High	High	Medium	Primarily a means of promoting alternatives, which would also help in informing about the available alternatives
Launch of Manjappai vending machines	General Public	Importance of use of cloth bags	Medium	Medium	Low	This is not primarily for IEC activities.

Activity	Audience	Key messages	Efficacy to grab attention	Efficacy of medium for the audience <sup>15</sup>	Ability to instill behavioral change	Remarks
						Nevertheless, information on such machines or seeing such machines could help in creating awareness to some extent
Publicity through print and electronic media about Meendum Manjappai campaign	Households	Events and initiatives conducted by the government for reducing the usage of SUPs	Medium	High	Low	Increased the visibility of the Meendum Manjappai campaign among the citizens
Manjappai Express	General Public especially Students	Impact of SUPs on the environment and animals, importance of using eco-alternatives	High	High	Low	It is a high-budget event, however the ability to actively instill behavioral change is doubtful.
Social Media Campaigns	Youngsters And Middle Aged	Occasions like World Environment Day and government functions related to plastic pollution	High	High	Medium	The ability to instill behavioral change depends on the content. Challenges on social media could help in instilling behavioral changes.

### 4.5.1 Coverage of target groups

It is important to analyse whether every target group has been covered by campaigns and activities specifically catered towards them. Various factors regarding target groups may be considered when choosing the mode of IEC delivery such as.

- Target group
- Age of target group
- Gender of target group
- Culture and beliefs of society
- Occupation pattern of citizens
- Existing awareness levels
- Spending capacities of target groups

The coverage of the target groups so far has been listed in Table 16 and depicted in the figure that follows.

Table 16: Coverage of Target groups

Category	Coverage	Number of types of activities undertaken	Activity/Campaign in which target group has been catered to
Local Vendors	X	0	-
Commercial Establishments like Malls, Shopping Complexes	✓	1	Manjappai awards
Students (School and College)	✓	4	Drawing Competitions, Essay Competitions, Speech Competitions, Animated Awareness Videos
Office Goers	✓	2	Pledges at Industries, Posters at Industries
General Consumers	✓	2	Setting Up Eco-Alternative Stalls at Exhibitions, Display of Posters of Banned Items at Prominent Places
Resident's Associations	X	0	-
Event Organisers	X	0	-
Manufacturers of SUP	X	0	-
Manufacturers of Alternatives	✓	1	National Expo
Government Officials (Implementers)	✓	1	Posters in Government Offices
Passengers or Travelers	✓	2	Posters in Metro Stations, Placards in Toll Booths

Category	Coverage	Number of types of activities undertaken	Activity/Campaign in which target group has been catered to
BOs	✓	1	National Expo
Households	✓	3	Rallies, Announcements through Autos, Street Plays
Catering and Hotel Associations (Food Packaging)	X	0	-

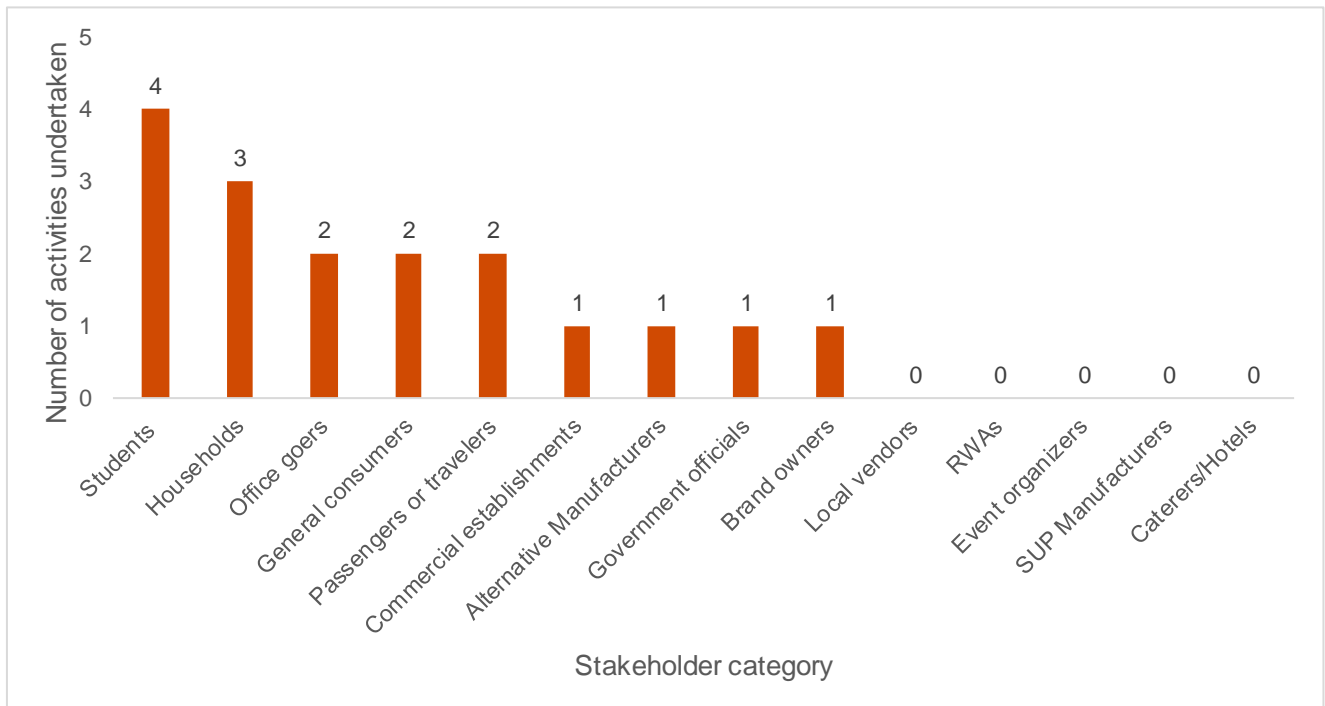


Figure 4-1: Number of activities specifically catered to target groups

## 4.5.2 Coverage of IEC activities in urban and local areas

Tamil Nadu has 697 Urban local bodies which includes 21 municipal corporations, 140 municipalities and 536 Town Panchayats. As per the reporting of IEC events by the urban local bodies to TNPCB, a total of 1,24,000 events have been carried out in urban local bodies. Out of these, Salem has reported maximum number of IEC events totaling to 10,699 activities since 2019. However, details of the kinds of activities undertaken are not available. District-wise details of IEC events carried out are presented as an annexure to this report. The details of IEC activities carried out in rural areas have not been captured so far. This indicates inadequate focus for implementation of SUP ban in these areas. While commercial activities may be higher in urban areas than rural, considering the lower levels of access to education and information in villages, there needs to be an increased focus on IEC-BCC campaigns in villages. Moreover, rural areas have been documented to have less robust waste management systems, and the plastic when dumped reaches agricultural fields and small water bodies, causing a huge impact on the environment<sup>16</sup>. These factors put rural areas at higher risk of plastic pollution, and hence it is imperative that the citizens in rural areas are clearly made aware of the ill effects of SUPs.

## 4.6 Social Media Outreach/Campaigning

There are dedicated pages for TNPCB on Instagram, Twitter and Facebook, and the pages have a following of 419, 103 and 221 followers respectively as of June 2023. The Instagram, Facebook and Twitter pages mostly post information related to the air quality index, while rarely posting government announcements or functions related to plastic pollution. There is also a YouTube channel with 132 subscribers, where mainly the animated awareness videos are posted, with the most popular video having 160 views as of June 2023.

There are dedicated pages on all three platforms for the Meendum Manjappai campaign as well which is run by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). They mostly post infographics and behavioral change tips to motivate citizens to refrain from use of SUPs. The pattern of the social media posts is observed to remain same across the three platforms. The table below covers an analysis of the posts in the social media pages of TNPCB and the Meendum Manjappai campaign.

Table 17: Analysis of TNPCB social media pages

Number of IEC- BCC posts	Twitter	Instagram	Facebook
Frequency of posts	2-3 per week		
Key messages	About occasions like World Environment Day and government functions related to plastic pollution		
Relevance of messages with respect to creating awareness and instilling behavioral change	Moderate		

Table 18: Analysis of Meendum Manjappai campaign social media pages

Number of IEC- BCC posts	Twitter	Instagram	Facebook
Frequency of posts	3-6 per week		
Key messages	BCC, occasions related to plastic awareness like World Environment Day,		

<sup>16</sup> <https://www.gaonconnection.com/lead-stories/plastic-waste-rural-india-pollution-management-soil-fertility-farmers-health-water-ponds-recycle-data-cpcb-toxic-51474>



	government functions related to plastic pollution
Relevance of messages with respect to creating awareness and instilling behavioral change	High

Awareness creation and behavioral change campaigns through social media, especially Instagram, are on the rise and increasing number of States are using social media platforms for these. Some of the key States using social media platforms for IEC-BCC activities related to plastic waste management and SUP ban are Himachal Pradesh, Maharashtra, and Karnataka. As can be inferred from Table 19, the TNPCB and Meendum Manjappai Instagram pages have a lower follower count compared to these States, and hence an emphasis may be given on promoting the pages so as to increase its spread, especially youth and students.

Table 19: Follower count of Instagram pages of different SPCBs as of June 2023

S.no	SPCBs	Number of followers for Instagram page
1	Himachal Pradesh	2189
2	Karnataka	1633
3	Maharashtra	1446
4	Tamil Nadu	424
5	Assam	399
6	Meendum Manjappai Page	366
7	West Bengal	206

In addition to the social media pages, TNPCB recently developed a website and app dedicated to the Meendum Manjappai campaign. The Meendum Manjappai website is designed in such a way that the public can discover data easily from statistics related to SUP enforcement raids, news, publications, government directions and orders, videos to interactive tools, to keep the public engaged and informed.

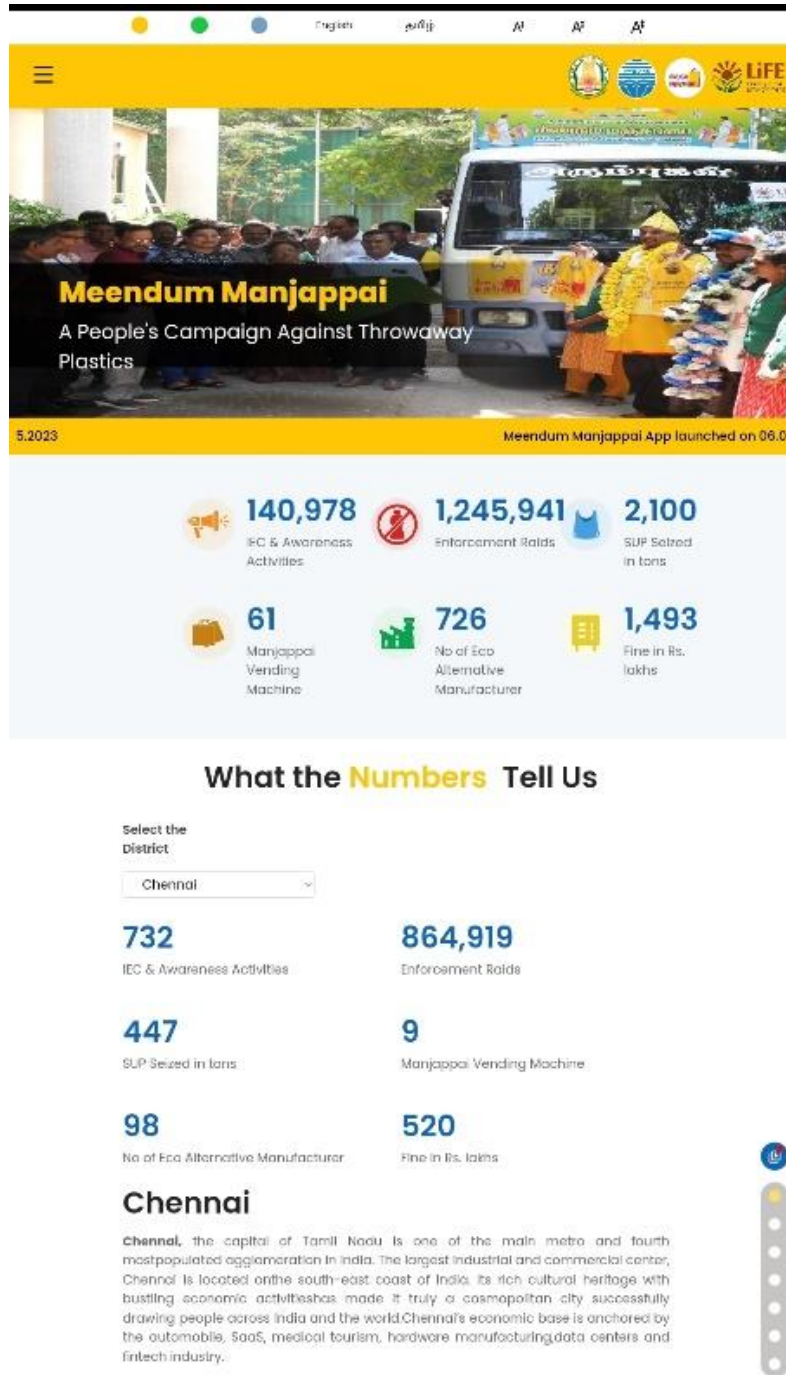


Figure 4-2: Meendum Manjappai website

The Meendum Manjappai app is designed with the aim of enhancing the availability of eco-alternatives to the public and helping them shift to an environment-friendly lifestyle. It consists of a bundle of features which include a locator and navigator for finding Manjappai Vending Machines and Reverse Vending Machines, eco-alternative product manufacturers details, latest news updates related to SUPs, upcoming events, and announcements for the public to take part in, and a space for registering eco-alternative product vendors to register themselves and the public to file complaints against use of SUPs.

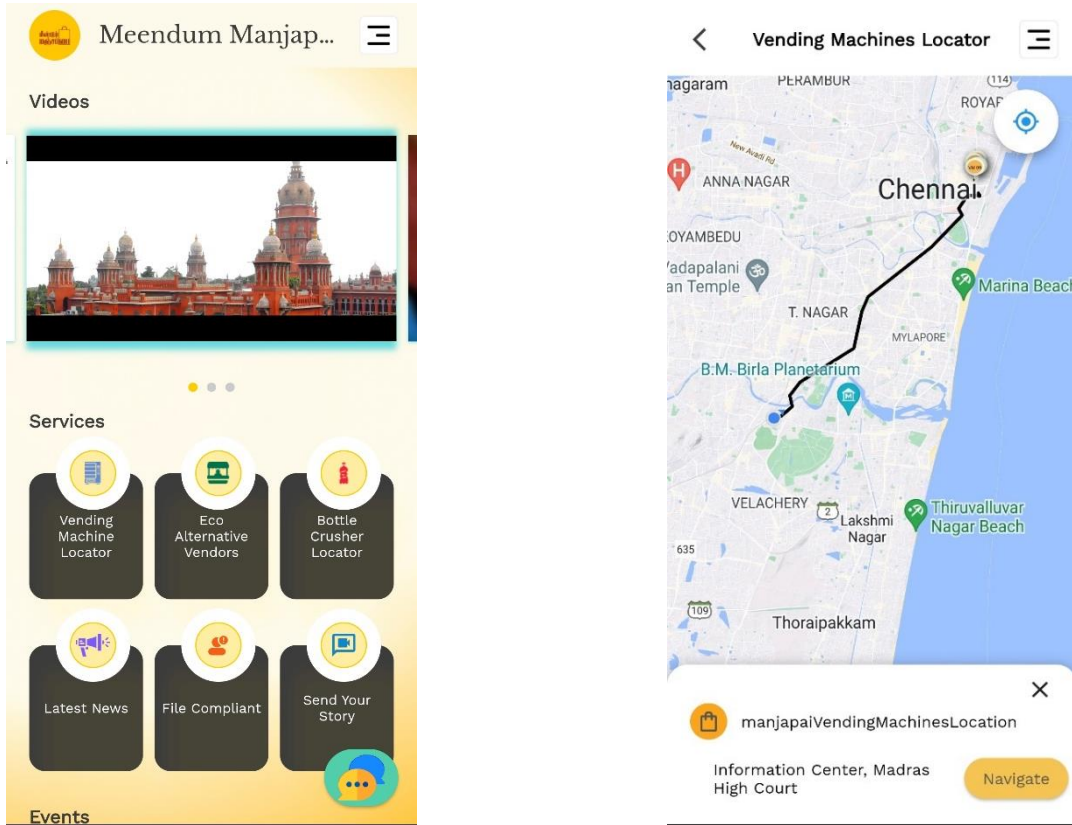


Figure 4-3: Meendum Manjappai app

## 4.7 Monitoring and Evaluation

### 4.7.1 Reporting of IEC events

As part of the CPCB requirements and internal reporting requirements to TNPCB (by districts and departments), the only detail related to IEC – BCC which is being reported to TNPCB is the number of IEC activities conducted by each TNPCB office and each ULB. The data collected is used by TNPCB for reporting to CPCB. It is observed that data collection could be more elaborate for activities related to IEC – BCC to cover details such as,

- Date of the event
- Category of the event
- Brief description of IEC activity
- Duration of the event
- No. of people attended/impacted
- No. of Manjappai distributed
- Details of Target audience like age, gender, occupation, etc.
- Pamphlets distributed (on SUP and Manjappai awareness)
- Supporting documents for the activity

Considering this requirement, TNPCB is standardising data collection, and templates have been made for each department for reporting, and a dashboard would be prepared to display the data.

### 4.7.2 Impact of IEC and BCC activities

Impact or outcome of IEC BCC activities could be measured by evaluating the implementation level of ban i.e., reduced SUPs in circulation. This outcome could be measured through various parameters as listed below.

1. Quantity of SUPs seized during certain number of inspections
2. Changes in plastic litter (especially SUPs) collected since IEC activities have been conducted
3. The change in demand for eco-alternatives or increase in sales of eco-alternatives
4. Number of schools and colleges have become plastic-free
5. Difference in number of manufacturers producing alternatives to plastic, percentage who shifted
6. Change in number of apartments/societies which have waste segregation

In this context it is vital to establish the baseline for some or all of these aspect so as to be able to monitor and evaluate the impact.

### 4.7.3 Evaluation of current data

Towards assessing the impact of IEC/BCC campaigns, an analysis of the number of activities conducted vis-à-vis quantity of plastic seized during raids (based on the data available) was carried out and the findings are as follows.

- There is a moderate negative correlation between the number of IEC programs carried out by the ULBs and the amount of plastic seized per raid, which shows that the more IEC activities have been conducted in a locality, the lesser the quantity of plastic seized in the raids. However, it is to be noted that the benefits of IEC and awareness programs are usually more prominently seen in the long term.

- The top 5 districts in terms of IEC activities conducted have been Coimbatore, Ranipet, Salem, Thirupathur, and Thiruvallur. The trend in IEC activities conducted each month versus the trend in the quantity of SUP seized per raid in these districts has been charted below for the period from April 2022 to April 2023.

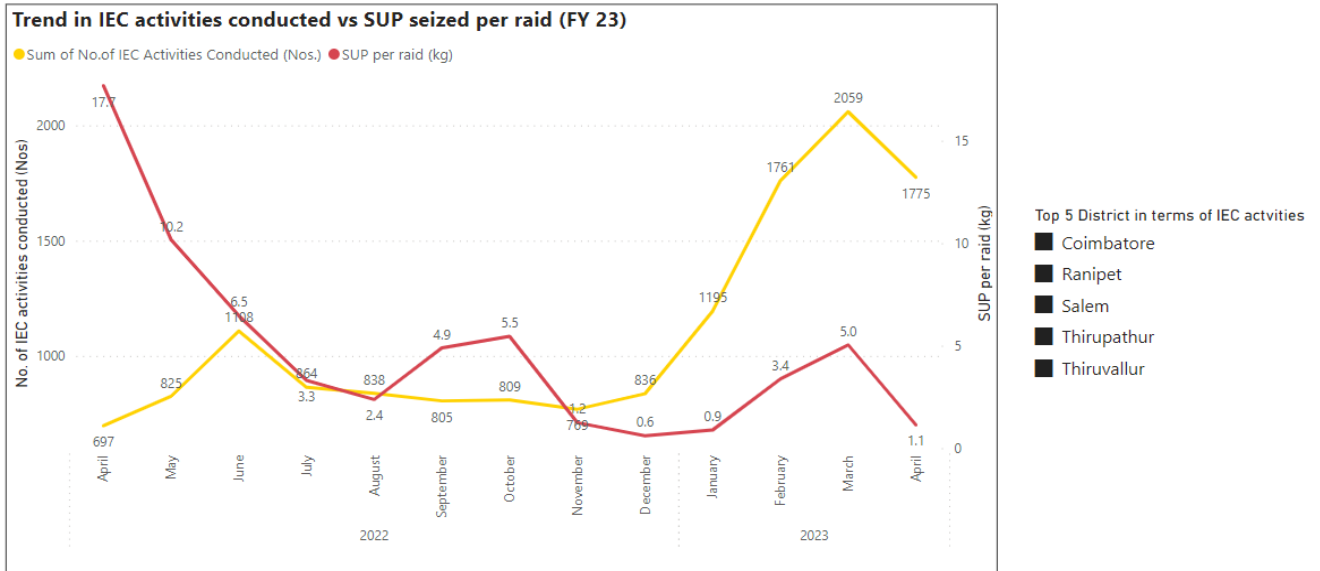


Figure 4-4: Trend in IEC activities vs quantity of SUP seized per raid

- In this period, average plastic seized per raid in the top five districts have reduced from 17.7 kg per raid to 1.1 kg per raid, which is a decrease of 94%, while the number of IEC activities conducted per month in the districts have increased from 697 to 1775, which is an increase of 154%. While there could be various reasons leading to the decrease in SUP seized, including increase in enforcement, it could be assumed that increased IEC – BCC activities could have had a positive impact leading to reduced circulation of SUPs in these areas.

