



GOVERNMENT OF KERALA

No.B2/195/2018/Env.

Environment (B) Department  
Thiruvananthapuram,  
Dated: 15/12/2020

From  
The Principal Secretary to Government.

To  
The Registrar  
National Green Tribunal  
Faridkot House, Copernicus Marg,  
Near India Gate, New Delhi, Delhi 110001

The Member Secretary  
Central Pollution Control Board,  
Parivesh Bhavan, East Arjun Nagar  
New Delhi – 110032.

Sir,  
Sub:- Quarterly progress report on the compliance of order dated 25/04/2019 in OA  
No. 606/2018 - reg.

I am to forward herewith the Quarterly Progress Report for the quarter ending September 2020 on compliance with the direction of the Hon'ble NGT in O.A. No. 606/2018 approved by the Chief Secretary of Kerala for necessary action.

Yours faithfully,

SHEEBA.B

Joint Secretary

For Principal Secretary to Government

# **Quarterly Progress Report on the Compliance by the State of Kerala**

with the directions of  
The Hon'ble National Green Tribunal, Principal Bench, New  
Delhi

as per the  
Orders dated 16.01.2019, 25.04.2019, 12.09.2019, 07.01.2020  
& 02.07.2020 in O.A. No.606/2018

Order dated 17.07.2019 in O.A.No.519/2019 & Order  
dated 22.11.2019 in O.A. No. 533/2018 & 534/2018

Orders dated 20.11.2019, 24.01.2020, 28.02.2020,  
16.06.2020, 03.07.2020 & 16.09.2020 in O.A No 514/2019  
and orders dated 30.01.2020 & 03.08.2020 in O.A.  
442/2013(SZ)

Orders dated 20.9.2018, 8.4. 2019, 29.11.2019, 22.06.2020 & 26.09.2020 in  
O.A.No.673/2018

Order dated 21.2.2019, 10.5.2019, 18.12.2019 & 01.06.2020 in O.A. No.  
325/2015

Orders dated 19.02.2019, 21.05.2020 & 21.09.2020 in O.A. No. 593/2017

Order dated 17.9.2019 & 21.9.2020 in O.A. No. 829/2019

Order dated 15.7.2019 in O.A. No. 710/2017, 711/2017, 712/2017 & 713/2017

Orders dated 12.04.2019, 26.08.2019 & 7.7.2020 in O.A no. 804/2017

Order dated 8.10.2018 in OA No.681/2018

Order dated 05.11.2019 in O.A. No. 639/2018

Order dated 13.12.2018 in O.A.No.1038/2018

Orders dated 22.02.2019, 26.9.2019 & 19.03.2020 in O.A.  
No. 360/2018

Submitted by  
The Chief Secretary, Government of Kerala

7<sup>th</sup> December, 2020

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## List of Acronyms

Acronym	Expansion
AMC	Annual Maintenance Contract
AYUSH	Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy
BMWM	Bio-Medical Waste Management Rules
CAAQMS	Continuous Ambient Air Quality Monitoring Station
CBMWTF	Common Biomedical Waste Treatment Facility
CC	Closed Circuit
CEPI	Comprehensive Environmental Pollution Index
CETP	Common Effluent Treatment Plant
CPA	Critically Polluted Area
CPCB	Central Pollution Control Board
D2D	Door to Door
DG	Diesel Generator
EPR	Extended Producer Responsibility
ETP	Effluent Treatment Plant
GKA	Greater Kochi Area
GO	Government Order
HCI	Health Care Institutions
HKS	Haritha Karma Sena
IEC	Information Education and Communication
IMAGE	Indian Medical Association Goes Eco-friendly
KIFB	Kerala Infrastructure Investment Fund Board
KINFRA	Kerala Industrial Infrastructure Development Corporation
KSIDC	Kerala State Industrial Development Corporation
KWA	Kerala Water Authority
KWIL	Kerala Waterways and Infrastructure Development Ltd
MCF	Material Collection Facilities
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act, 2005
MLD	Million litre Per Day
MoEF&CC	Union Ministry of Environment, Forests and Climate Change
MRF	Material Recovery Facility
MT	Metric Tons
NAMP	National Ambient Air Quality Monitoring Programme
NCAP	National Clean Air Program
NGT	National Green Tribunal
NWMP	National Water Quality Monitoring Programme
OA	Original Application
PET	Polyethylene Terephthalate
PPP	Public-Private Partnership
RRC	Resource Recovery Centre
RRF	Resource Recovery Facility
SAMP	State Ambient Air Quality Monitoring Programme
SLAC	State Level Advisory Committee
STP	Sewage Treatment Plant
SWM 2016	Solid Waste Management Rules, 2016
SWMP	State Water Monitoring Programme
TPA	Tonnes per Annum
TPD	Tonnes Per Day
TVM	Thiruvananthapuram Municipal Corporation
VGf	Viability Gap Funding

## CHAPTER I EXECUTIVE SUMMARY

In Kerala , 3.7 million tonnes of municipal solid wastes is generated annually<sup>1</sup>. 45% is generated by the Municipalities, 41% by the GPs, and 14% by the City Corporations. 77% of the wastes are biodegradable, 18% are non-biodegradable, and 5% are inerts. To facilitate effective solutions for scientific management of wastes and to reiterate its commitment towards realizing the goals of the SWM Rules 2016, the Government of Kerala notified the State Policy on Solid Waste Management in 2016, with an overall goal of transformation of Kerala into a garbage-free and environmentally healthy State. The key strategies prescribed were:-

- Mandatory segregation of waste at source, based on primary characteristics.
- Aerobic or anaerobic composting of biodegradable waste at source (household and institutions) as far as possible.
- Ensure decentralized community facilities for biodegradable waste that overflows from source’.
- Establish door to door collection of non-biodegradable waste.
- Promote usage of storage bins for dumping wet and dry waste by all vendors and institutions.
- Enforce captive waste management systems for the bulk waste generators.
- Establish procedure for handling domestic hazardous waste and promote its implementation.
- Promote modern centralized waste processing facilities in major cities using state-of-the-art technologies.
- Develop regional sanitary landfill facility to dispose of ultimately unusable materials.
- Make use of the enabling environment created under the Haritha Keralam Mission to integrate the use of treated waste products, enhance organic agriculture and upkeep of fragile ecosystems.
- Undertake appropriate IEC campaigns.
- Implement appropriate capacity building programmes for stakeholders.
- Network with academic and research & development institutions for upgrading of technologies and application protocols.

The Hon’ble National Green Tribunal issued directions on 25-4-2019 in O.A. No. 606/2018 to the State on waste management. The directions include:

1. At least three cities and three towns in the State and at least three villages in every district of the State may be identified within two weeks and earnest and demonstratable endeavor be made to make them fully compliance in respect of environmental norms within six months. Remaining State may be made fully compliant within one year
2. At least three cities and three towns in the State and at least three villages in every district of the State may be identified within two weeks and earnest and demonstratable endeavor be made to make them fully compliance in respect of environmental norms within six months. Remaining State may be made fully compliant within one year

<sup>1</sup> Sectoral status study on solid waste management sponsored by the Water and Sanitation Project - South Asia (World Bank)

<sup>2</sup> Presentation of the Local Self Government Department, Government of Kerala

<http://sanitation.kerala.gov.in/wp-content/uploads/2019/01/NGT-Regional-Monitoring-Committee-review-kochi-25.01.19.pdf>

3. The District Magistrates may monitor the status of compliance of environmental norms, at least once in two weeks.

The first report was submitted in April 2019 before the Hon'ble NGT and the next quarterly report was submitted on 15-7-2019; the third report on 31-10-2019; fourth on 19-2-2020; fifth on 15-6-2020 and its modified report was submitted on 2-7-2020. The present report summarizes the actions taken by the Government of Kerala to abide by the Order dated 16-1-2019 in O.A. 606/2018 (para.40); orders dated 25-4-2019, 12-9-2019, 7-1-2020 and 2-7-2020 in O.A. 606/2018; orders in O.A. 593/2017 dated 19-2-2019, 21-5-2020 and 21-9-2020; orders in O.A. No. 673/2018 dated 20-9-2018, 8-4-2019, 29-11-2019, 22-06-2020 and 26-09-202; orders dated 10-5-2019, 18-12-2019 and 1-6-2020 in O. A. 325/15; orders dated 17-9-2019 and 21-9-2020 in O.A. No. 829/2019; and orders dated 26-9-2019 and 19-3-2020 in O.A. No. 360/2018. It outlines the status of different interventions, the timelines set for meeting the targets, and the estimated budget.

### 1.1 Statistics of Kerala's Sewage and Solid Waste

Sl. No	Subject	Sewage (MLD) (As per the draft dossier)	MSW (TPD)								
1	Total generated	<table border="1"> <tr> <td></td> <td>Quantity of sewage in MLD</td> </tr> <tr> <td><b>Total</b></td> <td><b>1192*</b></td> </tr> <tr> <td>Urban</td> <td>317</td> </tr> <tr> <td>Rural</td> <td>875</td> </tr> </table>		Quantity of sewage in MLD	<b>Total</b>	<b>1192*</b>	Urban	317	Rural	875	11449 Urban : 3452 Rural: 7997
	Quantity of sewage in MLD										
<b>Total</b>	<b>1192*</b>										
Urban	317										
Rural	875										
2	Total capacity installed to treat in local bodies	<p>In Urban Local Bodies</p> <ul style="list-style-type: none"> <li>• 12 common STPs for 124 MLD</li> <li>• 2 FSTPs for 0.2MLD</li> <li>• <b>1000</b> individual STPs for 69MLD (large and medium establishments)</li> <li>• Septic tank/soak pit/leach pit of 116MLD for remaining households</li> </ul>	6303								
4	Total amount treated in local bodies	<p>In Urban Local Bodies</p> <ul style="list-style-type: none"> <li>• 12 common STPs for 92 MLD</li> <li>• 2 FSTPs for 0.2MLD</li> <li>• <b>1000</b> individual STPs for 69MLD (large and medium establishments)</li> <li>• Septic tank/soak pit/leach pit of 116MLD for remaining households</li> </ul>	8468**								
5.	Gap in capacity	7 MLD* (As per the survey of 68 million houses conducted by the Haritha Kerala Mission, only 0.8% discharged to drains and gutters)	<b>2981 TPD</b> Urban : 607.5 Rural : 2373.5 (In the municipalities and panchayats , biodegradable waste are disposed in their								