#### 4.7.4 Findings from representative survey

A survey to understand the level of awareness and people’s perception to use of alternatives to SUPs was prepared and circulated among people residing in Tamil Nadu. According to the survey, the following observations could be made<sup>17</sup>.

- 93% of citizens are aware of a ban on SUPs. However, from the list of SUP items, only 19% of citizens could correctly identify which items were banned. This indicates that while most citizens are aware of the ban on SUPs in general, they are not very aware of the specific items that have been banned. Selective ban on certain SUPs and not all kinds of throw-away plastics, may be causing confusion among public, impairing the objective of the awareness campaigns. A larger focus on avoiding all kinds of SUPs, having better plastic waste segregation, and returning to sustainable practices in general may help in creating a behavioral change aligned with the overall expected outcome of the ban.

<sup>17</sup> It is to be noted that the survey was conducted among 46 respondents from across the State with the intention of drawing preliminary observations, and the findings are indicative and not conclusive in nature. Further baseline studies could be conducted by TNPCB with an agency to measure the levels of awareness among the citizens.

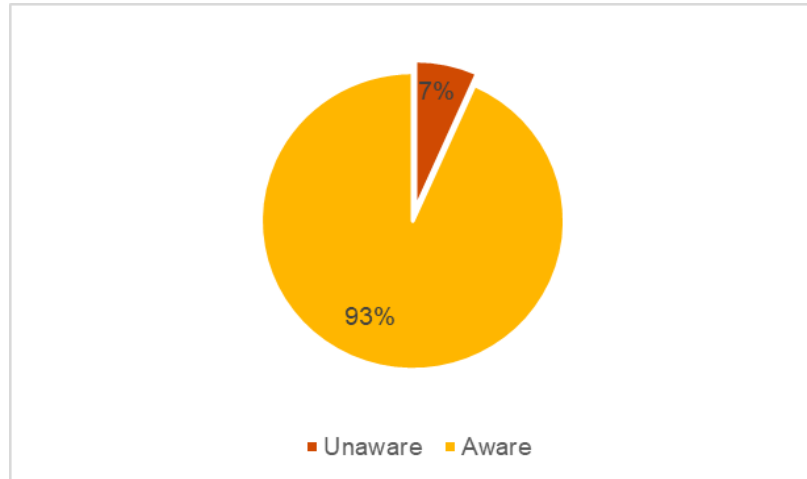


Figure 4-5: % of people aware of the ban on SUPs

- 73% of citizens are aware of the Meendum Manjappai campaign. This indicates that bringing all activities related to the SUP ban implementation under a broader program name has helped improve its reach among general public. However, it is to be noted that all people who are aware of a ban on SUPs are not aware of Meendum Manjappai campaign.

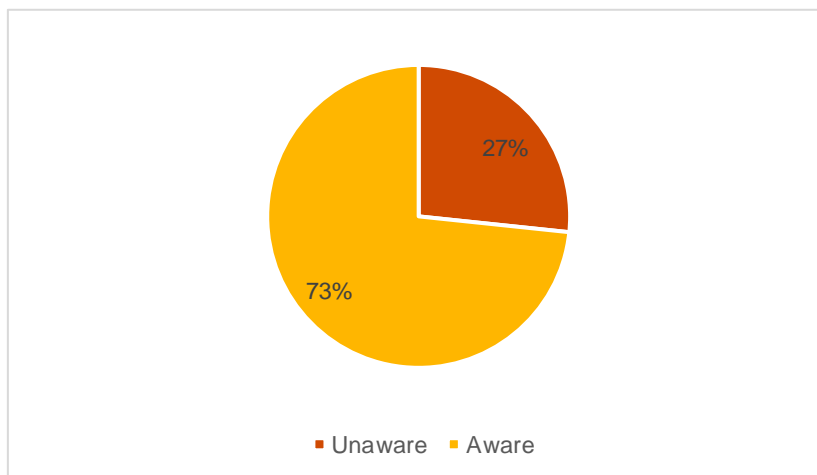


Figure 4-6: % of people aware of the Meendum Manjappai Awareness Campaign

- The receptance of awareness campaigns among men and women is largely observed to be similar. This could be so since specific gender-based targeting may not have been followed. However, considering that choice of purchase of plastic items could be highly driven by household-level practices<sup>18</sup>, it may be advantageous to target relatively more women audience in such campaigns.

<sup>18</sup> <https://www.forbes.com/sites/bridgetbrennan/2015/01/21/top-10-things-everyone-should-know-about-women-consumers/?sh=339cbdf36a8b>

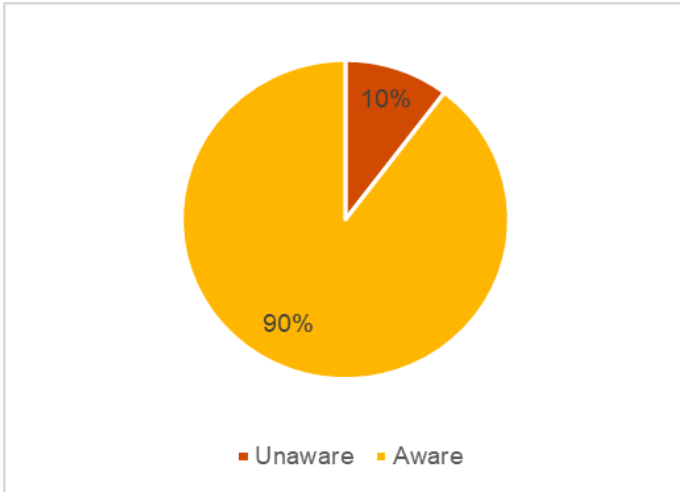


Figure 4-7: % of men aware of the ban on SUPs

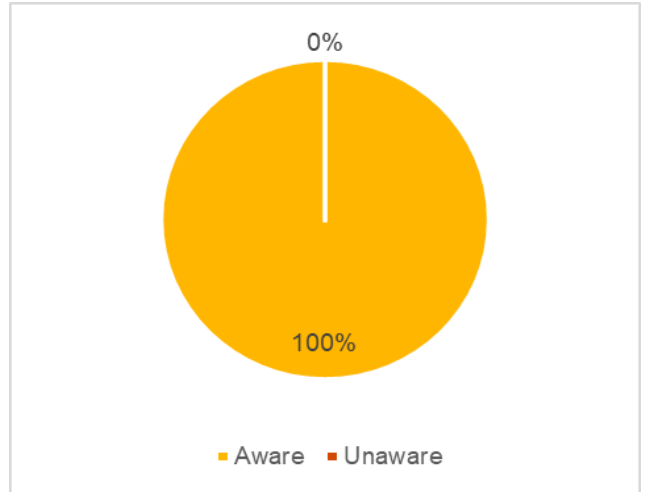


Figure 4-8: % of women aware of the ban on SUPs

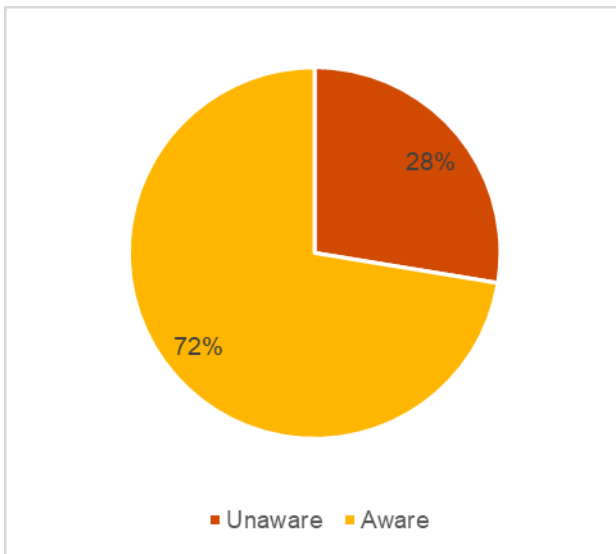


Figure 4-9: % of men aware of Meendum Manjappai campaign

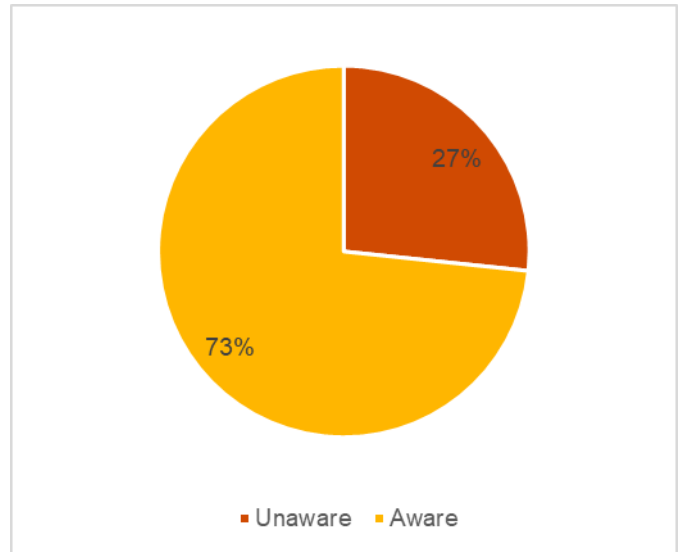


Figure 4-10: % of women aware of Meendum Manjappai campaign

**Study: Women drive majority of consumer purchasing**

Studies show that it is women who influence or make the majority of decisions related to consumer purchasing, with estimates being that around 70-80% of consumer purchasing decisions are driven by women. Therefore, it is an effective strategy to target women to bring about behavioral change in consumer purchasing.



- It could be inferred from the survey results that the majority of citizens have started to carry a reusable carry bag when they step out, leading to lesser need for banned carry bags. This signifies a good behavioral trend in line with the ideals of the Meendum Manjappai campaign.

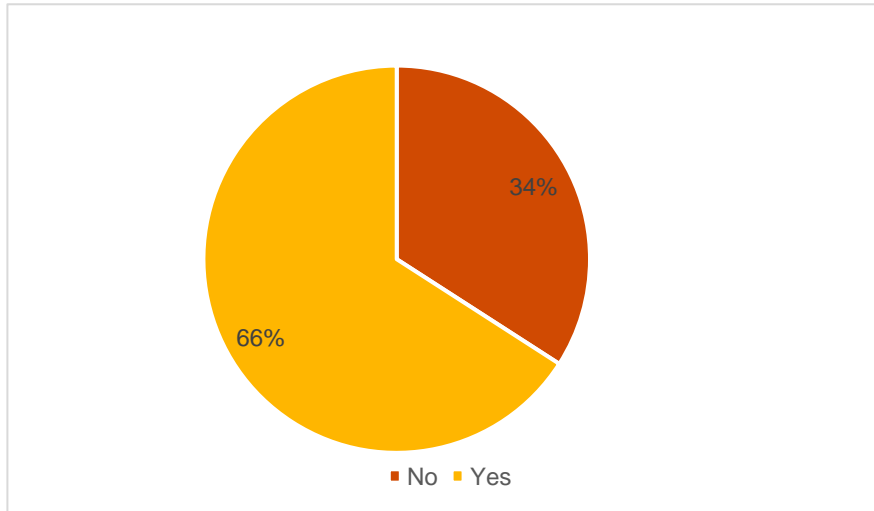


Figure 4-11: % of people who carry a reusable carry bag when they step out

- Only 49% of citizens are aware of the Manjappai vending machines installed at various locations across the State, while around 45% of citizens have used the Manjappai vending machines before. This indicates that the visibility of the Manjappai vending machines is still limited to the specific locations at which they are kept, despite dignitaries inaugurating them.

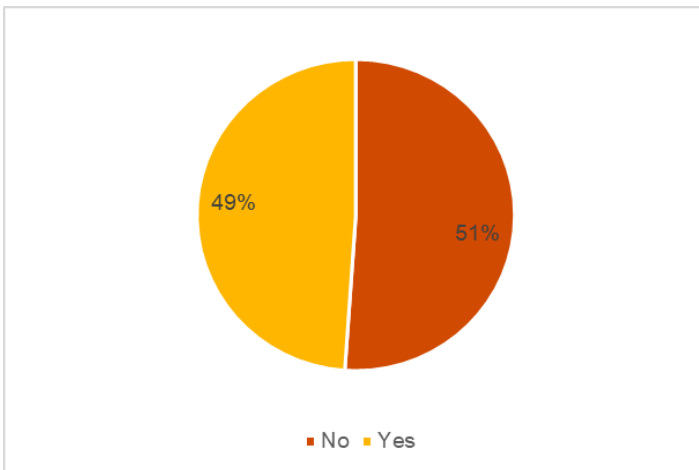


Figure 4-12: % of people aware of the Manjappai Vending Machines installed in the State

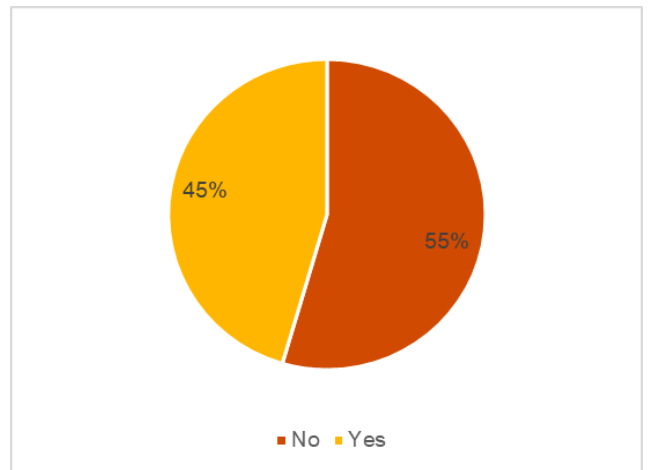


Figure 4-13: % of citizens who have used Manjappai Vending Machines

In addition to the survey that has been conducted to draw preliminary insights, an elaborate survey may be conducted on a pre-determined frequency to understand the levels of awareness of people. TNPCB or every local body could engage an agency to conduct a survey for measuring people’s levels of awareness and sources of awareness on an annual basis to additionally evaluate the effectiveness of each program separately.

## 4.8 Programs being planned

In addition to the campaigns and initiatives described above, the Government is planning to carry out mass campaigns as detailed below.

### 1. Manjappai Express:

Target: General public, school children, travelers

As part of the Meendum Manjappai campaign, to create awareness on impact of SUPs and promote use of alternatives to SUPs across Tamil Nadu, the Meendum Manjappai Express Train is planned to be launched in 2023. It will showcase exhibits, art installations and infographics related to the effects of SUPs and promotion of alternatives with different themes for each coach and is expected to be a spectacle to get the general public's attention. It could cover every district of Tamil Nadu, with the train being planned to be stationed at one new district every day.

### 2. Beach Kiosk:

Target: Travelers, Tourists

Used shipping containers (20 ft length) shall be modified and made as kiosks for monitoring litter in the beaches. The containers shall be modified to accommodate Manjappai and reverse vending machines inside it but at the same time, it shall be made sure that it is accessible to the public from the outside. CCTV cameras shall be provided along the coast of the beach at suitable intervals and required CCTV monitoring systems shall be placed within the containers to ensure monitoring across the length of the beach and in areas of key commercial activities. TNPCB shall recruit sanitary staff for the monitoring kiosks.

IEC activities shall be frequent and continuous to ensure the right level of awareness among the visitors. The messages shall be communicated effectively through one-to-one interactions, especially on observance of unacceptable practices related to plastic waste management or implementation of SUP ban. School students shall be involved in creating awareness to the visitors and vendors on negative impacts of single-use plastics. The schools near the beaches shall be partnered with TNPCB in such a way that schools can send their students on a rotational basis to the Kiosk on weekends to volunteer and carry out IEC activities.

## 4.9 Summary of observations

### 4.9.1 What went well

- **High number of programs which are effective in grabbing people's attention:** Programs which involve a high degree of visual and/or auditory engagement are generally the most effective way of grabbing the attention of the audience. There are a high number of programs conducted by TNPCB which are effective in this regard, with initiatives like animated awareness videos, messages through autos, and street plays being the best examples.
- **The use of local tradition for promoting eco-alternatives in the Meendum Manjappai campaign:** The use of the age-old tradition of carrying Manjappais for all purposes is an effective strategy as it taps into the idea that people have been using sustainable methods for long.
- **Balanced messaging:** There is a balanced coverage between activities such as display of posters and distribution of pamphlets whose key messages are related to creating awareness of the ban and the items covered in the ban. Activities like the animated awareness videos and drawing competitions can have key messaging focused on the impact of SUP usage on the environment.

- **Wide coverage of target groups:** The program and activities carried out by TNPCB cover most target groups, with important target groups like students, office goers and households being highly covered. Even groups which do not have targeted IEC activities like caterers and hoteliers have been engaged through meetings with officials.
- **High impact on places with high number of IEC activities:** An analysis of the data shows that in the top 5 districts with the highest number of IEC activities, the quantity of plastic seized per raid has reduced significantly over the past year. At an overall level, however, the correlation between number of IEC activities conducted and quantity of SUPs seized per raid is moderate. This could be due to the fact that the benefits of IEC and awareness programs are usually more prominently seen in the long term
- **High level of awareness among citizens of the ban and the Meendum Manjappai campaign:** Most citizens seem to be aware of the ban on SUP items and the Meendum Manjappai campaign. Most citizens also claim to carry reusable carry bags when they step out, which is in line with the ideals of the Meendum Manjappai campaign.

#### 4.9.2 Areas for improvement

- **No dedicated IEC action plan:** It is noted that while general guidelines are given for IEC activities in the State action plan, they are repetitive and do not give specific content such as target groups to be covered, key messages to be communicated, participatory and non-participatory methods of awareness generation, targeting for each form of IEC activity, and parameters to be monitored and evaluated. A dedicated IEC action plan covering these details would be beneficial and need of the hour with respect to implementation of SUP ban.
- **Decentralised planning of activities:** The district TNPCB offices and other district department offices are allowed to decide independently and plan the IEC activities they conduct, which may hinder a scientific approach to IEC – BCC campaigns. The overall planning of IEC – BCC activities may be centralized ensuring adequate involvement of local bodies in the planning process. This would help in formulating a scientific yet implementable targeted approach to IEC – BCC campaigns for SUP ban.
- **Low number of programs which are effective in instilling behavioral change:** The programs which are more participatory in nature and actively involve the audience are known to be more effective at instilling behavioral change in the audience. While a few initiatives like the Meendum Manjappai awards and the Mega beach clean-up drive have been effective programs in this regard, they form just a small minority among all the initiatives.
- **Lack of data on IEC activities in rural areas:** While IEC activities have been carried out across urban and rural areas across all districts<sup>19</sup>, only data from ULBs have been collected so far, leading to an information gap when it comes to IEC activities conducted in rural areas. This also results in low focus on IEC activities catered to rural areas.
- **Low number of followers for social media accounts:** While the social media pages for TNPCB and the Meendum Manjappai post frequently on all platforms like Instagram, Facebook and Twitter, the number of followers they have are low compared to the States with the highest social media engagement. This could be due to lack of promotion of the pages. More emphasis could be put on promoting the pages, especially the Instagram page, by displaying the link to the page during promotional activities and using social media influencers. This would help engage with socially active users, especially the youth, and create a consciousness about the problem of using SUPs.

<sup>19</sup> It was informed during interactions with TNPCB officials that IEC activities have been carried out across rural areas as well

- **Lack of detailed data on IEC events for monitoring:** So far, only the number of IEC activities conducted in each ULB has been captured for reporting purposes. Capturing more data such as type of event and the target audience for each event would be beneficial.
- **Low level of awareness among citizens of all the specifically banned items:** Most citizens are not aware of all the specific items covered in the ban apart from plastic carry bags. A larger focus on avoiding all kinds of SUPs, having better plastic waste segregation, and returning to sustainable practices in general, may help in creating a behavioral change aligned with the overall expected outcome of the ban.
- **Wider age-group-wise targeting required for animated awareness videos:** The animated awareness videos being made currently only target school students, especially the primary school age group. It would be beneficial for more videos to be made which target other specific age groups as well.