Sl. No	Subject	Sewage (MLD) (As per the draft dossier)			MSW (TPD)
					premises by composting, but this quantity is yet to be reported by the municipalities)
6	Gap in treatment	<ul style="list-style-type: none"> <li>Projects for augmentation and implementation of facilities mainly for urban area for 124 MLD</li> </ul>			Projects for augmentation and implementation of WtE plant
6	Capacity under construction	<b>Status</b>	<b>Capacity (MLD)</b>	<b>% of achievement</b>	<p><b>2 Nos</b></p> <ul style="list-style-type: none"> <li>WtE plant at Kozhikode - work awarded and clearing started</li> <li>WtE plant at Sulthanbathery - started construction</li> </ul>
		<b>Achievement of sewage treatment</b>	<b>35</b>	<b>30</b>	
		<b>Under construction</b>	<b>8</b>	<b>6.5</b>	
		<b>Work awarded</b>	<b>30.7</b>	<b>25</b>	
		<b>Tendering/DPR preparation/Technical sanction</b>	<b>15.2</b>	<b>12.5</b>	
		<b>To be tendered</b>	<b>33.5</b>	<b>27</b>	
6 (a)	How many plants under construction which will be completed by March 2021	Completed projects	8	Thiruvananthapuram i)Thiruvananthapuram - Sewerage work- Parvathiputhanar ii) Kumarichanda Market Ernakulam iii) Kalamassery Municipality iv) Kalamassery market Thrissur vi) FSTP at Mattampuram(0.01 MLD) Malappuram vii) Tirur market- 45KLD viii) Tirur bus stand-50 KLD ix) Malappuram Municipality-30 KLD STP	<p><b>2 Nos</b></p> Kozhikode Sulthanbathery
		Under construction	2	Thiruvananthapuram Medical College-5 MLD Kozhikode Medical college-2 MLD and 1 MLD	
		Work to be started	9	i) Kollam-Kureepuzha-12MLD; ii) Ernakulam Kochi Corporation Division-1-4-6.5MLD; iii) Kochi Corproaton-Elamkulam - 5MLD iv) Thrissur- Guruvayoor Municipality-FSTP-0.1MLDChakkulamkandam v) Thrissur- Ramavarkapuram -FSTP-0.1MLD vi) Thrissur-General Hospital-360 KLD vii) Palakkad-Yakkara-FSTP-0.1MLD viii) Palakkad-District Hospital-0.36KLD ix) Kannur Municipality- Chelora-FSTP-0.1MLD	

Sl. No	Subject	Sewage (MLD) (As per the draft dossier)	MSW (TPD)
(b)	How many plants under tender process	Tendering/Council approval/Technical sanction - 16	<b>8 Nos</b> (Tendering for WtE plant at Kollam, Kannur, Palakkad completed and bidders were identified. Tendering for WtE at Thiruvananthapuram, Kochi and Munnar under progress. Initiated activities in Malappuram and Thrissur)
(c)	How many plants in DPR stage	4 Nos	-
(d)	Date of completion of plants in DPR stage	31.12.2021	2021-2022

\* Estimate based on projected population for 2020. 30% of domestic waste is taken as sewage and for remaining sullages sustainable facilities to be provided

\*\* Some quantity of wastes namely iron, steel, brass, aluminium, paper, plastic treated outside the State

## 1.2. Compliance status in the State

### 1.2.1 Solid Waste Management

- Setting of Waste to energy plants at 10 locations is at various stages.
- **Inprincipal clearance given for proposal for co-incineration facility at Malabar cements.** Industries Department informed that the project has been dropped by the company and the Board is taking further action.
- For **Regional Sanitary Landfill**, land (25 acre) has been identified at site of FACT at Ambalamedu, Ernakulam and action is being taken for take over.
- **Considerable progress** has been achieved in providing **Door- to –Door collection** for dry waste in both households (84.5%) and establishments(73%) for model cities/town/villages
- Government **constituted Clean Kerala Company (CKL) to provide waste management services, especially in the management of plastic and other recyclables**, e-waste and operation and maintenance of resource recovery facilities established by the Urban Local Government and Block panchayaths. CKL collected and diverted 360T of non recyclable plastic waste for road tarring in LSGD and 315 T for road tarring in PWD. 937 MCFs and 166 Resource recovery facilities have been provided in LSGDs.
- CKL is taking action is started to provide **Integrated Waste Management system** at

Kuttiapuram, Malappuram.

- **Rendering plant** for treating the chicken waste in Kozhikode Corporation is in operation. **Refrigerator is provided in the chicken stall** for storage and transportation in refrigerated vehicle. Chicken stall owner is to enter into agreement with the rendering plant and such plants are given licence from Corporation and Pollution Control Board. This led to prevent pollution of water bodies due to chicken wastes. There are other rendering plants in large and small scales in other parts of Kerala. Two units in Ernakulam; ten units in Malappuram and two units in Kannur.

### 1.2.2 Biomining of legacy waste

- Biomining at various stages at 41 places(10 large dumpsites and 31 other dump sites)
  1. **Legacy waste clearing completed at nine dumpsites** (1. Erumakkuzhi, Thiruvananthapuram 2. Punalur 3. Kottarakkara 4. Adoor, 5. Erumeli 6. Vaikom, 7. Guruvayoor, Thrissur; 8. Pattambi 9. Thathamangalam, Palakkad )
  2. Clearing going on at five (1. Kozhikode,2. Kunnankulam 3. Chalakkudy 4. Irinjilakkuda 5. Palayam 6. Munnar 7.Varkala)
  3. Biomining Work awarded to two places (Kureepuzha, Kollam and Chelora, Kannur)
  4. Tendering stage at three sites (1. Kottayam, 2. Bhramapuum, Ernakulam, 3. Attingal)

### 1.2.3 Plastic Waste Management

- **Ban on Single use plastic products**
  1. Single use plastic products were banned all over the State and action being taken for its strict implementation.
  2. Check squad including Pollution Control Board, LSGD was constituted and inspected 465 shops.
  3. Violations were observed in 153 establishments and an amount of Rs. 13,05,000/- (Rupees thirteen lakh and five thousand only) was imposed as fine and Rs. 3,35,000/--was obtained as on 4/11/2020.
- **EPR registration proposal**
  1. **Implementation of EPR registration under Solid Waste Management Rules, 2016, EPR registration proposal** for the collection of EPR fee from brand owners for meeting the expenditure of Door to door collection by the local bodies under consideration of the Government.
  2. Development of online portal is also under progress

- **Integrated Waste Management System**

1. . Clean Kerala Company is in the process of setting up of Integrated Waste Management System at Kuttipuram, Malappuram
2. Facility is also to be provided in all district for the sorting of waste collected. Equipments namely shredding, dusting etc will be provided.

#### **1.2.4 Sewage management**

1. Draft dossier on sewage and effluent management in the State has been prepared.
2. Of the total quantity of 1192 MLD of sewage generated in the State, 317 MLD from the urban area and 875 MLD from rural area
3. The existing sewerage treatment consisting of 12 common STPs for 124 MLD; 2 Fecal sludge treatment system for 0.2 MLD; 1000 individual STPs for 69 MLD; septic tank/soakpit/leach pit for the remaining 992 MLD.
4. Augmentation and installation projects at different parts of the urban area for 124 MLD of which 30% work is over for 35MLD; 6.5% under construction for 8 MLD; 25% work awarded for 30.7MLD; 12.5% work under tendering/DPR preparation/technical sanction for 15.2 MLD and 27% to be tendered for 33.5MLD
5. Centralised sewage treatment plant is functioning at Thiruvananthapuram. Facility for treating septage is available here.Sewerage augmentation work is also going on.
6. Fecal septage treatment plant functioning at Willington Island can be taken as a model plant.
7. Model DEWATS plant in a slum area at Chathanad, Alappuzha

#### **1.2.5 Restoration of water bodies**

- a. As per order dated 25-2-2020 in OA 325/2015, submitted the details for restoration of water bodies in the format to the Central Pollution Control Board on 17-3-2020
- b. In the case of polluted stretches, progress is there on the works for restoration of polluted stretches
- c. For coastal discharges, meetings were conducted with Kerala Coastal Zone Management Authority, CUSAT.
- d. Coastal survey is being conducted by the Board

#### **1.2.6 Biomedical Waste Management**

3. Common Bio-medical waste treatment plant
  - a. Common biomedical waste treatment plant of capacity 55.8TPD is in operation at at Palakkad.
  - b. Another common plant of 16 TPD is in an advanced stage at

- Ambalamughal and is expected to have trial run by the end of January 2020
- c. Land for installation of another plant at Brahmapuram was also allocated.
4. Inventory of biomedical waste
    - a. Inventory submitted to the Central Pollution Control Board
    - b. As per the inventory, there are 17,354 health care facilities (HCF) which include 817 AYUSH and 533 veterinary.
  5. **Collection and disposal of unused medicines from houses**
    - a. **Programme was introduced by Chemist and Druggist Association and Drugs Controller** (PROUD programme) in Thiruvananthapuram Corporation by providing around 200 bins in front of medical shops and the collected biomedical waste was taken to common facility
    - b. Action is being taken for the implementation of the above programme in other parts of the State.

#### 1.2.7 Hazardous Waste Management

- c. Total hazardous waste generation is 3, 14,488.2 TPA as per Annual Report in the whole state for the year 2019\_2020
- d. 1617 industrial units are generating hazardous waste.
- e. In Kerala, there is 50,000TPA capacity common hazardous Waste Disposal facility is functioning at Ambalmugal, Ernakulam by Kerala Envio Infastructure Limited. During 2019-20, 62,609.99T of hazardous waste was received and 55,809.89TPD was disposed.
- f. Kerala State Pollution Control Board is in the process of revamping its online consent management software to enable the units for entering the data by waste handlers w. r. t. day wise record maintenance, manifest document, etc. as stipulated under the HOWM Rules, 2016.
- g. Action is being taken to bring all ports under the purview of HoWM Rules, 2016
- h. Action is being taken to bring all ports under consent purview.
- i. Cotaminated sites have been identified and reported to CPCB
- j. Action is being take to conduct Environment audit in captive SLF and common Hazardous Landfill

### **1.2.8 E-Waste Management**

- **E-waste dismantling unit at Kuttippuram, Malappuram is being setup. Land has been identified. Evaluation of tender bids from two companies is being done.**
- **Clean Kerala Company collected around 250T of e-waste mainly from Government institutions for diverting to e-waste registered recyclers.**
- In the informal sector, around 250 T of e-waste was collected and diverted to registered recyclers for its recycling. Also 800 T collected from the informal sector for diverting to registered recyclers . Action is also being taken to set up dismantling unit in the informal sector.
- Project for the inventoisation of E-waste outsourced to NIIST, Pappanamcode, Thiruvananthapuram and the work initiated.
- There are 18 e-waste collection centers having consent the Board.
- Project for the inventory on e-waste is done with the support of NIIST, Thiruvananthapuram