## 4.10 Successful IEC and awareness campaigns for case study

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1. The Plastic Free Isles of Scilly campaign achieved remarkable success by implementing effective strategies. Through close collaboration with local businesses, community groups, and residents, the campaign raised awareness about the harmful effects of SUPs and provided alternatives. By promoting reusable options and encouraging behavior change, the campaign successfully reduced SUP consumption and made a significant impact on the islands. The key to their success was the strong engagement with stakeholders and the focus on sustainable alternatives.
  2. The Plastic Free Communities campaign in Australia achieved great success through its strategic approach. The program, led by the Plastic Free Foundation, empowered communities with resources and guidance to implement plastic-free initiatives. By effectively communicating the environmental impact of single-use plastics, engaging local businesses, and conducting education campaigns, numerous communities successfully reduced their reliance on such plastics. This campaign made a significant impact by fostering a culture of sustainability and encouraging collective action towards creating plastic-free communities throughout Australia.
  3. The "Refill" Campaign in the United Kingdom achieved impressive success by implementing a well-crafted strategy and making a substantial impact. This innovative initiative encouraged individuals to refill their water bottles at no cost in participating establishments, effectively reducing the demand for single-use plastic bottles. The campaign garnered extensive support from various towns, cities, and businesses throughout the country, effectively raising awareness about the detrimental effects of plastic pollution. By emphasising the convenience and advantages of refilling, building strong partnerships, and actively engaging the community, the campaign successfully motivated individuals to embrace sustainable practices and make a positive difference in reducing plastic waste. The Refill campaign stands as a shining example of how collaborative efforts and accessible alternatives can drive significant change towards a more sustainable future
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# Promotion of alternatives



# 5 Promotion of alternatives

Enforcement of SUP ban may not be complete with mere imposition of fine or seizure of plastic. Though it creates a compulsion on people to refrain from SUPs for some time, a lack of adequate equivalent alternatives to SUPs may prompt people to return to using SUPs. Alongside enforcement and awareness, it is crucial to take efforts to develop equivalent alternatives to plastics and find mechanisms for scaling up its use among general public. Such efforts may range from informing people about available alternatives, encouraging small businesses to provide innovative and sustainable replacements to SUPs, to taking policy-level measures such as interest-free loans, tax rebates, and financial assistance to manufacturers and retailers of eco-alternatives, which shall help make price of alternatives comparable to that of corresponding SUPs.

The GoTN has taken various such initiatives to promote the use of alternatives to SUPs in Tamil Nadu. The State was one of the first to carry out a study to identify manufacturers of alternatives to plastic and prepare a directory with contacts of these manufacturers. In addition to this, the State took lead in conducting a national-level expo on eco-alternatives to inform the citizens about various available alternatives to SUPs and to promote use of these alternatives. Tamil Nadu has also been carrying out stakeholder meetings and interactions with manufacturers of eco-alternatives to identify and further resolve the challenges faced with respect to use of alternatives to SUPs.

This chapter identifies and assesses the various initiatives undertaken by the Tamil Nadu government in promoting alternatives to single-use plastics. Through the assessment, the chapter tries to unveil the various hurdles that exist in promotion and adoption of alternatives by public and identify approaches that could probably help navigate the challenges in an incremental manner.

## 5.1 Mapped alternatives to SUP

For each of the SUPs banned, Tamil Nadu Government identified and disseminated information among public on the available eco-friendly and biodegradable alternatives to banned SUP in the markets. Most of these alternatives are made from indigenous materials such as cloth, areca leaves, compostable plastics, bamboo etc. that are available locally or are made from natural discarded materials like cotton waste, etc. The Table 20 below depicts the SUPs banned by Tamil Nadu and the appropriate alternatives to banned SUPs as identified by the Government.

Table 20: List of Banned SUPs and Mapped Alternatives in Tamil Nadu

S. No.	Banned SUPs		Mapped Alternatives <sup>20</sup>	
1.	Plastic / Thermocol plates		Bamboo plates  Areca palm leaf plates	

<sup>20</sup> The images displayed in this table have been taken from various sources available on the internet

S. No.	Banned SUPs		Mapped Alternatives <sup>20</sup>	
			Bagasse trays	
2.	Plastic coated paper plates		<p>Areca palm leaf plates</p> <p>Lotus leaf plates</p>	 
3.	Plastic Trays		<p>Corn starch (PLA) trays</p> <p>Bagasse trays</p>	 
4.	Plastic carry bag of all sizes & thickness		<p>Cloth bags</p> <p>Compostable carry bags</p>	 
5.	Plastic coated carry bags		<p>Paper bags</p> <p>Cloth bags</p>	






S. No.	Banned SUPs		Mapped Alternatives <sup>20</sup>	
6.	Nonwoven Polypropylene Bags		<p>Jute bags</p> <p>Cloth bags</p>	 
7.	Plastic teacups		<p>Terracotta cups</p> <p>Bagasse cups</p>	 
8.	Plastic coated paper cups		<p>Bagasse cups</p> <p>Areca leaf tumblers</p>	 
9.	Thermocol cups		<p>Areca leaf tumblers</p> <p>Bagasse cups</p>	 

S. No.	Banned SUPs		Mapped Alternatives <sup>20</sup>	
10.	Plastic tumblers		Bagasse cups	
11.	Plastic straws		Paper straws  Coconut leaf straws	 
12.	Plastic flags		Paper flags  Cloth flags	 
13.	Cutlery - Plastic Spoons		Wooden spoons  Edible (agro based) spoons  Areca leaf spoons	  

S. No.	Banned SUPs	Mapped Alternatives <sup>20</sup>
14.	Cutlery – Plastic Forks 	Wooden forks 
15.	Cutlery Plastic Knives 	Wooden knives 
16.	Plastic Stirrers 	Wooden stirrers 
17.	Ear buds with plastic sticks 	Bamboo earbuds 
18.	Ice-cream with plastic sticks 	Wooden sticks 
19.	Candy with plastic sticks 	Wooden candy sticks 

S. No.	Banned SUPs	Mapped Alternatives <sup>20</sup>
20.	Wrapping or packing films around cigarette packets 	Compostable plastic films 
21.	Plastic sticks for Balloons 	Paper sticks for balloons 
22.	Polystyrene (Thermocol) for decoration 	Paper decorative items 
23.	Wrapping or packing films around invitation cards 	Paper invitation cards 
24.	Wrapping or packing films around sweet boxes 	Paper sweet boxes 
25.	PVC Banners less than 100 microns 	Cloth banners 

S. No.	Banned SUPs	Mapped Alternatives <sup>20</sup>
26.	Plastic sheet used for food wrapping 	Aluminium foil 
27.	Plastic roll for dining table spread 	Paper roll 

Furthermore, to identify alternatives, Tamil Nadu Government has taken various first-of-its-kind initiatives to inform people about such alternatives and promote use of these alternatives. Some of such initiatives taken by Tamil Nadu in this regard are described below.

- 1. Meendum Manjappai Campaign** - Launched as a flagship program by the Chief Minister, is a state-wide initiative to promote traditional nature-based solutions through a call for citizens to return “back to basics and into the future.” This people’s campaign aimed to combat the use of throwaway plastics and raise awareness about sustainable alternatives, emphasizing the importance of preserving our environment for future generations. The campaign focuses on promoting its citizens to use the yellow cloth bag, ‘Manjappai’, which is a symbol of Tamil Tradition. Meendum Manjappai campaign serves as an umbrella campaign and has various initiatives like the promote ecofriendly packaging materials and business, Manjappai Express train, Manjappai Awards, SUP free campuses, awareness videos in schools, etc. planned or ongoing under the campaign.
- 2. Manjappai Vending Machine** – To improve access to affordable cloth bags as an alternative to plastic, Manjappai vending machines are being installed by the government in various strategic locations in the state. These machines are analogous to snack vending machines and dispense cloth bags upon insertion of appropriate currency or making payment using UPI services as per the predetermined cost of Manjappai. Currently, a total of 83 vending machines have been installed in various locations in Tamil Nadu, provisioning sale of cloth bags at prices of Rs. 10 and Rs.20 (based on the size of the bag), which is around 50-100% lesser than the average price of cloth bags at the same quality. The details of locations of installation on Vending Machines are included in annexure 5.5 of this report.
- 3. Eco-alternatives National Expo and Start-up Conference** - A two-day National Expo on Alternatives to Banned SUPs and Start-Up Conference was conducted on 26<sup>th</sup> and 27<sup>th</sup> of September 2022 at Chennai Trade Centre, Nandambakkam, Chennai. The expo featured a diverse range of eco-alternatives showcased by 173 exhibitors from across India, including eco-alternative manufacturers, machinery manufacturers and financial institutions. The exhibited products ranged from innovative cloth bags, biodegradable packaging materials, compostable cutlery, edible cutlery and various other ecofriendly alternatives. The event provided a platform for networking, knowledge-sharing, and fostering collaborations within the industry.



Figure 5-1: National Expo on eco-alternatives

4. **Handbook on manufacturers of eco-alternatives** – In conjunction with the expo, a handbook featuring detailed information about the manufacturers of eco-alternatives who participated in the event was prepared and published by TNPCB. This consolidated handbook provides information on each manufacturer's profile, their range of eco-friendly products, manufacturing processes, certifications, and contact details.
5. **Eco - Alternatives Directory** – A comprehensive directory has been created listing over 720 manufacturers and suppliers of eco-alternative materials for single-use plastics in Tamil Nadu. This directory serves as a valuable resource for individuals and businesses seeking sustainable alternatives, providing a wide range of options and sources for eco-friendly materials. The directory is made available to public through TNPCB's Meendum Manjappai website for increased transparency and availability of available alternatives to SUP and manufacturers for the same.
6. **Design improvisations for Manjappai** – The GoTN collaborated with the National Institute of Fashion Technology, Chennai, to develop designs for trendy cloth bag designs that cater to different purposes and appeal to various age groups. The objective is to make cloth bags more attractive and promote their widespread adoption. These stylish bags, such as vegetable shopping bags, backpacks, and multipurpose tote bags, will be predominantly distributed through Manjappai Vending Machines. While the production of these bags is still underway, there are already around 30 styles available. The selection process for further distribution will be prioritized based on bags that offer high utility, ensuring practicality and functionality for users.



Figure 5-2: Upgraded Manjappai designs

7. **Manjappai Awards:** To promote adoption of alternatives and other sustainable practices amongst public, the Government of Tamil Nadu introduced Manjappai Awards as part of their initiatives under the Meendum Manjappai Campaign for the financial year 2022-23. These awards were envisaged to recognise the outstanding efforts of schools, colleges, and commercial establishments in effectively



implementing the ban on single-use plastics (SUPs) and creating a plastic-free environment on their campuses. The awards which were presented to three each of top-performing schools, top-performing colleges, and top-performing commercial establishments, had allocated prize money of Rs.10 Lakhs, Rs. 5 Lakhs and Rs. 3 Lakhs for first, second and third prizes respectively for each category.

- 8. Enviro-Solvers Hackathon:** The Enviro-Solver's hackathon, organised by TNPCB under the Mission LIFE (LIFE-Style for Environment), Ministry of Environment, Forests and Climate Change, Government of India, focused on reducing single-use plastics and water saving. Participants were given a week to prepare solutions for specific problem statements related to extended producer responsibility, packaging materials especially for liquid items, and digital water conservation. The hackathon showcased unique solutions addressing ways to reduce Single-Use Plastic and Save Water, bringing together diverse group of participants for innovative contributions.

#### SUP Reduced theme winners:

- First Place - **Innovative, Cost-effective, and viable edible and eco-friendly alternatives in food packaging for Circular Economy** - Kaviyashree. S, Pooja. L, Raajeswari.Pa - Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore
- Second Place - **Sustainable Food Packaging materials from Sun hemp fibers as a substitute for synthetic plastics in food industry** - SriKavi A - Sri Ramakrishna College of Arts and Science for Women, Coimbatore
- Third Place 1: **AGRIVERY- Sustainable package container and methods of improving shelf-time of food items thereof** - Ananth Sai Shankar. V, Sathiyar. A.R Yokesh. J - Velammal Engineering College
- Third Place 2: **Plasti-Track(Cloud based Mobile Application)** - Shyam Shankaran. R - NLC India Limited, Chennai
- Third Place 3: **THUTRI - One-stop platform for SUP alternatives** - Shyamkumar. M, Adithyan. S Sowmiya. K - Sri Sairam Engineering College, Chennai



Figure 5-3: Hackathon presentation on SUP reduced theme

- 9. Meendum Manjappai App:** The TNPCB has taken up an initiative to develop the Manjappai mobile application to provide a robust ecosystem of Eco alternatives to SUPs. The app will help inform the users about the details of manufacturers of alternatives to SUPs and locations of Manjappai Vending Machines. The app will also feature a chatbot which will answer the questions of the users and help them in locating the details needed by them. The Meendum Manjappai mobile app was launched on 6th June 2023 as a part of World Environment Day 2023 celebrations and is available in Android and iOS platforms.

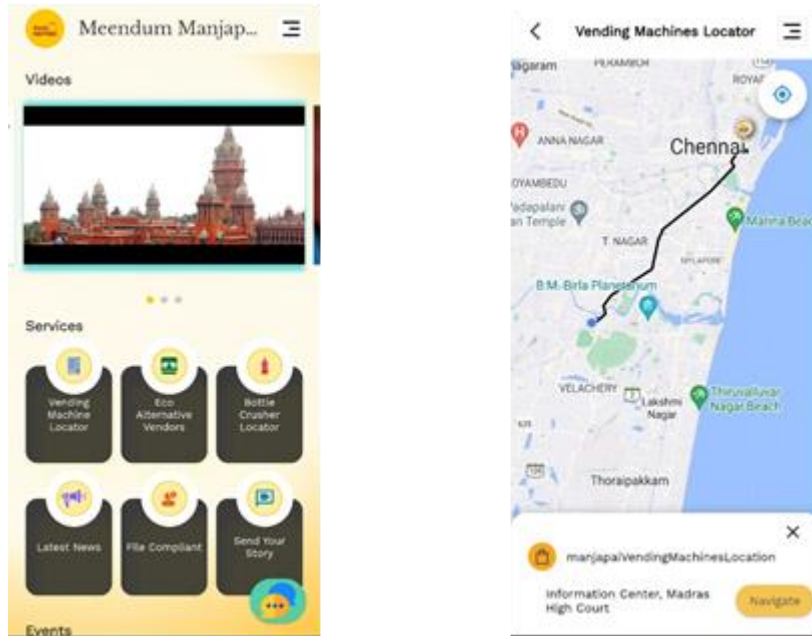


Figure 5-4: Snapshots of Meendum Manjappai App

- 10. Website:** To revamp and redesign the website dedicated for Meendum Manjappai Campaign. The website will provide the visitors with all the updates about news and events and activities conducted regarding the ban on SUPs. It also have a repository of all the essential documents, list of manufacturers of alternatives, recyclers and will provide an overview of the plastic ban. The Meendum Manjappai website was launched on 6<sup>th</sup> June 2023 as a part of World Environment Day 2023 celebrations and has attracted more than 8800 viewers as on July 2023.



Figure 5-5: Snapshot of Meendum Manjappai website



## 5.2 Future prospects of sustainable alternative solutions in Tamil Nadu

In today's world, there is a growing concern for the environmental impact of traditional packaging materials and a rising demand for sustainable alternatives. This section explores the prospects of sustainable alternatives for future packaging solutions. We explore into the potential of various options and provide insights on their sustainability and viability. By examining factors such as raw material availability, scalability, cost-effectiveness, and consumer acceptance, we aim to identify promising alternatives that can help mitigate the environmental challenges posed by conventional packaging. Through research and analysis, we present our take on the most sustainable options that can be pursued, considering the abundance of resources like bagasse and Areca Palm in Tamil Nadu.

Table 21: Comparative assessment of different raw materials available in Tamil Nadu

Raw Material	Advantages	Availability in Tamil Nadu	Scalability Potential	Consumer Acceptance	Improvements/Enhancements
Bagasse-based products	Reduces waste and carbon emissions	Abundant supply from sugarcane waste	Promising	Likely to be positive, especially among environmentally conscious individuals	Improve production techniques to increase efficiency
Areca palm leaf plates	Minimal environmental impact	Significant presence of Areca palm	Scalable	Increasingly embraced as eco-friendly alternatives to conventional plates	Enhance harvesting and processing methods for higher efficiency
Bamboo	Highly sustainable and renewable	Suitable climatic conditions for cultivation	Significant	Gaining popularity as a sustainable and renewable resource	Develop more efficient manufacturing processes
Compostable plastics	Breaks down into natural elements	Availability depends on infrastructure	Requires further study	Growing consumer acceptance of compostable alternatives	Improve local manufacturing and distribution infrastructure. Develop infrastructure for raw material production.
Water hyacinth	Utilises an invasive plant	Abundantly available	Potential for scalability	Unique and eco-friendly alternative gaining acceptance	Optimise harvesting techniques for higher efficiency
Leaf-based packaging	Renewable and biodegradable	Abundance of natural leaves	Scalable	Widely accepted in traditional Indian cuisine and cultural practices	Explore innovative packaging design for improved efficiency
Natural fiber composites	Reduces reliance on synthetic fibers	Wide availability of natural fibers	Potential for scalability	Rising acceptance in sustainable industries	Enhance processing techniques for better fiber integration

The above table presents a comparative assessment of different raw materials available in Tamil Nadu, highlighting their advantages, availability, scalability potential, consumer acceptance, and areas for improvement. The availability of raw materials within the State can support the development of local supply chains and promote the use of renewable resources. Exploring these prospects can contribute to the reduction of single-use plastics and foster sustainable practices in Tamil Nadu.

### 5.3 Receptance of alternatives to plastic among citizens

Meendum Manjappai campaign has been a notable initiative by the government to push people to use cloth bags instead of plastic carry bags. Through the campaign which holds on to their culture, people have started replacing plastic carry bags with cloth bags. By means of various Manjappai Vending machines installed at various locations, over 78,000 Manjappais have been availed by the public. The campaigns alongside enforcement measures like encouraging customers to bring their own bags and providing affordable cloth bags at some grocery stores, created habitual change among a certain number of people who started carrying their own shopping bags for purchases.

However, despite these efforts, barring some cases of visible changes with respect to use of cloth bags, a large quantity of SUPs are in circulation and use, and ultimately ending up as litter. Plastic carry bags continue to be used by most of the local vendors for packaging, while plastic cutlery is still widely used during events (like marriage receptions, gatherings etc.).

Site visits and interactions were carried out to understand the people's perception towards shifting to alternatives to plastic, which indicated that key factors causing hindrance to acceptance of mapped alternatives to plastic can be categorised as follows.

1. Higher cost - The availability of alternatives in the market is often insufficient to meet the demand. The nascent stage of alternative production and distribution hampers their accessibility, further impeding their acceptance.
2. Inadequate supply - Many alternatives currently incur a higher cost compared to plastic counterparts. This price disparity poses a challenge for widespread adoption, especially among individuals with limited financial resources.
3. Inability to deliver equivalent convenience as banned SUPs - Some alternatives struggle to match the convenience offered by banned SUPs. Plastic carry bags, for example, are lightweight, durable, and easily disposable. Alternatives must strive to replicate or improve upon these qualities to gain wider acceptance.
4. Difficulty in finding suitable alternatives for liquid packaging - Many alternatives to plastic for liquid packaging are still in the development or testing stage and may not be widely available or affordable. Some alternatives may also have lower durability or shelf life than plastic and may not appeal to consumers who are used to the convenience and quality of plastic.

It is important to acknowledge that most alternatives are still in their early stages and operate on a smaller scale. As a result, they cannot entirely replace plastic usage until their operations reach a threshold level. Recognising this, the Tamil Nadu Pollution Control Board (TNPCB) should assume the role of a catalyst by initiating dialogues through the Ministry of Small-Scale Industry to provide support for such businesses across the country. Collaborative efforts can foster the growth and development of alternative solutions, enabling them to become more accessible, cost-effective, and convenient for consumers. By addressing the barriers of higher cost, inadequate supply, and convenience, and by fostering an ecosystem that supports the growth of sustainable alternatives, the Meendum Manjappai campaign and similar initiatives can pave the way for wider acceptance and adoption of alternatives to single-use plastics.

The following sections 5.3.1 and 5.3.2 provides an assessment of the alternatives with respect to the aforementioned aspects.

### 5.3.1 Consumption (demand) of banned SUP items in Tamil Nadu

With the increase in convenience and reduced costs, plastics is one of the most preferred materials for packaging and disposable products such as cutlery. This has led to an increase in the demand for plastic items across the country. As per the report released by PlastIndia Foundation<sup>21</sup>, the annual demand for plastic items which are majorly used as SUPs such as Low-density polyethylene (LDPE), Polystyrene (PS), Polypropylene (PP) and MLP, in India is increasing at a rate of 6% annually and has a share of 52% of the total plastic demand. This indicates the increasing dependence on SUPs that may need to be overcome by creating adequate supply of alternatives to plastic.

Tamil Nadu has a share of 12% of the total demand or consumption of plastics in India. A similar percent share may be expected in the demand for SUPs. Based on this assumption and based on the consumption of various types of disposables in India (as per various reports), category-wise demand/consumption for various banned SUPs in Tamil Nadu were estimated and compared with the existing supply of alternatives<sup>22</sup>. The assessment revealed an average gap between supply of alternatives to current consumption of SUPs to be ~75%. The findings from the assessment are depicted in the figure below.

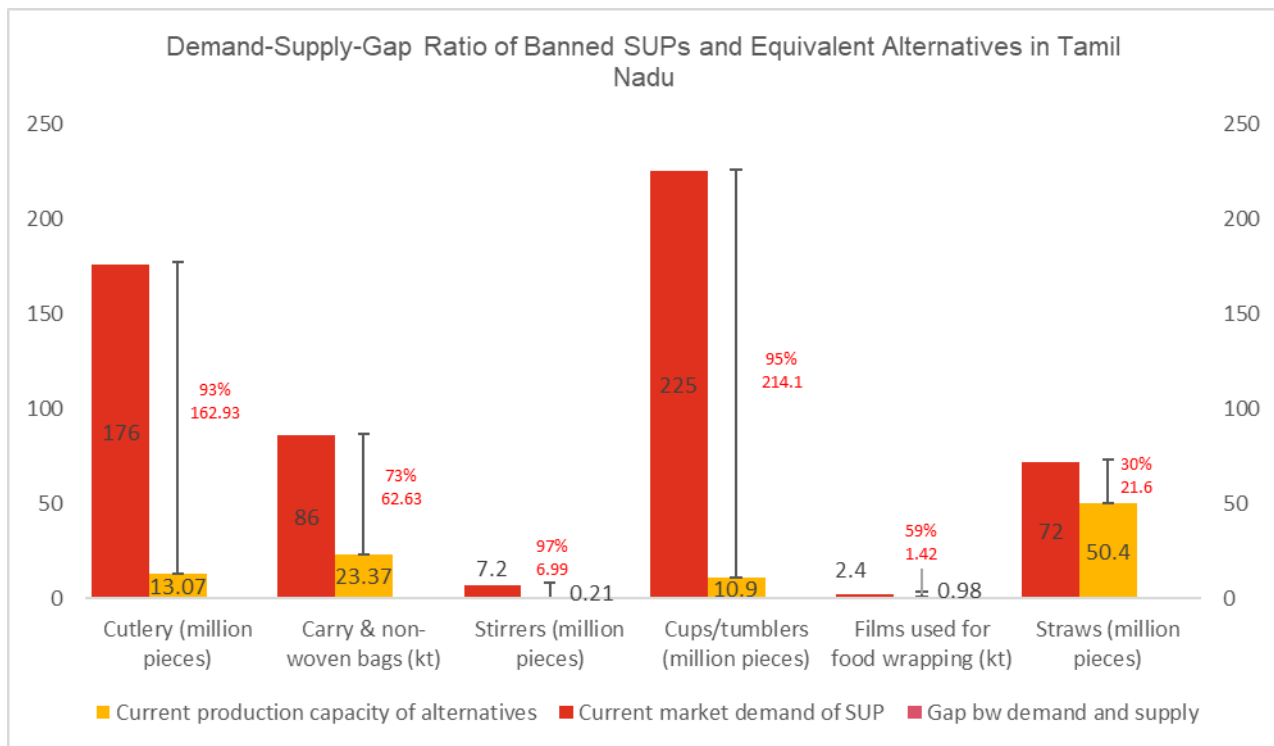


Figure 5-6: Demand of banned SUPs and Supply-Gap ratio of Equivalent Alternatives in Tamil Nadu

<sup>21</sup> <https://www.plastindia.org/plastic-industry-status-report>

<sup>22</sup> Estimated based on the average production capacities per manufacturing unit of various types of eco-alternatives and the total number of such manufacturing units in Tamil Nadu.

Table 22: Demand of banned SUPs, supply of alternatives &amp; demand-supply gap in Tamil Nadu

Banned SUP	Estimated demand in TN/month <sup>23</sup>	Equivalent alternatives	Supply per Day	Total supply/month	Supply-demand gap
Plastic cutlery (spoons, forks & knives)	176 million pieces	Wooden/Bamboo	34000 pieces	13.07 million pieces	162.9 million pieces (93%)
		Areca/Palm Leaves	27000 pieces		
		Edible	24750 pieces		
		Compostable plastics	350000 pieces		
Plastic carry bags	72 kt/month	Cloth bag	555000 kg	23.37 kt	62.6 kt (73%)
		Compostable bag	27360 kg		
Non-woven bags	14 kt/month	Paper bag	106560 kg		
		Jute bag	90000 kg		
Plastic sticks/stirrers	7.2 million pieces per month	a. Wooden/Bamboo sticks	3000 pieces	0.21 million pieces	6.99 million pieces (97%)
		b. Areca	4000 pieces		
Plastic Trays/plastic coated paper trays/thermocool plates	–	a. Bagasse trays	14000 pieces	15.51 million pieces	NA
		b. Areca trays	472000 pieces		
		c. Lotus leaf plates	4000 pieces		
		d. Bamboo plates	3000 pieces		
		e. Banana fiber	4000 pieces		
		f. Corn starch	20000 pieces		
Plastic teacups/plastic coated paper cups/plastic tumbler/thermocool cups	225 million per month	a. Terracotta cups	54000 pieces	10.9 million pieces	214.1 million pieces (95%)
		b. Bagasse cups	245000 pieces		
		c. Areca leaf tumblers	63000 pieces		

<sup>23</sup>Note: The demand figures presented in this table are based on data and assessments considering multiple parameters. It is important to note that actual demand may vary and could be higher or lower depending on various factors.

Banned SUP	Estimated demand in TN/month <sup>23</sup>	Equivalent alternatives	Supply per Day	Total supply/month	Supply-demand gap
Plastic sheet/film use for food wrapping	2.4 kt	a. Aluminium foil	11000 kg	0.98 kt	1.42 kt (59%)
		b. Butter paper	10000 kg		
		c. Compostable plastic wrappings	11000 kg		
		d. Beeswax/plant wax wrapping	800 kg		
Plastic sheet roll used for spreading on dining table	NA	a. Paper roll	18000 kg	16.2 kt	NA
Packaging films for sweet boxes	NA	a. Paper boxes	27140 kg	0.8 kt	NA
Plastic films around invitation cards	NA	a. Paper invitation	240000 million pieces	7.2 million pieces	NA
Packaging films around cigarette packets	NA	a. Compostable plastic films	21 tons	0.06 kt	NA
Plastic/PVC banners less than 100 micron	NA	a. Cloth banners	NA	NA	NA
Thermocol (polystyrene) for decoration	NA	a. Paper materials for decoration	NA	NA	NA
Water pouches/packets	NA	a. Glass bottles	NA	NA	NA
Plastic straws	72 million per month	a. Paper straws	880000 million pieces	50.4 million pieces	21.6 million pieces (30%)
		b. Compostable straws	800000 million pieces		
Plastic flags	NA	a. Paper flags	NA	NA	NA
		b. Cloth flags	NA		
Plastic sticks for balloons	NA	a. Paper sticks	NA	NA	NA

*Note: The data presented in the table is based on assumptions made using available literature, reports from other organisations, and information found on the internet. The reference has been included in annexure 5.1 & 5.3 to provide readers with additional details on the assumptions made. The estimated demand, equivalent alternatives, and supply per day are subject to variations based on multiple factors such as consumer behavior, market dynamics, and evolving trends in sustainable alternatives, amongst others.*

### 5.3.2 Suitability of identified alternatives

In the previous section, though the supply-demand gap assessment indicates an average gap of around 75% in the availability of alternatives to replace to the estimated demand for SUPs, it is to be noted that the current demand for eco-alternatives may be much lower than the estimated demand for SUPs. This could be attributed to the fact that acceptance of identified eco alternatives among general public is low due to various reasons.

To understand the varied reasons of this lower acceptance among the key stakeholders who are involved in circulation or mass use of SUPs, stakeholder consultations were carried out across key commercial areas in Chennai (such as T Nagar and Besant Nagar Beach, etc.). Higher cost of alternatives was mentioned as a major challenge by many of the stakeholders. While some of them had shifted to alternatives despite the cost, many continue to use some form of banned SUPs. Some shop sellers mentioned specific challenges with respect to the properties of the alternatives which limits convenience of use. For example, transparent nature of certain plastic packaging is easier to market the product inside. The observations and findings from the visits are summarised in Table 23.

Table 23: Field observations from Besant Nagar & T Nagar

SI No.	Stakeholder Category	Key Observations	Banned SUPs Used	Challenges in Adopting Alternatives (as mentioned by stakeholders)
1	Flower Shops	Vendors use plastic carry bags for garlands and flowers despite the ban	Plastic sheet covers, plastic carry bags	Difficulty in finding alternatives to retain freshness of expensive garlands
2	Earrings Shops	Earrings packaged in plastic sheet covers	Plastic sheet covers used for packaging	Each earring reaches the vendor in small plastic packaging. Limited control over packaging by the vendor
3	Kerchief and Cloth Bags Stalls	Products wrapped in plastic sheet covers	Typically, transparent plastic covers or sleeves that are used to wrap or protect various cloth items such as inner wears, kerchiefs, sarees, etc.,	None mentioned
4	Soda and Corn Shops	Adoption of paper cups and recyclable plastic glasses	Plastic spoons	Paper cups and recyclable plastic glass have replaced SUP glasses. Difficulty in finding economical alternatives for plastic spoons
5	Textile Shop (Medium Scale)	No banned SUPs used. However, throwaway-type plastic sheets are used for cloth packaging	Plastic sheet covers	Limited control over packaging as final products reaches vendors in SUPs
6	Juice Shops	No SUPs used after warnings from GCC	None	-
7	Fruit Vendors	Use banned SUPs (glasses, carry bags,	Plastic glasses, spoons, etc.	Higher cost of alternatives, alternatives priced twice as high



SI No.	Stakeholder Category	Key Observations	Banned SUPs Used	Challenges in Adopting Alternatives (as mentioned by stakeholders)
		spoons)		as SUP cutlery
8	Textile Shop (Large Scale)	Even established large textile chains use non-woven plastic carry bags	Non-woven plastic carry bags	Cost and availability of cloth bags pose challenges
9	Food Stalls	Shifted to leaf and aluminium plates and boxes due to raids	None	Higher cost of alternatives, alternatives priced four times higher than plastic cutlery previously used by vendors
10	Fish Vendors in Fish Market	Shifted to leaf and paper plates but using banned plastic sheets to cover displays	Plastic sheets/wrappers	No suitable transparent alternative found for displaying products
11	Fruit Stalls	Most vendors use plastic glasses for serving fruits	Single-use plastic glasses	Difficulty finding suitable alternatives, customers prefer plastic glasses over paper packaging
12	Other Snack Shops	Paper is predominantly used for packaging	None	Customers complain about ink from newspapers sticking to snacks, making alternatives slightly difficult to adopt



Figure 5-7: Fishes covered by banned plastic covers at Besant Nagar



Figure 5-8: Fruits sold in banned plastic tumbler in Besant Nagar













































*Figure 5-9: Banned plastic carry bags used in T Nagar cloth shop*

Based on the consultations and aggregated understandings from the visits and desk-based research, table number 24 provides an assessment of the suitability of the identified alternatives with respect to cost and convenience.



Table 24: Assessment of the suitability of the identified alternatives with respect to cost and convenience

S. No .	Banned SUP	Mapped alternative	Cost of SUP	Cost of the alternatives	Economic Viability	Functionality & Performance	Remarks
1.	<b>Plastic cutlery (spoons, forks &amp; knives)</b>	Wooden/ Bamboo	Rs. 0.5 -1 per piece	Rs. 0.7 – 1.4 per piece			Price of alternative only marginally higher than SUP. Alternative seem to serve the intended purpose
		Areca/Palm Leaves		Rs. 0.7 – 2 per piece			Some of such alternatives are priced double that of the SUP. Alternative serves the intended purpose and is found suitable for events and occasions
		Edible		Rs. 5 – 8 per piece			Relatively expensive alternative, it provides a novel and enjoyable dining experience, ensuring decent functionality and performance
		Compostable plastics		Rs. 1.5 – 3 per piece			Offers a convenient and environmentally conscious alternative with a slightly higher cost, ensuring good functionality and performance
2.	<b>Plastic carry bag</b>	Cloth bag	Rs. 0.88 per piece	Rs.5 – 10 per piece			Provides durability and reusability, albeit at a higher cost than SUP, making it suitable for repeated usage and reducing environmental impact
		Compostable plastic bag		Rs.0.9 - 1.1 per piece			Offers a biodegradable option at equivalent cost compared to SUP, promoting environmental friendliness while serving its purpose
		Paper bag		Rs.5-20 per piece			Provides a recyclable alternative with a higher price, suitable for light to medium-weight items, and contributing to sustainability efforts
		Jute bag		Rs.25-40 per piece			Despite being significantly more expensive than SUP, it offers sturdiness, style, and eco-friendliness, making it a reliable choice for heavy loads
3.	<b>Non-woven bags</b>	Cloth bag	Rs. 2.1 per piece	Rs.5 – 10 per piece			Although pricier than SUP, their durability and reusability make them a sustainable choice for various purposes
		Compostable bag		Rs.0.02 per piece			Provides a biodegradable option with a higher cost, ensuring reduced environmental impact during disposal
		Paper bag		Rs.5-20 per piece			Offers a recyclable alternative with a slightly higher price, suitable for carrying items while considering environmental concerns
		Jute bag		Rs.25-40 per piece			Despite being significantly more expensive than SUP, they provide durability and eco-friendliness, aligning with sustainability goals

4.	<b>Plastic sticks/stirrers</b>	Wooden/Bamboo sticks	Rs. 0.2-0.5 per piece	Rs. 0.2 – 0.9 per piece			Provides a natural and cost-effective alternative for stirring beverages
5.	<b>Plastic Trays/plastic coated paper trays/thermocool plates</b>	Areca trays	Rs. 5-8 per piece	Rs. 4-9 per piece			Offers a sustainable alternative with a price comparable to SUP, ensuring functionality and serving as a suitable replacement
6	<b>Plastic teacups/plastic coated paper cups/plastic tumbler/thermocool cups</b>	Terracotta cups	Rs. 0.5-1 per piece	Rs.5-10 per piece			Offers a compostable and heat-resistant option with a comparable price to SUP, ensuring convenience and sustainability
		Bagasse cups		Rs.4-7 per piece			Provides a unique and eco-friendly choice with a slightly higher cost, suitable for events and gatherings to serve hot and cold beverages also promoting eco-conscious choices
		Areca leaf tumblers		Rs.6-8 per piece			The very higher cost per piece is justified by their durable construction, elegant design, and eco-conscious materials. Areca leaf tumblers offer a reliable and environmentally friendly choice for events and gatherings, adding a touch of natural beauty to the serving experience
7	<b>Plastic sheet/film use for food wrapping</b>	Aluminium foil	Rs. 2.7 per meter	Rs. 7-9 per meter			Offers a versatile and effective option for food wrapping, with a higher cost but superior functionality compared to SUP
		Butter paper		Rs.10-13 per meter			Provides a oil-resistant and non-stick alternative with a higher price, suitable for various food wrapping purposes
		Compostable plastic wrappings		Rs. 3.5 – 5 Per meter			The affordable price range makes them a cost-effective choice for various wrapping purposes, aligning with eco-conscious practices and reducing environmental impact
		Beeswax/plant wax wrapping		Rs.450-500 per meter			These wrappings provide excellent functionality and performance, effectively sealing in freshness while reducing plastic waste. The higher cost is attributed to the use of high-quality materials and sustainable production methods, making them a luxurious and eco-friendly choice for those seeking a more organic approach to food wrapping

8	<b>Plastic sheet roll used for spreading on dining table</b>	Paper roll	Rs. 2.7 per meter	Rs.10-12 per meter	●	●	Although slightly more expensive than SUP, it offers specific properties suitable for covering tables effectively
9	<b>Packaging films for sweet boxes</b>	Paper boxes	Rs. 5.5 per box	Rs.6-8 per box	●	●	Eco-friendly packaging solution for sweets and confectionery. Provides a comparable alternative to SUP with a slightly higher cost, ensuring functionality and serving as an appropriate packaging solution
10	<b>Plastic films around invitation cards</b>	Paper invitation	NA	Rs. 10-40 per card	NA	●	Offer an elegant and sustainable alternative to plastic films, providing a visually appealing invitation while being cost-effective and functional
11	<b>Packaging films around cigarette packets</b>	Compostable plastic films	Rs. 127 – 145 per kg	Rs. 170-200 per kg	●	●	Provides a versatile and environmentally friendly option for various packaging needs, ensuring both cost-effectiveness and functionality in preserving and protecting items
12	<b>Plastic/PVC banners less than 100 micron</b>	Cloth banners	6*3 ft. Rs. 850-950	6*3 ft. Rs. 1300	●	●	Although pricier, provide durability and can be reused multiple times, making them a most suitable sustainable alternative to plastic/PVC banners
13	<b>Thermocol (polystyrene) for decoration</b>	Paper materials for decoration	Rs. 650 set	Rs.800 per set	●	●	Offer a lightweight and eco-friendly choice, allowing for creative and cost-effective decorative solutions that enhance the visual appeal of events while promoting sustainability
14	<b>Plastic straws</b>	Paper straws	Rs. 1-1.5 per piece	Rs. 1.50 -3 per piece	●	●	Higher price range may indicate variations in quality, design, or additional features, making them suitable for different preferences and requirements. Considerably good alternative for SUP straws
		Coconut leaf straws		Rs. 4 – 5 per piece	●	●	Coconut leaf straws provide an eco-friendly choice with a higher price, offering a unique and natural experience for consuming beverages

15		Paper flags	Rs. 10 per piece	Rs. 15-20 per piece	●	●	Paper flags provide a sustainable and affordable option for festive and decorative purposes, ensuring vibrant visuals and functionality without compromising much on cost-effectiveness
	<b>Plastic flags</b>	Cloth flags		Rs. 20-30 per piece	●	●	Durable and reusable solution for decorative purposes, providing a visually appealing and costlier option for events and celebrations. Their higher upfront cost is justified by their long-term functionality and environmental sustainability
16	<b>Plastic sticks for balloons</b>	Paper sticks	Rs. 0.5-1.5 per piece	Rs. 5-8 per piece	●	●	Eco-friendly option for balloon sticks. Their Higher price range is indicative of premium quality and durability compared to the plastic sticks

Economic Viability		Functionality & Performance (Suitability)	
Favorable: Price variation up to 20%	●	Suitable	●
Moderately favorable Price variation between 20% and 50%	●	Moderately suitable	●
Relatively favorable Price variation above 50%.	●	Marginally Suitable	●

As can be seen from the table above, of the 37 varied kinds of alternatives identified for various SUPs, near 25 alternatives could be considered are nearly comparable to the SUP in terms of convenience or fulfillment of intended purpose of use<sup>24</sup>. There could be specific cases of exception here such as inconvenience of using cloth bags for carrying wet items, which are not considered as part of the general assessment based on most common uses. However, only 4 of these 37 alternatives have prices comparable to or only marginally higher than the SUPs. This highlights the need for various mechanisms and schemes that may help in bringing down the cost of alternatives. These schemes could be in the form of incentives, tax rebates, exemptions, or other measures aimed at making sustainable alternatives more affordable and accessible to consumers.

<sup>24</sup> Comparable convenience does not refer to being as convenient as SUP in all terms. It means that it serves the purpose without causing major inconvenience to the user in a way that user shows willingness to use the alternative.

## 5.4 Key observations

- GoTN has taken a notable initiative under the Meendum Manjappai campaign working on the traditional sentiments of people of Tamil Nadu to persuade them to use cloth bags. In addition to this, government has also taken a lead ahead to ensure that the cloth bags are available to people through an easy-to-operate vending machine. These innovative initiatives have helped in creating awareness about cloth bags among not only resident public but also people across other States in the country.