### **1.2.9 Batteries Waste Management**

- Instructions were given to KSRTC, various departments including KSRTC, Kerala Telecom Corporation, Railway, KSEB, Chief Port Master General's Office, Ministry of Defence, various battery manufactures, Bulk consumers, etc.
- Annual report for the year 2019-20 submitted to CPCB
- As per the annual report, there are 17 manufacturers, 452 dealers, 2 recyclers, 8 impoerters in the State.

### **1.2.10 Construction and Demolition Waste management**

- Directions given to Local Self Government Department, Urban Affairs, Panchayath Directorates, Rural Development Department, etc regarding action to be taken to implement C&D Rules. Local Self Government Department was intimated the duties vested with the local authority as per the rule No.6 and schedule I as per Rule 7 (1).
- Notice for display at Construction and Demolition sites was communicated to Local Self Government Department, Urban Affairs Department, Commissionorate of Rural Development, Panchayat Directorate, Suchitwa Mission (Local Self Government Department's agency for implementation of sanitation and wastes management policy in the State) in compliance to Central Pollution Control Board's direction dated 13.12.2017.
- All Regional Offices and District Offices of the Board were addressed for including guidelines and dust mitigation measures as per Construction and Demolition Waste Management Rules, 2016 in consent regime.

- All Corporation/ Municipalities were addressed on 03.08.2019 with respect to implementation of Construction and Demolition Wastes Rules, 2016 and for identifying suitable sites for setting up of the storage, processing and recycling facilities for Construction and Demolition Wastes (Schedule(1)).
- As per the orders of the Hon'ble Supreme Court, five high rise buildings within the locality of Maradu Municipality in Ernakulam District, were demolished on 11th and 12th of January, 2020. Kerala State Pollution Control Board conducted pre and post monitoring in the area. M/s Prompt enterprises was entrusted by the Maradu Municipality for the removal of concrete debris and they a site at Kumbalam for setting up Construction and Demolition Waste processing facility. On receiving the application from M/s Prompt Enterprises, the Kerala State Pollution Control Board had conducted enquiry and issued authorisation vide PCB/HO/C&D WASTE RULES/VOL.II/17/19 dated 28.01.2020 subject to conditions to set up and operate 500 T/d of Construction and Demolition Waste processing facility in 56 acres of land.

#### **1.2.11 Noise Management**

- Training to the police officers by the officials of the Central Pollution Control Board scheduled in December, 2020 is arranged by the Kerala State Pollution Control Board
- Action being taken for setting up noise monitoring stations
- Noise level monitoring conducted during festival seasons namely Deepavali

#### **1.2.12 Monitoring mechanism**

1. Progress on the implementation of projects on solid waste and sewage management is monitored monthly by the Chief Secretary and 37 meetings have so far been conducted.
2. **Environmental monitoring Cell** is functioning in the office of the Chief Secretary and taking efforts for the co-ordination of the different departments
3. State Level Monitoring Committee and District Level Monitoring Committee are reviewing the progress for the implementation of Rules and progress has been observed.
4. Direction for Environmental Compensation was issued to Thiruvananthapuram and Thrissur Corporations. For Thrissur Corporation, progress is being reviewed. For Thiruvananthapuram, they obtained stay from the Hon'ble High Court. Direction was also issued to Kochi Corporation and the reply is being verified
5. Showcause notice for not levying Environmental Compensation was issued to eight municipalities and 51 Grama panchayaths

### **1.2.9 Other compliances**

- **District Environmental Plan** was submitted by all district. The plan submitted by the **Wayanad district** was submitted to Central Pollution Control Board for comments.
- **Setting up of waste recycling facility in industrial areas is promoted.**

### **1.3. Compliance Status of Model City / Town / Village**

As per Govt. Order. (Rt.) No. 45/2019/Env. dated 31-5-2019 following local bodies are selected as model cities, model towns and model villages (3 each in 14 districts) in the State.

#### **1.3.a Model city**

- Work started for the waste to energy plant at Kozhikode and land identified for waste to energy plant in other model cities namely Thiruvananthapuram and Thrissur.
- More than 65% Door to door collection for dry and wet waste achieved for both household and establishment in Kozhikode Corporation. 87% door-to door collection provided for establishment through 12 agencies by Thiruvananthapuram Corporation.
- Centralised facility exists for Kozhikode Corporation and decentralized facility is provided in Thiruvananthapuram and Thrissur Corporation.
- Biomining started at Kozhikode Corporation. Clearing of dumpsite was over at Erumakkuzhy in Thiruvananthapuram and is progressing at Palayam in Thiruvananthapuram Corporation under Smart City programme.