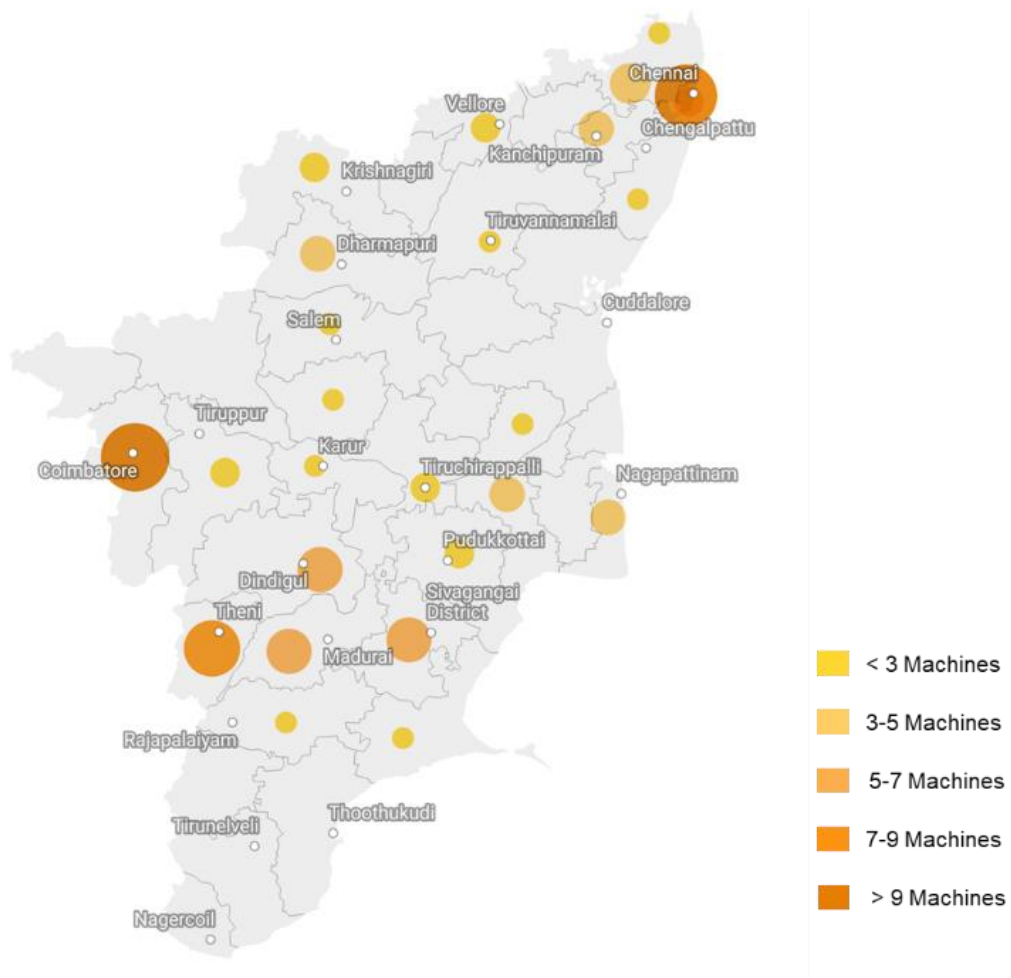


Figure 5-10: Manjappai Vending Machines installed as of July 2023

- Figure 5-11 depicts the various locations of installed Manjappai machines in the State. It is observed that these machines are placed only in specific areas, majorly urban.
- As noted from the assessment of mapped alternatives, one of the key constraints in improving demand for such alternatives among general public seems to be the cost of alternatives. More than 21 out of 37 alternatives mapped are costlier than corresponding alternatives by more than 50%. The significant cost difference can discourage individuals and businesses from adopting sustainable alternatives. This calls for the need for focused initiatives from the government to reduce cost of alternatives by various measures of cost reduction throughout the supply chain. The Figure 5-11 enumerates some of such initiatives that could be taken at various stages which could lead to reduction in cost of alternatives.

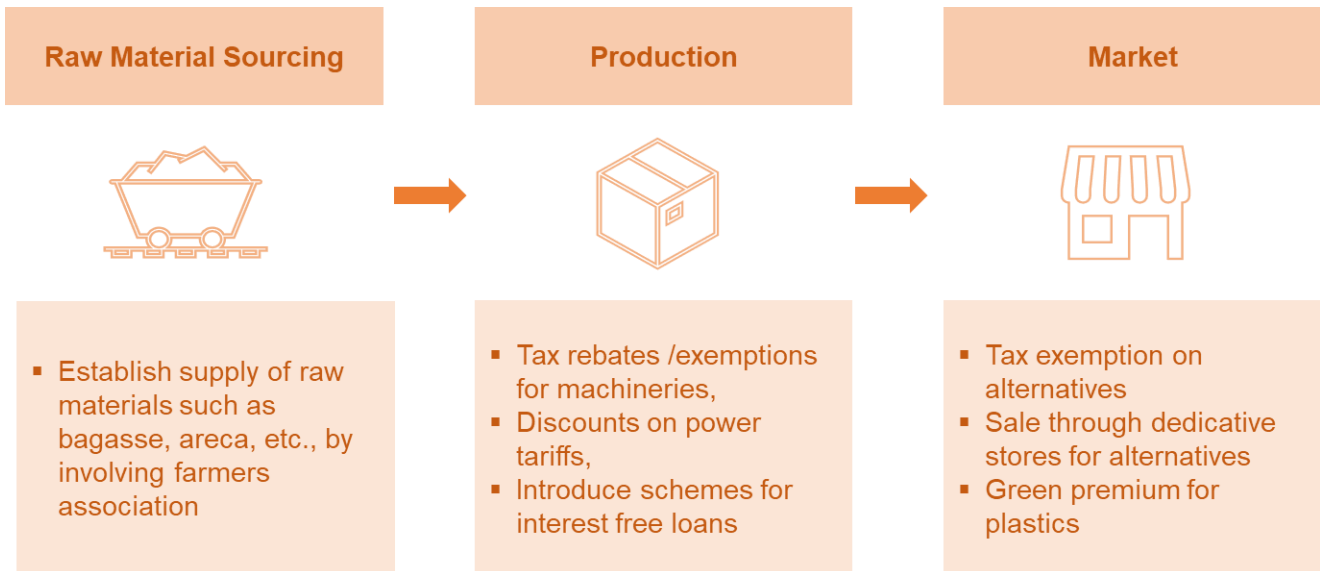


Figure 5-11: Initiatives to improve affordability of sustainable alternatives

**Green Premium:** Green premium refers to a higher price or tax on environmentally harmful products, like traditional plastics, to incentivise the adoption of sustainable alternatives. It aims to encourage consumers to choose eco-friendly options by making them more financially attractive.

The concept of green premium includes **two approaches:** (i) imposing additional charges or taxes on environmentally harmful items to discourage their use and (ii) providing incentives or benefits to promote the adoption of sustainable products and practices

Some successful implementations of Green Premium around the globe,

- San Francisco, USA - Zero Waste Program: San Francisco implemented a comprehensive Zero Waste Program that included a ban on single-use plastic bags. As an alternative, the city encouraged the use of reusable bags, which led to a significant reduction in plastic bag consumption and waste generation.
- Taiwan - Plastic Bag Ban and Recycling Rewards: Taiwan implemented a nationwide ban on single-use plastic bags in 2003. In addition to the ban, they introduced a recycling rewards program where citizens could exchange their used plastic bottles and bags for credits, which could be redeemed for various goods and services. This initiative significantly increased recycling rates and promoted eco-friendly alternatives.
- Singapore - BYO (Bring Your Own) Campaign: Singapore launched the BYO Campaign, encouraging consumers to bring their reusable containers and bags to reduce single-use plastic waste. Many retailers and restaurants joined the initiative by offering discounts or incentives to customers who brought their reusable containers.
- Mumbai, India - Plastic Bottle Exchange: In Mumbai, an NGO named Project Mumbai set up "Reverse Vending Machines" that offered rewards in the form of cash, mobile data, or discounts at local stores to individuals who deposited empty plastic bottles. This creative approach motivated people to recycle their plastic waste and opt for sustainable alternatives.

- Assessment of alternatives indicates that the government has taken initiative to map eco-friendly alternatives to each of the banned SUPs. Most of these alternatives show good future prospects for expansion in Tamil Nadu since these are made from native raw materials. The abundance of bagasse from

sugarcane waste and after paper production, availability of areca palm leaves, suitable climatic conditions for bamboo cultivation, and the utilisation of water hyacinth as an invasive plant demonstrate the State's rich potential for sourcing eco-friendly materials. These raw materials not only contribute to waste and carbon emission reduction but also align with the principles of sustainability and circular economy. With proper harvesting, processing, and manufacturing techniques, Tamil Nadu can further enhance its raw material resources to meet the increasing demand for sustainable alternatives.

- It has been noted that the mapped alternatives to SUPs are also largely single-use in nature. While this may be a key requirement for replacing SUPs at a commercial scale, need for efforts to promote reusable alternatives to the extent possible is felt. For example, promoting steel straws instead of paper straws and steel bottles instead of plastic bottles. Considering the issue of safety and hygiene when using at a commercial scale, such practices could be promoted at a household level. Focused initiatives to promote use of reusable materials at household level shall eventually translate into conscious choices in the external ecosystem.

The Table 25 showcases examples of behavioral changes leading to use of reusable alternatives to plastic that could be promoted at the household level.

*Table 25: Examples of behavioral changes at HH level to promote alternatives*

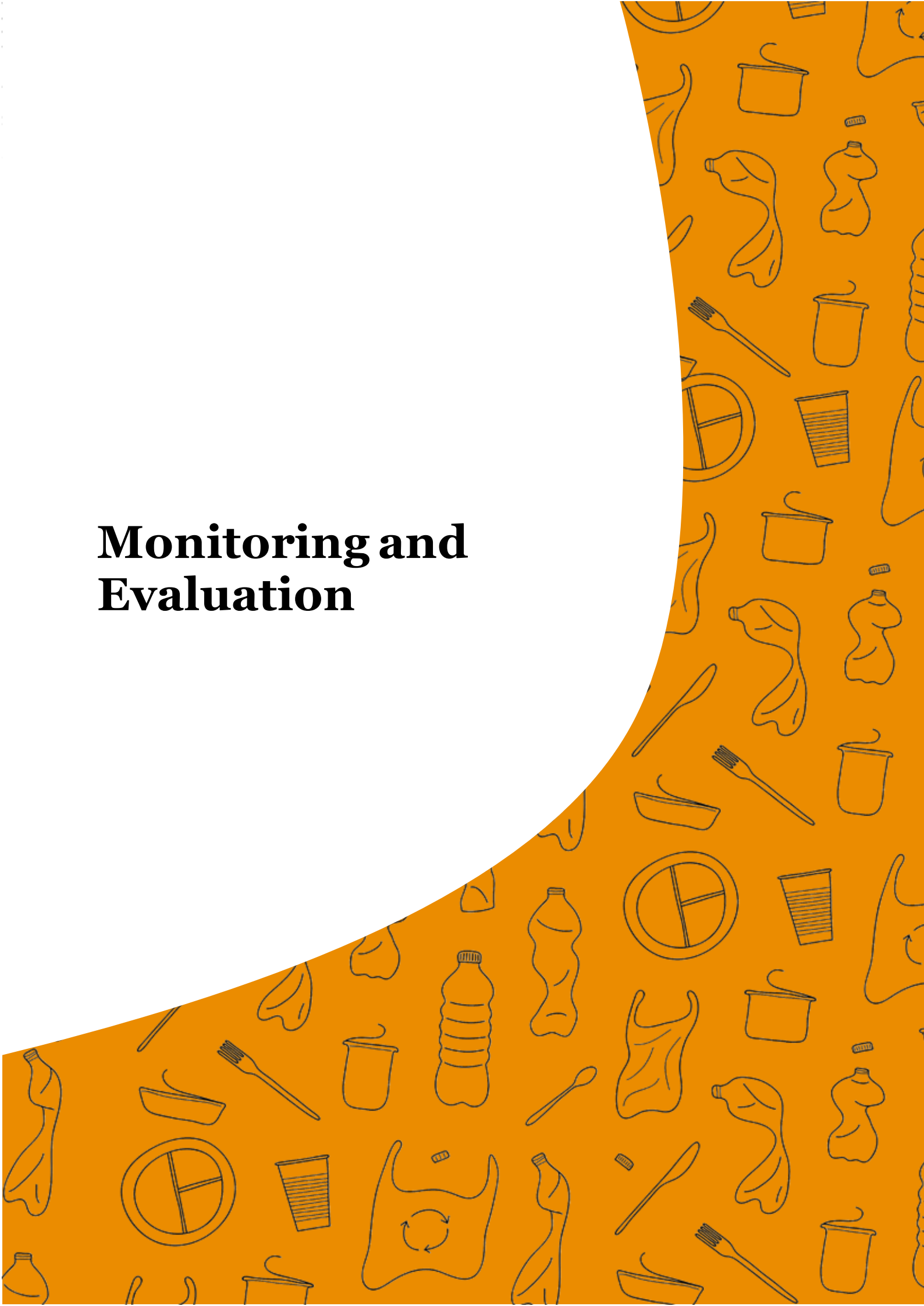
Category	Commonly Used Plastics & SUPs	Suggested Reusable Alternative
Shopping Bags	Single-use plastic bags	Reusable cloth or canvas bags
Water Bottles	Disposable plastic water bottles	Reusable stainless steel or glass bottles
Food Containers	Disposable plastic containers	Reusable glass or stainless-steel containers
Napkins and Paper Towels	Paper napkins and disposable paper towels	Cloth napkins and washable kitchen towels
Personal Care Products	Disposable wipes and menstrual products	Washable cloth wipes and menstrual cups
Coffee Cups	Disposable coffee cups	Reusable coffee cups or travel mugs
Cleaning Products	Single-use plastic spray bottles	Refillable containers for bulk cleaning products
Waste Disposal	Plastic garbage bags	Composting organic waste at home
Cutlery and Straws	Single-use plastic cutlery and straws	Reusable bamboo and stainless-steel cutlery and straws
Kitchen Practices	Single-use plastic packaging, excessive food waste	Reducing food waste, buying in bulk to minimise packaging, choosing fresh produce without plastic packaging

- The main focus of promotion of alternatives in Tamil Nadu had been towards promoting cloth bags instead of plastic carry bags. This focused action has to a great extent helped in creating a behavioral change among people. However, considering the need for a more paced outcome for ban on SUPs and adoption of alternatives, a roadmap for promotion of alternatives with prioritised promotion may be needed. In this context, it would be beneficial to focus on multiple SUPs and mapped alternatives simultaneously.
- Regarding the previous point, we may opt for a strategy aimed at achieving a comprehensive ban on specific single-use plastic (SUP) items, the utilization of which is determined and influenced by a restricted group of stakeholders, excluding the SUP end-users. For example, SUP food packaging and plastic

cutleries are widely used by restaurants and at events. Such use is chosen and determined by a limited category of stakeholders such as restaurants, caterers, event organisers, etc. In such scenario, use of these SUPs could be controlled, and corresponding use of mapped alternatives could be promoted through targeted action on these stakeholders. Existence of associations for most of these stakeholder groups provides relative ease in enforcing the ban among these stakeholders. Moreover, end users of these products have limited voice in such choices reducing level of impact of the shift to alternatives, on respective businesses.



# Monitoring and Evaluation



# 6 Monitoring and Evaluation

Monitoring and evaluation are essential for good governance as they provide feedback on the effectiveness of policies, programs, and services. They allow governments to identify successes and areas for improvement, enabling them to revisit and upgrade their strategies, to ensure that resources are used in the most effective way. In the case of plastic waste management, it becomes all the more important to track the progress of the policies in reducing use of plastic, effective implementation of the SUP ban, regular enforcement and bringing about a positive behavioral change among the public.

GoTN has created mechanisms to monitor the progress of the districts towards the implementation of the ban. GoTN has been undertaking annual reporting of the progress to CPCB and has also created a robust fortnightly reporting mechanism for the districts and ULBs.

This chapter identifies the monitoring mechanisms created by CPCB for the implementation of the SUP Ban and the monitoring and reporting mechanisms developed at the State level. Through the assessment of the current practices, the chapter identifies the challenges in successful monitoring of the SUP ban and the good practices in monitoring and evaluation that will help steer towards a successful monitoring and evaluation plan.

## 6.1 Reporting and monitoring mechanism by CPCB

The CPCB has established a mechanism for monitoring the implementation of the SUP ban across the States. The Board has set up data collection structure to monitor the progress on the Plastic Waste Management practices and implementation of the ban on SUPs on a daily, fortnightly and an annual basis. The CPCB updates their dashboard based on the data shared by SPCBs in the prescribed formats and also conducts monthly meetings to discuss the progress shared by the SPCBs.

### 6.1.1 Annual reporting requirements

The CPCB collects data on the annual progress of various actions undertaken by SPCBs in prescribed formats. As per “17(3)” of Plastic Waste Management Rule, 2016 (as amended) each SPCBs or Pollution Control Committee shall prepare and submit the Annual Report to CPCB on the implementation of PWM rules by the 31<sup>st</sup> of July each year. The annual reporting requirements of CPCB covering the PWM rules and the latest amendments have a detailed list of more than 30 data points to monitor the Plastic Waste Management (PWM) practices in the States. The broad grouping of the parameters is as given below.

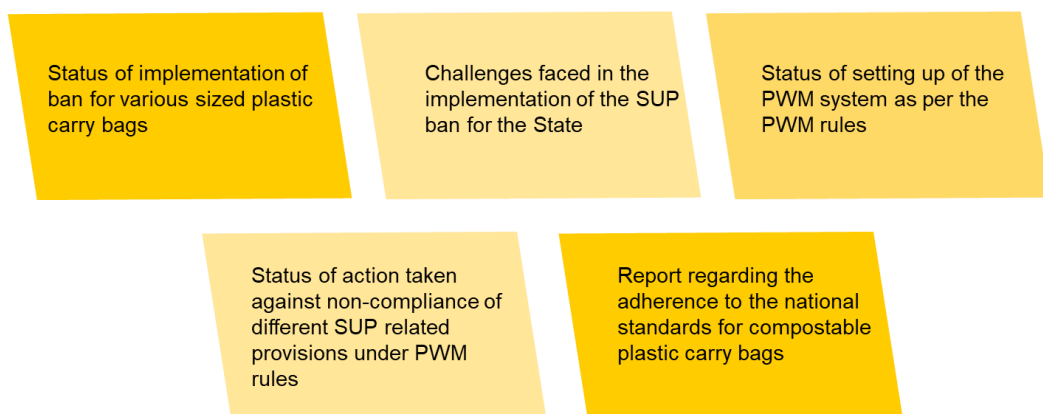


Figure 6-1: SUP related data requirements for CPCB annual reporting

Following the recent nationwide ban on SUPs, CPCB amended the PWM monitoring structure to include additional parameters to monitor progress achieved with respect to implementation of SUP ban. The changes to the reporting formats are not only limited to the ban on SUPs but also extended to monitor adoption of alternatives like compostable plastics. The specific data points covering aspects related to SUP ban in the reporting format include compliance towards the ban by consumers, manufacturers and related enforcement undertaken by SPCBs and the difficulties faced in the process. A snapshot of SUP related data requirements as mentioned by CPCB are as mentioned in the figure above. The consolidated format for submission of annual progress on Plastic Waste Management is as given in the Appendix A.1.

### 6.1.2 Fortnightly reporting requirements

In addition to the annual reporting mechanism, as per the Plastic Waste Management (2<sup>nd</sup> amendment) rules, 2022, CPCB in its comprehensive action plan for eliminating SUPs, mandated fortnightly reporting of activities conducted with respect to implementation of the ban by the SPCB/ PCCs through the SUP compliance monitoring module<sup>25</sup>. The portal was launched on 5 April 2022. The SUP compliance monitoring module is a Single Window Facility for filing of the fortnightly reports by SPCBs/PCCs/UTs. It tries to capture details on the enforcement initiatives like notices/ directions issued regarding the ban, market survey report, awareness plan etc., to provide a comprehensive overview of the compliance status of the SUP Ban. The broad areas of the data captured under this module as part of the fortnightly reporting are as given below.

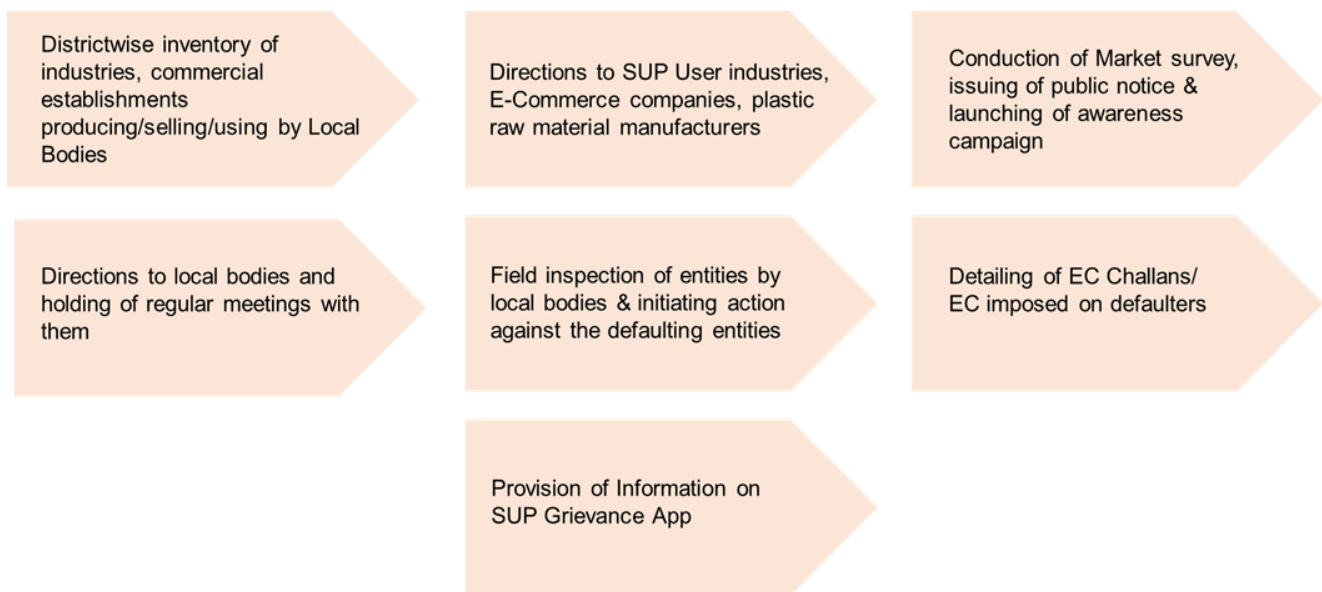


Figure 6-2: Broad areas of data capture under the SUP monitoring module

The detailed data submission format with indicators under each of the above heads as given in the CPCB monitoring module for SUP ban is presented in the upcoming section.

### 6.1.3 Daily reporting requirements

CPCB has introduced a mobile based application for daily reporting by the SPCBs, called the 'SUP field inspection app', for real time data reporting. This app serves as a tool for the district field inspectors to upload details of daily inspection including specific entity wise (such as shops, industries, resellers etc.) information. Under the app, there are detailed formats to capture information on the type of banned SUPs identified, quantity of banned SUPs seized, amount of fine levied on the shop etc., during the daily inspections done by

<sup>25</sup> <https://cpcbplastic.in/sup/>

the various district field inspectors. Furthermore, CPCB maintains a SUP Grievance application for the citizens to notify the violations with respect to the SUP Ban, that can be used to post a complaint against the entity/ stakeholder involved in violations with respect to the ban. While lodging the grievance, the complainant will be able to indicate the banned product used, the location of the violator and the images of the banned product used.

## 6.2 Current practices of monitoring and evaluation by TNPCB

The Tamil Nadu Pollution Control Board (TNPCB) reports on an annual basis as per the CPCB requirements. In addition to these, TNPCB has come up with independent fortnightly monitoring practices to ensure and understand the progress regarding the implementation of the SUP ban from each district of Tamil Nadu, with a focus on enforcement and awareness generation activities.

### 6.2.1 Annual reporting and monitoring practices

The revised annual reporting requirements as given by CPCB for the Plastic Waste Management annual report in total has more than 45 data points covering the entire plastic waste management lifecycle. Among these data points, around 13 data points are targeted towards the ban on SUPs, through recent amendments in the PWM rules. TNPCB reports in the given format on an annual basis to CPCB by collating the data collected from the ULBs (697 ULBs in Tamil Nadu). The status of the reporting by the ULBs and TNPCB to CPCB requirements are given in Table 26.

Table 26: Status of reporting and monitoring by TNPCB as per CPCB requirements

S.No.	CPCB reporting requirements for annual report	Reporting by TNPCB	Reporting by districts	Remarks
1.	Quantity of inert or rejects sent to landfill sites during the year (in tons)	No	Yes	Monitoring this data helps in estimating the reduction in SUP fraction in the total waste diverted to landfills
2.	Mention briefly, the difficulties being experienced by the local body in complying with provisions of these rules including the financial constraints, if any	No	No	It is necessary to collect the data to understand and overcome the implementation challenges faced by local bodies
3.	Implementation of ban on plastic carry bags of thickness of less than 75 microns (virgin/ recycled)	Yes	Yes	
4.	Whether the ULB has setup plastic waste management system as per Rule 6(2) (including collection, Segregation, channelisation & processing of plastic waste)	No	No	
5.	Whether plastic carry bags & plastic sheet of thickness < 50 micron banned or not?	Yes	Yes	
6.	Has complete ban on plastic carry bags been imposed?	Yes	Yes	
7.	Status of action taken on non-compliance	Yes	Yes	

S.No.	CPCB reporting requirements for annual report	Reporting by TNPCB	Reporting by districts	Remarks
	of SUP related provisions of PWM Rules			
8.	Status of marking & labelling on plastic carry bags & multi layered packaging	Yes	Yes	Very few ULBs (less than 10) have responded
9.	Status of phasing out of manufacture and use of multi-layered plastic which is non-recyclable or non-energy recoverable or with no alternate use of plastic in two years' time	Yes	Yes	Very few ULBs (less than 10) have responded
10.	Action taken against violators who use or promote use of carry bags made of virgin or recyclable plastic shall not be less than fifty microns in thickness	No	Yes	Very few ULBs (around 55 ULBs) have responded
11.	Action taken against violators who use or promote use of plastic sheet, or like which is not a multi-layered packaging, wrapping the commodity shall not be less than 50 microns in thickness except where the thickness of such plastic sheets impairs the functionality of the product.	No	Yes	Very few ULBs (around 55 ULBs) have responded
12.	Action taken against violators who use or promote use of sachets using plastic material shall not be used for storing, packing, or selling gutka, tobacco or pan masala	No	Yes	Very few ULBs (around 35 ULBs) have responded
13.	Carry bags made from compostable plastics shall conform to the Indian Standard IS I7008:2008 titled as specifications for compostable plastics as amended from time to time.	No	Yes	Very few ULBs (less than 10 ULBs) have responded

It is observed from the above table that details regarding the action taken against violators, disposal of inert or rejects and the challenges faced by ULBs in complying with the provisions are yet to be reported by TNPCB during their annual reporting to CPCB. This may also be attributed to lack or limited response received from the ULBs/ districts for these datapoints.

### 6.2.2 Fortnightly reporting and monitoring practices

TNPCB collects information regarding the inspection visits to the field on a fortnightly basis from the districts through the SUP monitoring portal. However, the fortnightly reporting to the CPCB was undertaken only for the initial one and a half months since the inception of the portal. It is yet to be resumed post that.

Beyond meeting reporting requirements laid down by CPCB, maintaining these data points also aids outcome-based planning of activities by the State and helps in taking corrective actions as needed.

In addition to the CPCB fortnightly reporting mechanism, TNPCB has formulated a fortnightly reporting mechanism for the districts where the enforcement related data is collected on a fortnightly basis from the ULBs (Municipal Corporations, Municipality and Town Panchayats). These are collated by the Directorate of Town Panchayats (DTP) and Commissionerate of Municipal Administration (CMA) and shared with TNPCB. The data points reported fortnightly by the ULBs are as given in Table 27.

Table 27: Fortnightly reporting requirements by TNPCB

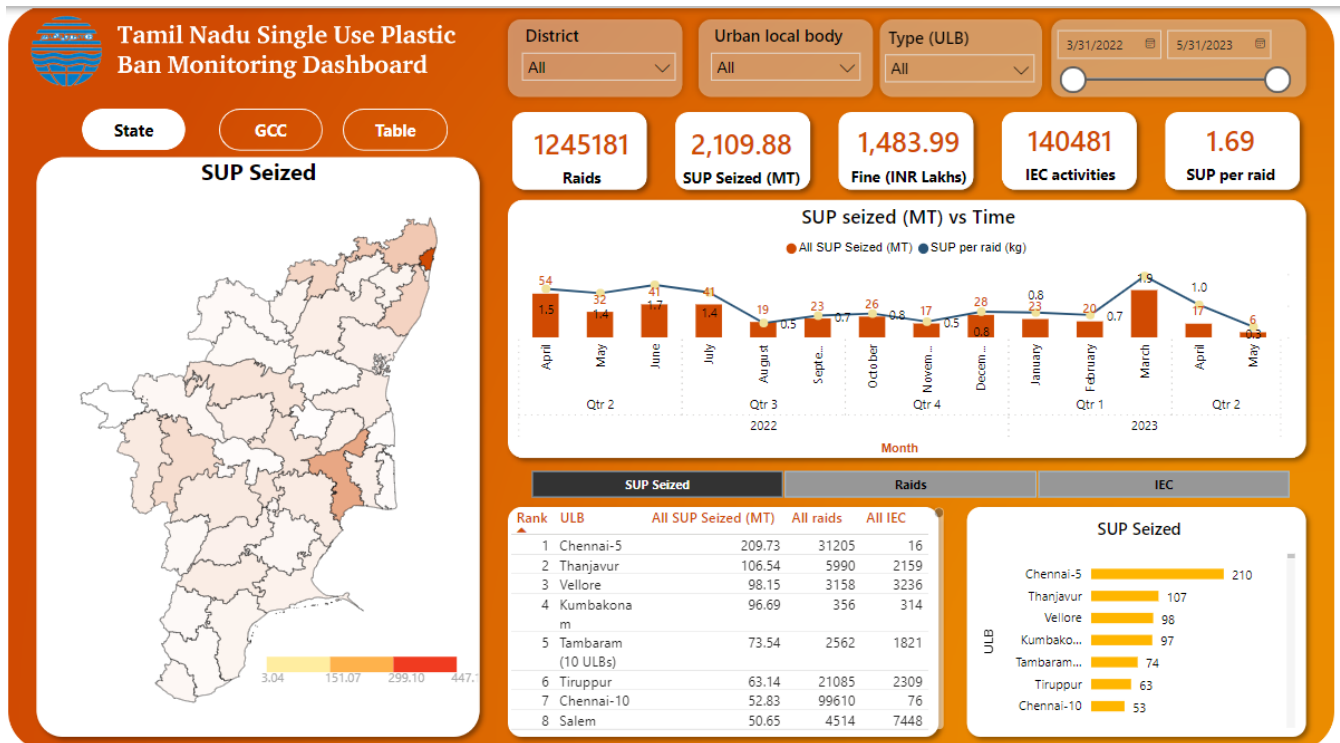
No. of IEC Activities Conducted	No. of Raids Conducted	Quantity of Banned Plastic Seizure	Fine Collected (Rs. In Lakhs)	Quantity of Manjappai's disseminated	No. of Manjappai vending machines installed
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DTP additionally reports on the number of shops on which fines are levied, quantity of SUPs sent for recycling or cement kilns, and quantity of SUPs stocked for disposal. Documentation of such data shall serve the real purpose of monitoring to a large extent.

Recently TNPCB proactively engaged in developing a dashboard for data documentation and reporting. The aforementioned data which is collected on a fortnightly basis is currently being updated on a dashboard in a timely manner to understand the progress and impact of enforcement activities internally. This greatly helps to receive insights on the progress towards enforcement of the SUP ban. A glimpse of the dashboard is as given in Figure 6-3. The dashboard displays the district wise and ULB wise progress on enforcement and IEC activities. The following details are captured by the dashboard for efficient monitoring.

These data points are captured for the urban areas of the State, district and ULB wise. The representation of the data is done through graphs and tables. The insights provided by the dashboard will help the State in analysing the status of the enforcement activities undertaken in the State and the extent of implementation of the SUP ban within the State.

Figure 6-3: Tamil Nadu SUP Ban Monitoring Dashboard



From the above observations, it is noted that the State has fortnightly reporting mechanism with a special focus on the enforcement activities like inspections, raids, seizures etc., and the awareness activities undertaken. However, it is noticed that the limited granularity in data collected limits extent of insights received from the same.

Some of the data points that could be further captured to carry out result-based monitoring are indicated in the table below.



Table 28: Additional parameters to assess on a fortnightly basis

S.No.	Parameters to assess on a fortnightly basis	Impact area
1.	Number of violators against whom action was taken in last 15 days with the violation type	Enforcement
2.	Quantity of SUPs collected in total in the last 15 days with the quantities sent for different processing methods	Plastic Waste Management /baselining
3.	No. of alternate manufacturing units in the district	Promotion of alternatives
4.	No. of entities who have shifted to alternates to SUPs	Promotion of alternatives
5.	Challenges faced by the entity towards the implementation of the SUP ban.	General
6.	Details of audience	Awareness campaigns
7.	Details of program conducted	Awareness campaigns
8.	Number of repeat offenders	Enforcement
6.	Details of audience	Awareness campaigns
7.	Details of program conducted	Awareness campaigns
8.	Number of repeat offenders	Enforcement
6.	Details of audience	Awareness campaigns
7.	Details of program conducted	Awareness campaigns
8.	Number of repeat offenders	Enforcement

### 6.2.3 Other initiatives for monitoring by TNPCB

Further to reporting to CPCB, TNPCB recently structured a data collection mechanism for monitoring the action taken by each of the line departments against the action points discussed in the State Task Force (STF) meetings. This process is in preliminary stages and the google forms along with the user guide have been circulated to the respective line departments. The data points collected range from type of awareness activities conducted, PWM processes followed, vending machines installed, complaints received etc. These are unique to each department/ ULB based on the action points discussed for them in the STF meetings. This platform will help in monitoring the progress of the departments towards the SUP ban by monitoring the actions undertaken by them.

## 6.3 Key Observations

- The CPCB reporting requirements for SPCBs are limited to certain parameters, most of which is qualitative in nature. Nevertheless, the reporting requirements cover some of the key aspects such as quantity of inert sent to landfills, market survey report and presence of an awareness plan. This indicates the emphasis on adequate planning to report as per the formats recommended by CPCB.
- In response to these requirements, the State is yet to start reporting on certain parameters. Some of these pointers (such as difficulties being experienced by the local body in complying with provisions of these rules



including the financial constraints), when promptly reported, would help in taking necessary steps to overcome the challenges faced at an implementation level.

- It is notable that in addition to CPCB requirements, SPCB has set up its own reporting mechanisms for capturing data from local bodies or district office. The details captured help in understanding the action taken by local bodies and gives adequate oversight and visibility to TNPCB. The timely data collection and documentation is satisfactory considering the recency of the SUP ban. At the same time, the formats used for such monitoring captures only limited data which hinders further evaluation of monitored data and taking corrective measures.
- As discussed in chapter 2, it is imperative to recognise the need for an outcome based and target oriented detailed action plan to set a baseline plan, to track progress against the same. The absence of such a plan limits granularity in the results of the monitoring and evaluation exercise.
- The data collection formats used so far, collected data in terms of only number of IEC activities, raids, quantity of plastic seized and fine collected. While it may serve as a preliminary data format to begin with, there is a need to capture granular details to verify and track the progress and alignment to the plan, regularly. For e.g., the data regarding the awareness activities does not cover the type of activities, nature of target audience etc. which is important to evaluate the efficiency of the program. Similarly, frequency of the enforcement activities undertaken is captured but details regarding the type of violations/ banned products captured/ nature of the industry that violated, etc. are not captured.
- The data collected needs review and interim checks to ensure authenticity of data and seek adequate backup details. This is also important for TNPCB to suggest corrective measures, if any, that needs to be taken
- Data collection is observed to be limited to urban areas and town panchayats. It is critical to monitor these in rural regions as well. Accordingly, a cluster approach to implementation and monitoring of SUP ban in rural areas could be considered. The TNPCB district offices could take a lead in this regard.
- Considering how crucial the SUP ban is, additional manpower capacity for data monitoring and processing is needed. This would help in looking into the data on a daily basis, assess data and report to senior officials. The manpower shall also coordinate activities related to establishing baselines and measuring results.
- Dedicated team shall also help in ensuring timely reporting of data to CPCB which shall help in improving the visibility of the efforts by GoTN.

The above observations point to the need for a result-based monitoring and evaluation. Result-based monitoring and evaluation is beyond data collection and reporting. It shall be aimed at evaluating the ability of a series of activities to achieve desired outcomes.

Result-based monitoring shall be achieved through a structured approach to monitoring and evaluation, which commences even before the implementation stage. Key steps involved in result-based monitoring for SUP ban may include the steps given in Table 29.

*Table 29: Key steps for result-based monitoring*

<b>Description of step</b>	<b>Requirement under the step</b>	<b>Indicative example for SUP ban</b>
Identify goals and outcomes and prepare a plan	Prepare a detailed plan or roadmap to achieve the desired outcomes in a time-based manner	Fix achievable outcomes for each year. For e.g.:

Description of step	Requirement under the step	Indicative example for SUP ban
		<p>- Overall reduction of SUP circulation by 20%.</p> <p>- Bring behavioral change among 20% households in rural and urban areas.</p> <p>To achieve desired outcomes, an action plan covering detailed activities for each stakeholder with clear planned target areas and action.</p> <p>- For e.g.: Define target segments, messages to be disseminated, intended number of target audience, locations for carrying out behavioral change and awareness campaigns.</p>
Define indicators	<p>Based on the detailed action plan and activities planned, establish indicators, and prepare data collection formats.</p> <p>Data collection formats shall be developed in order to be able to evaluate the outcome after a predefined period and take corrective action.</p>	<p>For example:</p> <ul style="list-style-type: none"> <li>- Data collection formats for plastic raids could include details of entity like name, location, type of plastic seized, quantity, age, receipt of notice, previous raids conducted, age of proprietor, awareness of ban, consent to operate etc.</li> <li>- Data collection for IEC activities could ask for attendance sheet or geo tagged photographs with date and time (wherever permissible)</li> </ul>
Define data collection methods and timeline	Emphasis on the need of digital monitoring to improve efficiency of monitoring and evaluation.	While reporting of IEC activities which do not warrant immediate action could have a timeline of monthly reporting, enforcement activities which may require legal or penal actions may be reported daily
Evaluate results <sup>26</sup>	After desired frequency of review of data, a survey shall be conducted to evaluate the results	Survey shall include aspects such as awareness levels of people, number of people who have stopped using SUPs during the evaluation period, fraction of SUPs in waste generated, fraction of SUP litter in plastic free zones etc.

<sup>26</sup> To evaluate results, it is essential that a baseline be established before execution of a series of planned activities

# Conclusion and way forward



# 7 Conclusion and way forward

The As-Is Assessment sheds light on the current state and effectiveness of the ban on single-use plastics, state of regulations and enforcement of the ban, and adoption of eco-alternatives to single use plastics in Tamil Nadu. Covering various key aspects of the ban; related to the regulatory ecosystem, enforcement, IEC & awareness, promotion of alternatives to SUPs, monitoring and evaluation of the progress made and IEC BCC initiatives, this assessment provides valuable insights on the current good practices followed by GoTN with respect to implementation of ban on SUPs and probable areas for requiring additional strategic focus. The following table summarizes the key intervention areas identified as part of the assessment.