#### **1.3.b Model town**

- 100% Door-to-Door collection achieved for dry waste from households and establishments in Punalur and Kunnamkulam municipality. 100% Door-to-Door collection for dry waste from establishment in Attingal Municipality
- Dumpsite cleared in Punalur and for Attingal, it is under project preparation.
- Construction of secured landfill is being initiated.
- Haritha Karma Sena is provided in the majority of Municipalities

#### **1.3.c Model villages**

- Many local bodies achieved 100% Door to Door collection for dry wastes and majority of local bodies achieved more than 50% for Door to Door collection for dry wastes in households
- Waste collectors/ Haritha Karma Sena are provided in Panchayaths
- Waste treatment options include ring compost, biogas plants, compost pits. Compost pits are provided under Ayyankali scheme



**Compliance of Rule 22 in Model Cities**

No.	Model cities	Thiruvananthapuram	Thrissur	Kozikode
	Population (2011)	9,58,000	3,17,526	609000
	No of houses	2,72,820	86,604	1,39,507
	No of establishments	18,882	15,250	30,120
	Quantity of waste generated (TPD)	455	153	300
	Quantity of waste treated (TPD)	242	57	294
	Gap (TPD)	213	96	4
	Available facilities	<p>Pipe compost- 50000, Kitchen bin-19000 , biogas plant (HH level)-3892 , Community level Biogas plant- 18 , Aerobin- 53 , bio bin-109 [Total wet waste treated -(106 TPD)]</p> <p>107 MLD common sewerage treatment plant and there is provision for treatment of septage.</p>	<p><b><u>Community level</u></b>  <b>OWC plants</b>            Three plants (8 TPD at Shakthan; 4 TPD at Kurichira and 4 TPD at Kovilakathu padam)  <b>Biogas plants-</b> 8Nos. (2 TPD)  <b>Mobi trash-</b> 1 No. (0.5TPD)            Thumboor muzhi (1.15TPD)</p> <p><b><u>Household level</u></b>            Pipe compost-2272; Biogas plant-727, Smart biobins-400; Biobins- 50; Pit compost - 52,655</p>	<p>Windrow composting-100 TPD, Aerobin-289s, Biogas plants 424, Pipe compos-11360t, compost pits, Kitchen bins,</p> <p>Rendering plant for treating wastes from chicken stall</p>
<b>Compliance of Rule 22</b>				
22(1)	Identification of suitable site for solid waste processing plant	Land is identified at Vizhinjam	Land is identified at Ollookkara	Land identified at Njaliyanparmba
22(3)	Procurement of suitable site for setting up solid waste processing facilities and sanitary landfill facilities	Transfer of land being done	Procurement of land being done	Land is already available
22(4) 22(5)	Source level segregation Door to Door collection of segregated waste	30% door to door collection from households for dry waste and no wet waste from households. Haritha	87% door to door collection of dry waste from households	50% door to door collection of dry wastes from households  78.2% door to door

No.	Model cities	Thiruvananthapuram	Thrissur	Kozikode
		<p>karma sena is to be in force</p> <p>92% of dry and wet waste from establishment by engaging 12 service providers</p> <ul style="list-style-type: none"> <li>• MCF-54</li> <li>• RRF-4</li> <li>• Haritha Karma Sena –Not reported for households</li> </ul>	<p>66% door to door collection of dry waste from establishment</p> <ul style="list-style-type: none"> <li>• MCF-11</li> <li>• RRF-3</li> <li>• Haritha Karma Sena/collectors -145</li> <li>• 34 numbers of three wheel autos, 7 Leyland vehicles, 3 tractors, 4 tippers and JCB</li> <li>• 26 scrap dealers have been registered. 78 rag pickers have been identified</li> </ul>	<p>collection of dry waste from establishment</p> <ul style="list-style-type: none"> <li>• MCF-12</li> <li>• RRF-2</li> <li>• Haritha Karma Sena/collectors - 645</li> </ul>
22(6)	Ensure separate storage, collection and transportation of construction and demolition waste	Being initiated	Being initiated	Being initiated
22(7)	Setting up of solid waste processing facilities by all local bodies	Tendering	Action is being taken for the procurement of land	Work awarded to Zonta Infratech Private Limited and site is being cleared
22(9)	Setting up common or standalone sanitary facilities	Land (25 acre) has been identified at site of FACT at Ambalamedu, Ernakulam for the sanitary landfill and action is being taken for take over		
22(10)	Bio-remediation or capping of old and abandoned dumpsites	<p>Three dumpsites</p> <ul style="list-style-type: none"> <li>• Palayam(7000m<sup>3</sup>)-remediation work undertaken by Smart City</li> <li>• Erumakkuzhy(2388 m<sup>3</sup>)- completed</li> <li>• Vilappilsala (to be initiated)</li> </ul>	<p>One dumpsite at Laloore (51634.84m<sup>3</sup> as per local body's report)</p> <p>Proposal for biomining submitted to Suchitwa Mission for approval</p>	<p>One dump site at Njaliyanpramba (29,000 TPA)</p> <p>Bioremediation and capping work is in progress by M/s Zonta Infratech Private Limited</p>

### Compliance of Rule 22 in Model Towns

	Model Town	Attingal	Punalur	Kunnamkulam
	Population (2011)	37,648	48,648	54,071
	No of houses	13,891	13,062	13,156
	No of establishments	974	1,232	3,351
	Quantity of waste generated (TPD)	17	20	23
	Quantity of waste treated (TPD)	17	20	15
	Gap (TPD)	0	0	8
	Available facilities	Windrow compost -15 TPD, Vermi compost- 1 TPD biogas plant(HH level)-410, Community level Biogas plant- 18, Kitchen bin - 700	Biogas(HH level) -1250, Pipe Compost- 5000, Compost pit - 6500, Aerobins - 27	Biogas plant(HH level)- 196 , Aerobins- 3, Biocomposter - 4835 , Kitchen bin -6972
<b>Compliance of Rule 22</b>				
22(4) 22(5)	Source level segregation Door to Door collection of segregated waste	48.5% door to door collection from households for dry waste and no wet waste from households.  100 % of dry and wet waste from establishment  <ul style="list-style-type: none"> <li>• MCF-1</li> <li>• RRF-1</li> <li>• Haritha Karma Sena/ Collectors – 44</li> </ul>	99.2% door to door collection of dry waste from households  99.9% door to door collection of dry waste from establishment  <ul style="list-style-type: none"> <li>• MCF-200 mini</li> <li>• RRF-1</li> <li>• Haritha Karma Sena/collectors -127</li> </ul>	100% door to door collection of dry wastes from households  100% door to door collection of dry waste from establishment  <ul style="list-style-type: none"> <li>• MCF-1</li> <li>• RRF-1</li> <li>• Haritha Karma Sena/collectors -56</li> </ul>
22(6)	Ensure separate storage, collection and transportation of construction and demolition waste	Being initiated	Being initiated	Being initiated
22(9)	Setting up common or standalone sanitary facilities	Land (25 acre) has been identified at site of FACT at Ambalamedu, Ernakulam for the sanitary landfill and action is being taken for take over  Action has been initiated for providing secured landfill at Attingal.		
22(10)	Bio-remediation or capping of old and abandoned dumpsites	One dumpsites  <ul style="list-style-type: none"> <li>• Attingal(13000m<sup>3</sup>)- Project proposal for biomining under</li> </ul>	One dumpsite at Punalur  Site cleared	-

	Model Town	Attingal	Punalur	Kunnamkulam
		consideration		

### Status of waste management model villages

Sl. No.	District	Local body	Quantity of SW generated in TPD	MCF	RRF	HKS/collectors	Door-to-Door household in %	Door-to-Door establishments in %	Quantity of waste treated in TPD	Quantity of wet waste treated in TPD	Material recovered, recycled, coprocessed and scrap feeders	Gap in generation and treatment TPD (Compost pits are provided in premises of panchayaths is yet to be reported)
<b>Model Panchayaths</b>												
1	Thiruvanthapuram	Karakulam	15.73	1	0	48	100	42.29	13.38	8.81	4.58	2.34
2		Parassala	15.68	3	0	38	27	2	13.34	8.78	4.56	2.34
3		Poovachal	13.08	4	1	28	100	100	11.13	7.33	3.81	1.95
4	Kollam	Chavara	12.80	1	1	46	83.69	60	10.89	7.17	3.72	1.91
5		Kadakkal	9.22	0	0		-		7.84	5.16	2.68	1.37
6		Perinad	10.19	1		40	67.10	10.94	8.67	5.70	2.96	1.52
7	Pathanamthitta	Aranmula	8.61	1	1	28	100	100	7.33	4.82	2.51	1.28
8		Kulanada	7.10	22	0	34	100	100	6.04	3.97	2.07	1.06
9		Thumpamon	2.27	2(MCF & Mini MCF)	Nil	23	100	100	1.93	1.27	0.66	0.34
10	Alappuzha	Aaryad	9.68	1	1	36	100	100	8.24	5.42	2.82	1.44
11		Mararikkulam North	9.40	2	1	36	100	100	8.00	5.26	2.73	1.40
12		Thamarakulam	8.11	2	1	33	58.97	58.06	6.90	4.54	2.36	1.21
13	Kottayam	Kadaplomatam	3.91	1	0	13	100	100	3.33	2.19	1.14	0.58
14		Moonilavu	2.62	1	0	13	100	100	2.23	1.47	0.76	0.39
15		Poonjar	3.79	2	0	13	100	100	3.23	2.13	1.10	0.57
16	Idukki	Adimali	3.79	1	1	48	81.35	76.32		2.13	1.10	0.57
17		Kumali	10.77	2	1	42	78.48	78.5	27	6.03	3.14	1.61
18		Nedumkand	12.59				56.44	100	10.72	7.05	3.66	1.88
19	Ernakulam	Chottanikara	6.80	1	0	28	94.54	87.50	5.78	3.81	1.98	1.01
20		Kalady	8.48			14	82.19	-	7.22	4.75	2.47	1.26
21		Pampakuda	13.21	1	0	36	70.99	92.65	11.24	7.40	3.84	1.97
22	Thrissur	Manalur	9.87	1	1	38	100	100	8.40	5.52	2.87	1.47
23		Parappukkar	8.90	2	0	10	89.99	30.74	7.57	4.98	2.59	1.33
24		Periganam	6.30	1	1	30+1	100	100	5.36	3.53	1.83	0.94