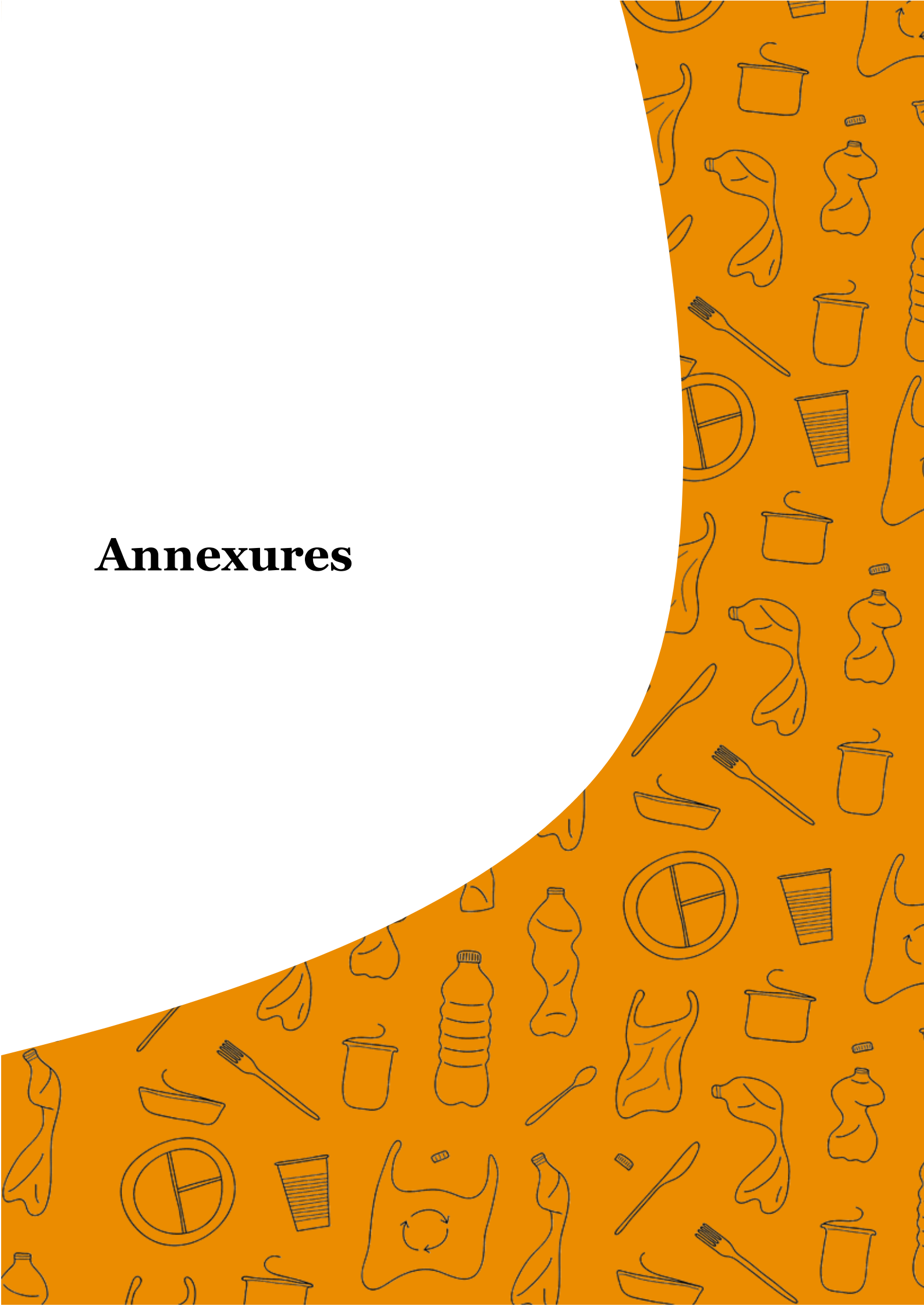
Table 30: Key suggestions and way forward

Aspects	Key areas of suggested interventions
Regulatory Ecosystem	<ul style="list-style-type: none"> <li>Need for dedicated capacity building and training sessions regarding PWM rules and provisions for the field inspection staffs for effective enforcement of SUP ban</li> </ul>
Enforcement of the Ban	<ul style="list-style-type: none"> <li>Detailed planning for enforcement activities with targets for each local body (urban and rural)</li> <li>Focused action on repeat offenders</li> <li>Identify target segments for enforcements such as manufacturers, sellers, users, wholesalers, street vendors, large commercial establishments etc.</li> <li>Evaluation of impact and restructuring of enforcement mechanisms to align with CPCB compensation guidelines</li> </ul>
IEC & Awareness activities	<ul style="list-style-type: none"> <li>IEC and awareness campaigns to focus on instilling behavioral changes alongside communication of information</li> <li>Scientific target specific plan for IEC – BCC activities</li> <li>Detailed documentation to track progress and evaluate impact of programs</li> <li>To collect data on IEC activities carried out in the Rural areas of the state</li> <li>Emphasis on promotion of Social Media pages and having a strong digital IEC strategy</li> </ul>
Promotion of Alternatives	<ul style="list-style-type: none"> <li>Establishing demand for alternatives through efforts to reduce cost to consumers through various initiative across the supply chain such as ensuring supply of raw materials,</li> <li>Financial incentives such as Tax rebates for machineries, tax incentives and exemptions for alternatives to plastic, green premium etc.</li> <li>Promotion of alternatives in both urban and rural areas</li> <li>Plan for prioritized approach to promotion of alternatives i.e., select top alternatives to be focused for promotion based on extent of use, impact, number of stakeholders involved etc.</li> </ul>
Monitoring & Evaluation	<ul style="list-style-type: none"> <li>Outcome based detailed action plan to set a baseline, against which progress shall be tracked</li> <li>Detailed and robust data collection formats to capture granular details</li> <li>Intermittent reviewing of data collected to ensure authenticity</li> <li>Dedicated team for analyzing data to make informed choices and to</li> </ul>

<b>Aspects</b>	<b>Key areas of suggested interventions</b>
	ensure timely reporting to CPCB

For all of the above broad categories of initiatives, planning, documenting and review of the initiatives (with respect to plan and outcome desired) forms the backbone of an outcome-oriented approach. This highlights the need for a futuristic, long term, incremental and prioritized approach to implementing ban on SUP while ensuring engagement of stakeholders all through the processes.

# Annexures



# ANNEXURES

## Chapter 1 – Introduction

No Annexure

## Chapter 2 – Review of Regulatory Ecosystem and State Action Plan

### 2.1 Status of action taken by TNPCB for the CPCB directions

Table 31: Status of action taken by TNPCB against the directions issued by CPCB

Date	Actions and tasks for SPCB	Status
Mar 2023	SPCB along with UDD officials shall inspect industrial units and UDD officials shall inspect commercial establishments for four days during the period March to August 2023	TNPCB along with ULB officials are conducting inspection raids and have completed for the month of March, April and May 2023
Sept 2022	SPCBs or Pollution Control Committee by itself or through a designated agency shall verify compliance of Producers, Importers & Brand-Owners through inspection and periodic audit, as deemed appropriate, of Producers, Importers & Brand-Owners as well as plastic waste processors in their jurisdiction as per the Plastic Waste Management Rule, 2016	No specific agencies dedicated for verify compliance
June 2022	Check whether manufactures print “not to be used in manufacture of SUP items prohibited under PWM rules” on packaging bags, invoices, MoU, and Sales contract /price lists.	Directly monitored by CPCB
Feb 2022	To direct ecommerce companies to discontinue selling of banned SUP items	Directly monitored by CPCB and later SPCB was directed to monitor
Feb 2022	To identify Major commercial establishments dealing in SUP items	TNPCB has closed operations of identified 218 Manufacturers of SUPs.
Feb 2022	Workshops with the entities commercial establishments to ensure zero inventory of SUP before 01 July 2022	Meetings were conducted with representatives of shopping malls, Hotels and Marriage Halls, TASMAL, Eco alternative manufacturers, composable plastic manufacturers  Sanction of 54 lakh for conducting regional workshops 5 July 2018 G.O. 30- Financial Sanction for conducting Regional Workshops



Date	Actions and tasks for SPCB	Status
		Regional conferences for plastic pollution free Tamil Nadu among various stakeholders at Chennai, Coimbatore, Trichy, Madurai, Tirunelveli, and Salem
Feb 2022	To take necessary action including cancellation of commercial licenses for a commercial establishment	TNPCB has directed all large industries to comply with plastic ban
Feb 2022	To issue fresh commercial licenses for stockiest, sellers, retailers, sellers, and commercial establishments with a condition that they will not stock, sell or use banned SUP	Revocation of licenses are done after renewal of CTO and CTE. Power supply is restored for industries which have dismantled and cleared the business lead on SUPs.
Feb 2022	To frame local bye laws for levying environmental compensation in line with CPCB guideline	ULBs have formed PWM by laws and the EC is levied as per the by laws
Feb 2022	Workshops and meetings with key stakeholders-key ministries directly/ indirectly involved or associated with production, storage, distribution, stocking, and sale of banned SUP items	As a part of State task force meeting actions are taken across line department on implementation of SUP ban
Feb 2022	To conduct field inspections in association with District Magistrate, District Police and Local urban and rural authorities as per format	Regular enforcement activities are conducted across the State  Monitoring groups formed by the district collector are carrying out enforcement of plastic ban notification  TNPCB in 13.02.2020 has informed all the district collectors to conduct district environmental committee meetings and form monitoring committee comprising of line departments for carrying out joint inspections and massive enforcement activities
Feb 2022	To identify SUP producers engaged in production of banned SUP items through contact tracing/ public notices and action against them in association with local authorities	Issued a press release on 23.11.2021 to seek cooperation of the public by way of appreciation and reward
Feb 2022	To coordinate with State authorities to ensure grievance raised in the SUP app or other similar apps and resolve	TNPCB coordinates with ULBs in resolving the complaints raised in the app and the same is updated in the portal

Date	Actions and tasks for SPCB	Status
		daily
Feb 2022	To take penal action/ levy EC on violators	The violators are penalized based on ULB bylaws penalty
Feb 2022	<p>To be executed through other agencies</p> <ul style="list-style-type: none"> <li>• To provide necessary assistance for convening of training programs of MSMEs involving CIPET, CPCN, and MSME State institute to facilitate transition from SUP to alternatives by MSMEs</li> <li>• To conduct market survey through Third Party Agency to phase out banned SUP items</li> <li>• Submit detailed awareness program for elimination of SUP along with timelines</li> <li>• Submit fortnightly reports 5<sup>th</sup> and 20<sup>th</sup> of every month to CPCB as per format Annex II</li> </ul>	<ul style="list-style-type: none"> <li>• Workshops for alternative eco products conducted at all districts</li> <li>• Exhibit vehicle was inaugurated by the Hon'ble Chief minister of Tamil Nādu a created awareness at 75 locations all over Tamil Nādu</li> <li>• Awareness created through various media – website, social media, theatres, shopping malls</li> <li>• Display boards of banned items at 45 toll plazas across NHA1</li> <li>• TNPCB Board proceeding N.75 dated 28.11.2019 granted INR 64 lakh to member secretary EMAT to carryout awareness activity “Message on Wheels”.</li> <li>• TNPCB had requested Centre for Environment &amp; studies and Anna University, Chennai to furnish their willingness to carry-out the market survey and assessment of SUP in the Cities – Chennai, Tiruvallur, Kanchipuram, Chengalpattu</li> <li>• TNPCB along with IIT Madras conducted study to identify eco sensitive areas to ban use of Single use plastic and identification of alternative to SUPs</li> <li>• Market Survey to be conducted</li> </ul> <p>Fortnightly reports are prepared and submitted</p>
Feb 2022	<p>Manufacturers to not supply plastic raw materials to producers engaged in production of banned SUP items</p> <p>Ensure suppliers/stockiest /dealers not to supply raw materials to producers engaged in production of banned SUP items</p>	Directly monitored by CPCB and later SPCB was directed to monitor
Feb 2022	Constitution of State Task Force for effective implementation of the plastic ban and to prepare a Comprehensive Action Plan (CAP) for	State Level Special Task Force was constituted under the chairmanship of Chief Secretary, GoTN on 07.02.2022 as

Date	Actions and tasks for SPCB	Status
	<p>implementation of the Plastic Waste Management Rules, 2016.</p> <ul style="list-style-type: none"> <li>• prepare comprehensive action plan</li> <li>• Assess plastic waste generated in the state- identify gaps in policy, implementation, enforcement</li> <li>• Strengthen policy, regulatory, institutional mechanisms for implementation of PWM 2016 rules</li> <li>• Measures for effective enforcement of PWM rules</li> <li>• Develop policies for supporting the adoption of alternatives for identified SUP</li> <li>• Measures strengthen Urban local Bodies/ gram panchayats on the storage, transport, collection, segregation, disposal, processing</li> <li>• Measures of monitoring of implementation of PWM rules</li> <li>• Road map for activities to build awareness and outreach</li> <li>• Strategy for building a strong public movement for mitigation of plastic pollution by involving schools, clubs, NGOs with a detailed action plan</li> <li>• Effectively implement Meendum Manjappai campaign</li> <li>• Promote Eco alternatives by effectively documenting and incentivizing such initiatives</li> </ul> <p>District level</p> <ul style="list-style-type: none"> <li>• Implement the comprehensive action plan prepared by STF at district and city level</li> <li>• District level TF will submit the plastic generated in the respective districts with collection, recycling and end of life disposal and identify gaps</li> <li>• Necessary measures for effective enforcement of PWM rules and ban imposed</li> <li>• Measures to strengthen the ULB/ GM for the storage, transport, collection, segregation, disposal, processing</li> <li>• District level task force shall conduct necessary awareness with strong public movement for mitigation of plastic pollution</li> </ul>	<p>per GO 25</p> <p>05/03/2022 – 1st meeting of State level special task force</p> <p>03/03/2023 - 2nd meeting of State level special task force</p>

Date	Actions and tasks for SPCB	Status
	<ul style="list-style-type: none"> <li>• Shall promote eco alternatives</li> </ul>	
Feb 2022	The funds collected under environmental compensation shall be kept in a separate Escrow account by Central Pollution Control Board or SPCBs or Pollution Control Committee. The funds collected shall be utilized in collection, recycling, and end of life disposal of uncollected and non-recycled or non- end of life disposal of plastic packaging waste, on which the environmental compensation is levied. Modalities for utilization of the funds for plastic waste management on an annual basis would be recommended by the Committee for Extended Producer Responsibility implementation and approved by the Competent Authority in the Ministry	Escrow account has not been formed and the fine collected is added in the ULB accounts
Feb 2022	SPCBs or Pollution Control Committee will establish a mechanism to ensure a regular dialogue between relevant stakeholders involved in the fulfilment of extended producer responsibility obligations under the Plastic Waste Management Rule, 2016.	EPR cell was setup for providing guidance to PIBOs and PWPs
Feb 2022	SPCBs or Pollution Control Committee shall carry out a compositional survey of collected mixed municipal waste to determine the share of plastic waste as well as different categories of plastics packaging material on a half-yearly basis.	Compositional survey has not been undertaken
July 2021	SPCB/ PCCs to conduct quarterly assessments of phasing out SUPs in their jurisdiction	The quarterly assessments are not being carried out by TNPCB
June 2021	Govt of India decided to form special task force under chairmanship of chief secretary of govt for taking measures to eliminate SUP and to prepare a comprehensive action plan for implementation in a mission mode	TNPCB has prepared Comprehensive Action plan
Oct 2020	Directions for setting up institutional mechanism for enforcement of provisions of PWM rules	-
Oct 2020	Enforcement of provisions of PWM rules for storing, packaging, or selling cigarette, gutkha, tobacco, and pan masala in all forms	The Brand Owners submit PWM plan as per PWM rules to Urban Development Department.
Sept 2020	Hon'ble NGT order "CPCB and SPCB to workout	The district action plans on IECs were

Date	Actions and tasks for SPCB	Status
	<p>enforcement strategies, including action plan in all districts, involving educational, religious and other institutions”</p> <p>One model district has to identified and made compliant</p>	<p>prepared and shared with District environmental engineers</p> <p>No specific enforcement strategy for Enforcement has been developed</p> <p>Kolathur and Vilivakkam was selected as model constituency to make it compliant.</p>
Nov- 2019	Status of Marking & Labeling on Carry bags/Multilayered Packaging recyclable, type)	Tamil Nadu has banned plastic carry bags irrespective of thickness hence it does not apply
Sept 2019	<p>Hon'ble National Green Tribunal vide order dated 26/09/2019 in O.A. No. 360 of 2018 directed that CPCB shall facilitate the District Magistrates in preparation of District Environmental Plan by placing Model plan on its website. This model plan may be adopted as per local requirements by all Districts under supervision of District Magistrate. The said Order also directs that Department of Environment in respective States / UTs should collect district plans to prepare State Environment Plan, which shall be monitored by respective Chief Secretaries of State/UT by 15/12/2019.</p>	District Environment plan and State environment plan was submitted to PCCB by Department of Environment and required revision as per CPCBs comments
July 2019	PCBs/PCCS should constitute vigilance squad in collaboration with Concerned Municipalities to check surprisingly thickness of carry bags (both manufacturing & stocking), for not allowing	<p>TNPCB officials along with ULB officials conduct raids to check on usage of SUP and violations as per PWM rules 2016.</p> <p>TNPCB in 13.02.2020 has informed all the district collectors to conduct district environmental committee meetings and form monitoring committee comprising of line departments for carrying out joint inspections and massive enforcement activities</p>
Sept 2017	States to constitute State Level Monitoring Committee (SLMC) Body for implementation of PW (M&H) Rules, 2011	State level steering committee was formed, and meetings were held 12/07/2018, 30-08-2018, 08-11-2018

## Chapter 3 – Enforcement of ban

### 3.1 Fine structure as per the Environment Compensation for violations against SUP ban<sup>27</sup>

Table 32: Fine structure according to the Environment Compensation for violations against SUP ban

Violator type	Violation	EC 1 <sup>st</sup> violation (Rs.) and action taken	EC 2 <sup>nd</sup> violation (Rs.) and action taken	EC 3 <sup>rd</sup> violation (Rs.) and action taken
Producer	Manufacturing plastic bags not meeting Specifications, Manufacturing plastic sheet	i. Seizure of manufactured products & closure of unit ii. 5,000 per ton	i. Seizure of manufactured products & closure of unit ii. 10,000 per ton	i. Seizure of manufactured products & closure of unit ii. 20,000 per ton
	Production of prohibited SUP items	i. 5,000 per ton ii. Revocation of consent	i. 10,000 per ton ii. Revocation of consent	i. 20,000 per ton ii. Revocation of consent
Manufacturer	Certificate not obtained	5,000 per ton	-	-
	Not complying with conditions specified in Certificate issued by CPCB, Failure of final testing of the sample as per IS:17899 T:2022	i. Cancellation of CPCB Certificate and closure of Unit ii. 5,000 per ton	i. Cancellation of CPCB Certificate and closure of Unit ii. 10,000 per ton	i. Cancellation of CPCB Certificate and closure of Unit ii. 20,000 per ton
	Unit operating without Registration	i. Closure of unit ii. 2,500 per ton	i. Closure of unit ii. 5,000 per ton	i. Closure of unit ii. 10,000 per ton
	Raw material sold to producers not having registration from SPCB	2,500 per ton	5,000 per ton	10,000 per ton, and closure of unit thereafter
Stockist/distributors	Stocking and distribution of prohibited SUP items or Selling products in plastic bags which are not complying with provisions of PWM Rules	i. Seizure of SUP products or bags/sheets ii. Cancellation of Commercial license by concerned Local Authority iii. 2,000	i. Seizure of SUP products or bags/sheets ii. Cancellation of Commercial license by concerned Local Authority iii. 5,000	i. Seizure of SUP products or bags/sheets ii. Cancellation of Commercial license by concerned Local Authority iii. 10,000
Importer	Import of prohibited SUP items	i. Seizure of imported SUP products ii. Cancellation of Registration Certificate by Custom	i. Seizure of imported SUP products ii. Cancellation of Registration Certificate by Custom	i. Seizure of imported SUP products ii. Cancellation of Registration Certificate by Custom

<sup>27</sup> [https://cpcb.nic.in/uploads/plasticwaste/EC\\_Regime\\_PWM.pdf](https://cpcb.nic.in/uploads/plasticwaste/EC_Regime_PWM.pdf)

		iii. Authorities 2000	iii. Authorities 5000	iii. Authorities 10,000
Commercial establishments	Selling of prohibited SUP items or Selling products in plastic bags which are not complying with provisions of PWM Rules	i. Seizure of SUP products or bags/sheets ii. Cancellation of Commercial license by concerned Local Authority. iii. 2000	i. Seizure of SUP products or bags/sheets ii. Cancellation of Commercial license by concerned Local Authority. iii. 5000	i. Seizure of SUP products or bags/sheets ii. Cancellation of Commercial license by concerned Local Authority. iii. 10,000
Street vendor	Selling of prohibited SUP items or Selling products in plastic bags which are not complying with provisions of PWM Rules	200	500	1000
Municipal Commissioner, Village Panchayat,	Adequate facilities for plastic waste management (PWM) not provided	5,000 per ton	10,000 per ton	20,000 per ton
Person responsible for plastic burning Industries	Burning plastic	i. Fine per incident of burning: 5000 ii. Fine per incident of bulk burning: 25000	-	-
Waste generator	Waste not segregated, Waste littered	i. Waste generator: 500 ii. Institutional waste Generator:5000	i. Waste generator: 500 ii. Institutional waste Generator:5000	i. Waste generator: 500 ii. Institutional waste Generator:5000
Manufacturer/ Producer/Brand owner	Not following labelling requirements	i. Cancellation of Registration/CP CB certificate. ii. 2000	i. Cancellation of Registration/CP CB certificate. ii. 5000	i. Cancellation of Registration/CP CB certificate. ii. 10,000



## Chapter 4 - IEC and Awareness Activities

### 4.1 IEC programs conducted by ULBs

Table 33: IEC programs conducted by ULBs

S.No.	District	No. of IEC events conducted so far
1.	Salem	10699
2.	Coimbatore	9896
3.	Ranipet	8718
4.	Thirupathur	6912
5.	Thiruvallur	6747
6.	Virudhunagar	6497
7.	Vellore	6320
8.	Madurai	6044
9.	Thoothukudi	5640
10.	Cuddalore	5104
11.	Tiruvannamalai	5002
12.	Tirupur	4569
13.	Chengalpattu	4391
14.	Tiruchirappalli	4145
15.	Erode	3993
16.	Theni	3715
17.	Villupuram	3704
18.	Dindigul	3691

19.	Kanyakumari	3640
20.	Kancheepuram	3499
21.	Namakkal	3278
22.	Thanjavur	3143
23.	Ramanathapuram	2464
24.	Tenkasi	2296
25.	Tirunelveli	2061
26.	Kallakurichi	2033
27.	Krishnagiri	1856
28.	Pudukottai	1807
29.	Sivagangai	1763
30.	The Nilgiris	1595
31.	Tiruvarur	1468
32.	Karur	1379
33.	Chennai	732
34.	Dharmapuri	500
35.	Mayiladuthurai	477
36.	Nagapattinam	475
37.	Ariyalur	442
38.	Perumbalur	283
	<b>Total</b>	<b>124413</b>