Sl. No.	District	Local body	Quantity of SW generated in TPD	MCF	RRF	HKS/collectors	Door-to-Door household in %	Door-to-Door establishments in %	Quantity of waste treated in TPD	Quantity of wet waste treated in TPD	Material recovered, recycled, coprocessed and scrap feeders	Gap in generation and treatment TPD (Compost pits are provided in premises of panchayaths is yet to be reported)
25	Palakkad	Muthuthala	7.46				100		6.35	4.18	2.17	1.11
26		Sreekrishnapuram	6.56	1	-	15	100	100	5.58	3.67	1.91	0.98
27		Vellinezhi	5.13	1	1	13	100	100	4.37	2.87	1.49	0.76
28	Malappuram	Chaliyar	6.25	1	0	13	100	100	5.32	3.50	1.82	0.93
29		Maranchery	10.50	1	0	38	100	0.00	8.94	5.88	3.06	1.56
30		Thuvur	12.09	1	0	15	100	100	10.29	6.77	3.52	1.80
31	Kozhikode	Meppayur	8.38	1	0	26	89.00	100	7.13	4.69	2.44	1.25
32		Kunnumel	5.41	mini	0	28	100	99.03	4.60	3.03	1.57	0.81
33		Kuttiadi	5.81	1	0	17	100	100	4.94	3.25	1.69	0.86
34	Wayanad	Meenagadi	10.04	1	0	26	100	0.00	8.54	5.62	2.92	1.50
35		Muttill	10.58	1	0	10	100	0.00	9.01	5.93	3.08	1.58
36		Vythri	5.49	1	0	18	100	100	4.67	3.08	1.60	0.82
37	Kannur	Padiyur	6.46	1	1	17	100	75.00	5.50	3.62	1.88	0.96
38		Pariyaram	9.86	1	1	20	98	53.47	8.39	5.52	2.87	1.47
39		Udayagiri	5.64	Under construction (95% completed)	0	15	98	100	4.80	3.16	1.64	0.84
40	Kasaragod	Beddukka	8.36	MCF 1 No, Mini MCF 81 No., Bottle Box 8 Nos	1	37	100	100	7.11	4.68	2.43	1.25
41		Kinanoor-Karinthalam	9.96	1	1		44.19		8.48	5.58	2.90	1.48
42		Madikkai	6.62	1	0	30	100		5.63	3.70	1.92	0.99

### 1.4. Status of Solid Waste Management in the State

Name of District	Quantity of Municipal Solid Waste		Status of door to door collection (%)	Status of segregation at source	No: of MSW treatment facilities with their capacities		Quantity of waste treated (TPD)			Gap in generation and treatment (Compost pits are provided in premises of panchayats and municipalities is yet to be reported)	Plan of action to overcome the gaps	Number of Dumpsites and status of legacy waste management	
	Total Generated (TPD)	Collected (TPD) (Dry waste)			Designed	Operational	Composting and other decentralised facilities	Materials recovered, recycled & Coprocessed, Scrap feeders	Quantity of waste Landfilled			Major	Minor
Thiruvananthapuram	1211.05	162.41	48.42	Yes	One WtE plant of 300 TPD proposed Land identified	Aerobins, Windrow composting, Biogas plants, Pipe compost, compost pits, Kitchen bins	480.29	351.92	0	378.84	Action is being taken for the procurement of land. Tendering is being conducted for WtE plant	1	4
Kollam	902.49	128.82	54.67	Yes	One WtE plant of 200 TPD proposed	Aerobins, Biogas plants, Pipe and ring compost, compost pits, Kitchen bins	384.21	262.51	0	255.77	Planned to construct WtE plant of 200 TPD	1	
Pathanamthitta	391.80	48.62	38.40	Yes		Aerobins, Biogas plants, Pipe compost, compost pits, Kitchen bins, Windrow composting	186.53	114.26	0	91.00			

Name of District	Quantity of Municipal Solid Waste		Status of door to door collection (%)	Status of segregation at source	No: of MSW treatment facilities with their capacities		Quantity of waste treated (TPD)			Gap in generation and treatment (Compost pits are provided in premises of panchayaths and municipalities is yet to be reported)	Plan of action to overcome the gaps	Number of Dumpsites and status of legacy waste management	
	Total Generated (TPD)	Collected (TPD) (Dry waste)			Designed	Operational	Composting and other decentralised facilities	Materials recovered, recycled & Coprocessed, Scrap feeders	Quantity of waste Landfilled			Major	Minor
Alappuzha	702.54	109.07	59.33	Yes		Aerobins, Biogas plants, Pipe compost, compost pits, Kitchen bins	314.77	204.06	1.5	182.22		1	
Kottayam	669.40	82.65	39.08	Yes		Aerobins, Biogas plants, Pipe compost, compost pits, Kitchen bins	291.05	194.97	0.5	182.88		1	4
Idukki	357.11	29.27	49.72	Yes	Proposed one WtE plant of 20 TPD Land available	Aerobins, Biogas plants, Pipe compost, compost pits, Kitchen bins	182.97	104.40	5.24	64.50	Planned to construct WtE plant of 200 TPD		3
Ernakulam	1199.68	370.57	50.54	Yes	Proposed one WtE plant of 300 TPD Land available	Aerobins, Window composting, Biogas plants, Pipe compost, compost pits, Kitchen bins	592.37	349.51	93.8	164.01	Planned to construct WtE plant of 300 TPD	1	4
Thrissur	1065.24	84.34	36.34	Yes	Proposed one WtE plant of 200 TPD Land identified	OWC, Aerobins, Biogas plants, Pipe compost, compost pits, Kitchen bins,	463.46	309.60	9	283.18	Planned to construct WtE plant of 200	1	3

Name of District	Quantity of Municipal Solid Waste		