## 4.2 Awareness programs conducted by TNPCB

Table 34: Awareness programs conducted by TNPCB

Sl. No.	Name of the District Office	Number of awareness program conducted (June 2021 to November 2022)	Total Number of Participants (Students, General public) in the awareness program
1.	Ambattur	4	1650
2.	Chennai	10	100000
3.	Gummidipoondi	4	2000
4.	MM Nagar	8	3000
5.	Sriperumbudur	11	3700
6.	Tiruvallur	6	800
7.	Coimbatore North	68	15500
8.	Coimbatore South	22	2700
9.	Tirupur North	10	5500
10.	Tirupur South	4	1500
11.	Ooty	26	75000
12.	Ariyalur	12	6500
13.	Pudukkottai	15	9750
14.	Thanjavur	24	7000
15.	Trichy	23	4600
16.	Cuddalore	23	14450
17.	Nagapattinam	29	15000
18.	Madurai	9	9500
19.	Dindigul	78	5000
20.	Theni	13	8500
21.	Ramanathapuram	2	50
22.	Sivagangai	8	4896
23.	Nagercoil	6	2300
24.	Thoothukudi	7	4000
25.	Tirunelveli	3	650
26.	Virudhunagar	8	27000
27.	Vellore	4	7190
28.	Vaniyambadi	4	1550
29.	Villupuram	18	3000
30.	Tiruvannamalai	10	230
31.	Hosur	8	3600

32.	Dharmapuri	61	15000
33.	Salem	10	27300
34.	Namakkal	6	6250
35.	Kumarapalayam	7	5000
36.	Erode	5	3100
37.	Perundurai	10	2800
38.	Karur	4	3000
<b>Total</b>		<b>580</b>	<b>408566</b>

## Chapter 5 – Promotion of Alternatives

### 5.1 Supply Demand Calculations

Table 35: Assumptions made for the demand and supply calculation

S. No.	Assumptions and Calculations
1	<p>SUP Cutlery:</p> <p>The average weight of a single piece from grams to kilograms: 3 grams = 0.003 kilograms</p> <p>The total weight of 176 million pieces of plastic cutlery: 0.003 kg/piece * 176,000,000 pieces = 528,000 kg</p> <p>weight from kilograms to kilotons: 528,000 kg = 528 t = 0.53 kt</p>
2	<p>Plastic stirrers:</p> <p>The average weight of a single plastic stirrer is 0.5 grams.</p> <p>To calculate the weight of 7.2 million plastic stirrers in kilotons (kt), we can follow these steps:</p> <p>Convert the average weight of a single stirrer from grams to kilograms: 0.5 grams = 0.0005 kilograms.</p> <p>Calculate the total weight of 7.2 million plastic stirrers: 0.0005 kg/stirrer * 7,200,000 stirrers = 3,600 kg.</p> <p>Convert the weight from kilograms to kilotons: 3,600 kg = 3.6 t = 0.004 kt</p>
3	<p>Plastic tumblers:</p> <p>The average weight of a single plastic tumbler is 10 grams.</p> <p>To calculate the weight of 225 million plastic tumblers in kilotons (kt), we can follow these steps:</p> <p>Convert the average weight of a single tumbler from grams to kilograms: 10 grams = 0.01 kilograms.</p> <p>Calculate the total weight of 225 million plastic tumblers: 0.01 kg/tumbler * 225,000,000 tumblers = 2,250,000 kg.</p> <p>Convert the weight from kilograms to kilotons: 2,250,000 kg = 2,250 t = 2.25 kt</p>
4	<p>Plastic straws:</p> <p>The average weight of a single plastic straw is 0.2 grams.</p> <p>To calculate the weight of 72 million plastic straws in kilotons (kt), we can follow these steps:</p> <p>Convert the average weight of a single straw from grams to kilograms: 0.2 grams = 0.0002 kilograms.</p> <p>Calculate the total weight of 72 million plastic straws: 0.0002 kg/straw * 72,000,000 straws = 14,400 kg.</p> <p>Convert the weight from kilograms to kilotons: 14,400 kg = 14.4 t = 0.014 kt</p> <p>Therefore, based on the assumption that the average weight of a single plastic straw is 0.2 grams, the weight of 72 million plastic straws would be approximately 0.014 kt</p>

S. No.	Assumptions and Calculations
5	<p>Single use carry bag</p> <p>To determine the cost of a single plastic carry bag, we need to divide the price per kilogram by the weight of a single bag. Let's assume the average weight of a single plastic carry bag is 10 grams (0.01 kg).</p> <p>The price range of Rs. 80-95 per kilogram can be converted to cost per gram by dividing it by 1000.</p> <p>Cost per gram = <math>(80 / 1000) - (95 / 1000) = \text{Rs. } 0.08 - \text{Rs. } 0.095</math></p> <p>Now, we can calculate the cost of a single plastic carry bag:</p> <p>Cost of a single bag = Cost per gram * Weight of a single bag</p> <p>Multiply the cost per gram by the weight of a single bag, which is 10 grams (0.01 kg). This gives Rs. 0.8-0.95 per bag.</p> <p>The final answer is that the cost of a single plastic carry bag ranges from Rs. 0.8 to Rs. 0.95, depending on the price per kilogram.</p> <p>Therefore, the cost of a single plastic carry bag would be approximately Rs. 0.88.</p>
6	<p>Non-woven carry bags</p> <p>To determine the price of a single non-woven carry bag, we need to divide the price per kilogram by the weight of a single bag. Let's assume the average weight of a single non-woven carry bag is 20 grams (0.02 kg)</p> <p>The price range of Rs. 100-120 per kilogram can be converted to cost per gram by dividing it by 1000.</p> <p>Cost per gram = <math>(100 / 1000) - (120 / 1000) = \text{Rs. } 0.1 - \text{Rs. } 0.12</math></p> <p>Now, we can calculate the price of a single non-woven carry bag:</p> <p>The price range of Rs. 100-120 per kilogram can be converted to cost per gram by dividing it by 1000. This gives us a range of Rs. 0.1-0.12 per gram.</p> <p>To determine the price of a single non-woven carry bag, we need to multiply the cost per gram by the weight of a single bag. Let's assume the average weight of a single non-woven carry bag is 20 grams (0.02 kg).</p> <p>Therefore, the price of a single non-woven carry bag is Rs. <math>0.1 \times 20 = \text{Rs. } 2</math> at the lower end of the range, and Rs. <math>0.12 \times 20 = \text{Rs. } 2.4</math> at the higher end of the range.</p> <p>So, the price of a single non-woven carry bag is between Rs. 2 and Rs. 2.4 ~ Rs. 2.1</p>

S. No.	Assumptions and Calculations
7	<p>To calculate the price difference between plastic carry bags and cloth bags in percentage, we can use the following formula:</p> $\text{Price Difference (\%)} = [(\text{Cloth Bag Price} - \text{Plastic Carry Bag Price}) / \text{Plastic Carry Bag Price}] * 100$ <p>Using the given prices:</p> <p>Plastic Carry Bag Price = Rs. 0.88 per piece</p> <p>Cloth Bag Price Range = Rs. 5 - 10 per piece = Rs. 7.5 per piece</p> $\text{Price Difference (\%)} = [(7.5 - 0.88) / 0.88] * 100$ $\text{Price Difference (\%)} = [6.62 / 0.88] * 100$ $\text{Price Difference (\%)} = 7.52 * 100$ $\text{Price Difference (\%)} = 752$ <p>So, the price difference between plastic carry bags and cloth bags is 752%, which means cloth bags are much more expensive than plastic bags.</p>

### 5.3.2 Assessment of the suitability of the identified alternatives with respect to cost and convenience

The ratings in the suitability of alternatives were determined by considering the following general guidelines:

#### Functionality and Performance:

##### Suitable:

- Alternatives in this category provide a high level of functionality and performance that is comparable to or even better than traditional options.
- They effectively fulfill the intended purpose, meet user requirements, and deliver satisfactory performance in various applications.
- These alternatives offer a seamless transition for users, requiring little to no adjustments or compromises in terms of functionality.
- They provide a reliable and efficient user experience, ensuring that tasks can be accomplished effectively and without significant limitations.

##### Moderately Suitable:

- Alternatives in this category offer reasonable functionality and performance, although they may have some limitations or trade-offs compared to traditional options.
- They may require slight adjustments or adaptations in user habits or processes to achieve optimal performance.
- These alternatives can still meet the basic functional requirements and provide satisfactory performance in most situations.
- While they may not be the most ideal choice in all scenarios, they offer a viable and acceptable alternative to traditional options.



### Marginally Suitable:

- Alternatives in this category have limitations in terms of functionality and performance compared to traditional options.
- They may not fully meet user requirements or deliver the same level of performance, potentially leading to certain inconveniences or drawbacks.
- These alternatives may have specific use cases or limitations in terms of durability, strength, usability, or compatibility with certain applications.
- While they can still serve as alternatives, they may not be the optimal choice for all users or situations.

## 5.4 Existing Supply

Tamil Nadu has over 1045 number of units engaged in production and distributions of alternatives to plastic such as cloth bags, areca plates, paper boxes & wooden cutlery. Based on the production capacities of such reported units, the following table presents the estimated quantities of alternatives to various forms of SUPs available in the market.

Table 36: Production capacity of eco-alternatives in Tamil Nadu

Mapped alternative	No. of production units in TN (A)	Avg. production capacity/day/unit (B)	Avg. Existing capacity/day (D=A*B)
Wooden cutlery	17	2000 pieces	34000 pieces
Areca/Palm Leaves cutlery	12	2250 pieces	27000 pieces
Edible cutlery	9	2750 pieces	24750 pieces
Compostable plastics cutlery	20	17500 pieces	350000 pieces
Cloth bag	185	3000 pieces	555000 pieces
Compostable bag	38	720 kg	27360 kg
Paper bag	111	960 kg	106560 kg
Jute bag	90	1000 pieces	90000 pieces
Bamboo sticks	7	3000 pieces	28000 pieces
Bagasse trays	5	3500 pieces	14000 pieces
Areca plates	236	2000 pieces	472000 pieces
Lotus leaf plates	4	1000 pieces	4000 pieces
Bamboo plates	1	3000 pieces	3000 pieces
Banana fiber plates	2	2000 pieces	4000 pieces
Corn starch plates	2	10000 pieces	20000 pieces
Terracotta cups	27	1000 pieces	54000 pieces
Bagasse cups	7	3500 pieces	245000 pieces

Areca leaf tumblers	21	3000 pieces	63000 pieces
Aluminum foil	4	2750 kg	11000 kg
Butter paper	4	2500 kg	10000 kg
Compostable plastic wrapping	11	1000 kg	11000 kg
Beeswax wax wrapping	4	200 kg	800 kg
Paper roll	25	720 kg	18000 kg
Paper boxes	115	263 kg	27140 kg
Paper invitation	48	5000 pieces	240000 pieces
Compostable plastic films	21	1 ton	21 ton
Paper straws	11	80000 pieces	880000 pieces
Compostable straws	8	100000 pieces	800000 pieces

*Note: The data presented in the table for existing supply of alternatives in Tamil Nadu is based on information obtained from the India Mart website regarding the average production capacity per day per unit. It is important to note that these figures represent average production capacities and may vary for different manufacturers or suppliers. The data serves as a reference point to assess the existing supply of alternative products in the region. Also, factors such as market demand, production efficiency, and supply chain dynamics may influence the actual availability of alternative products in the market.*

## 5.5 Locations of Manjappai Vending Machines

Table 37: Installed Manjappai Vending Machines Locations

Sl. No	District	Machine Capacity (no. of bags)	Location Address	Manjappai Vending Machine	
				Latitude	Longitude
1	Madurai	500	Shopping Complex area, Madurai Bench of Madras High Court.	9.9530992	78.1841588
2	Madurai	500	In waiting place (left side) of the Main Entrance of Law chamber Block, Madurai Bench of Madras High Court.	9.9531328	78.1864534
3	Madurai	500	Main entrance - Southern side of the Combine Court Building Campus, District Court, Madurai	9.9672929	78.142655
4	Madurai	500	Western side entrance of the Combined Court Building Campus, District Court, Madurai	9.9376584	78.1421849
5	Madurai	500	Infront of the ADR Centre, Madurai District Court	9.9371949	78.1419704
6	Ramanathapuram	100	Government Medical College Hospital, Raja suriya madai Village, Ramanathapuram District 623 501	9.364371	78.832535
7	Sivagangai	100	Collectorate Complex, Sivagangai	9.86166	78.48981
8	Sivagangai	100	Sivagangai Bus Stand, Sivagangai	9.84883	78.48977
9	Sivagangai	100	Anna Municipal Daily Market, Karaikudi Municipality, Sekkalai Road, Karaikudi, Sivagangai	10.07.124	78.77059
10	Sivagangai	100	Manamdurai Bus Stand, Manadanudi, Sivagangai	9.68753	78.45026
11	Sivagangai	100	Near Amma Unavagam, Devakotai Bus Stand, Devakottai, Sivagangai	9.94733	78.82096
12	Dindigul	500	Palani Bus Stand	10.449164	77.51587
13	Dindigul	100	Oddanchatram	10.484627	77.742711
14	Dindigul	100	Dindigul Collectorate Campus	10.391346	77.963309
15	Dindigul	100	Vedasandur	10.531242	77.94532
16	Dindigul	100	Dindigul Bus Stand	10.390357	77.963208
17	Theni	100	154, Grand Southern Trunk Road, Kottai Kalam, Theni, Theni District.	10.0215731	77.479977

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				Latitude	Longitude
18	Theni	100	R.I.Office Road, Amaravathi Nagar, Bodinayakanur Taluk, Theni District	10.0075289	77.3495995
19	Theni	100	Park Road, Near Ulavar Sandhai, Maalaikkovil, Cumbum Village, Uthamapalayam Taluk, Theni District	9.7352684	77.2823539
20	Theni	100	Town Panchayat office, Kottai Medu, Uthamapalayam Taluk, Theni District	9.805868672	77.33379814
21	Theni	100	Sandhapettai, Aundipatty Taluk, Theni District.	9.996155351	77.62012462
22	Theni	100	Kumuly Police Check Post, Dindigul-Theni, Kottarakkara Highway, Kumily	9.609436534	77.1701299
23	Theni	100	Kumbakarai Falls, Deivendirapuram Village, Keelavadagarai Panchayat, Periyakulam Block, Theni District	10.178627	77.53351
24	Theni	100	Thenpalani Check Post, Meghamalai Road, Thenpalani, Theni District	9.797013201	77.4340368
25	Chennai	500	Aavin Gate, Madras High Court	13.088432	80.2874
26	Chennai	500	Family Court, Madras High Court	13.086327	80.28754
27	Chennai	500	GP Building, Madras High Court	13.086474	80.287825
28	Chennai	500	Chambers Building, Madras High Court	13.087587	80.286753
29	Chennai	500	Information Centre, Madras High Court	13.085992	80.286854
30	Chennai	NA	Rajiv Gandhi Government General Hospital, Chennai	13.08159722	80.27761944
31	Chennai	NA	Institute of Child Health and Hospital for Children, Egmore, Chennai	13.07369167	80.25698889
32	Chennai	NA	Koyambedu Market, Chennai	13.0682476	80.1961409
33	Chennai	NA	Koyambedu Fruit Market, Koyambedu, Chennai	13.0685978	80.1951909
34	Chennai	NA	Koyambedu Flower Market, Koyambedu, Chennai	13.068322	80.197258

Sl. No	District	Machine Capacity (no. of bags)	Location Address	Manjappai Vending Machine	
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35	Tiruvallur	40	O/o DEE, TNPCB, Tiruvallur	13.141919	79.890432
36	Tiruvallur	40	District Collectorate, Tiruvallur	13.142423	79.894465
37	Tiruvallur	40	Tiruvallur Bus Stand	13.140304	79.908229
38	Tiruvallur	NA	Tirutani Murugan Temple	13.172003	79.60362
39	Gummidipoondi	20	O.o DEE, Gummidipoondi, Tiruvallur District	13.41258	80.114981
40	Nilgiris	100	Uzhavar Santhai, Charing Cross, Coonoor road, Udthagamandalam, The Nilgiris - 643 001	11.412023	76.7095101
41	Nilgiris	100	Municipal Market, Commercial Road, New Market Area, Upper Bazar, Udthagamandalam, The Nilgiris – 643 001	11.408186	76.7043064
42	Krishnagiri	100	O/o DEE TNPCB, SIPCOT Phase I, Dharga, Hosur Taluk Krishnagiri District - 635126	12.746873	77.813595
43	Krishnagiri	NA	Ulazavar Santhai, Hosur Corporation, Krishnagiri	12.72641	77.828861
44	Tiruvannamalai	300	District Collectorate Building, Vengikkal, Tiruvannamalai - 606604	12.270687	79.0721
45	Virudhunagar	NA	Sri Andal temple, Mangapuram, Srivilliputhur, Virudhunagar District.	9.508246	77.631205
46	Chengalpattu	NA	DEE Office Maraimalai Nagar, TNPCB	12.801307	80.026504
47	Namakkal	NA	Namakkal-Trichy Road, Tiruchengode, Namakkal - 637 001	11.249238	78.128108
48	Ariyalur	NA	Near Amma Unavagam, Bazar Street, Jayankondam, Ariyalur – 621 802.	11.21216667	79.36136111
49	Kancheepuram	NA	Arulmigu Ekambaranathar Temple, Kancheepuram	12.847237	79.700219
50	Kancheepuram	NA	Arulmigu Varadharaja Perumal Temple, Kancheepuram	12.818845	79.723852
51	Kancheepuram	NA	O/o District Environmental Engineer, TNPCB, Sriperumbudur.	12.850317	79.940687
52	Dharmapuri	30	Amma Unavagam, Dharmapuri Town Bus Stand, Dharmapuri	12.134468	78.162544

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53	Dharmapuri	NA	Uzhavar Santhai, Palacode Taluk, Dharmapuri District	12.302069	78.075497
54	Dharmapuri	NA	Dharmapuri Govt. Medical College, Dharmapuri Taluk &	12.1230739	78.158185
55	Trichy	300	District Collector Office, Trichy – 620 001	10.7905113	78.7046445
56	Trichy	300	Samayapuram Temple, Samayapuram, Trichy	10.918566	78.740531
57	Coimbatore	500	Gandhipuram Town Bus Stand	11.044117	76.94957
58	Coimbatore	500	Gandhipuram Central Bus Terminus	11.014636	76.967567
59	Coimbatore	250	Flower Market Coimbatore	11.0044586	76.956187
60	Coimbatore	250	Uzhavar Sandhai, Mettupalayam	11.301222	76.93759
61	Coimbatore	300	District Collector Office Coimbatore	10.999772	76.967285
62	Coimbatore	300	Uzhavar Sandhai, R.S.Puram	11.01419	76.94458
63	Tiruppur North	NA	District Collector Office, Palladam Road, Tiruppur	11.08222222	77.34166667
64	Tiruppur North	NA	Muthamil Arignar Kalaignar M. Karunanidhi Bus Stand (Old Bus Stand), Tiruppur	11.09833333	77.3475
65	Coimbatore South	NA	Perur Patteeswara Temple, Coimbatore District	10.9759	76.91479
66	Coimbatore South	NA	Singanallur Uzhavar Sandhai, Coimbatore District	11.00028	77.02606
67	Coimbatore South	NA	Singanallur Bus Stand, Coimbatore District	11.00305	77.0296
68	Coimbatore South	NA	Sulur Uzhavar Sandhai, Coimbatore District	11.02754	77.1302
69	Coimbatore South	NA	Pollachi Uzhavar Sandhai, Coimbatore District	10.66262	77.00165
70	Coimbatore South	NA	Arulmigu Masani Amman Temple, Anaimalai, Coimbatore District	10.5756818	76.9349968
71	Karur	NA	District Collector's Office, Karur	10.918994	78.091939
72	Thanjavur	100	Keelavasal Market, Thanjavur	10.789684	79.141769

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73	Thanjavur	100	Dharasuram Market, Kumbakonam Taluk, Thanjavur District	10.944139	79.357089
74	Thanjavur	100	Uzhavar Chanthai, Pattukottai Taluk, Thanjavur District	10.42048	79.318065
75	Salem	NA	Manjappai Vending Machine, Installed at Yercaud	11.785863	78.209486
76	Pudukkottai	300	Kalayanpuram, Pudukkottai, Tamil Nadu 622005	10.38621667	78.80754333
77	Pudukkottai	300	175/F6, Thaila Nagar, Pudukkottai, Tamil Nadu 622005	10.386205	78.8074028
78	Vellore	NA	Uzhavar Sandhai, Ranipet	12.928396	79.329837
79	Vellore	NA	Christian Medical College, Ranipet Campus	12.938582	79.237823
80	Nagapattinam	NA	District Collector's office	10.79974	79.83869
81	Nagapattinam	NA	Municipality Office, Mayiladuthurai	11.09657	79.65364
82	Nagapattinam	NA	District Collector's office, Thiruvarur	10.78112	79.60632



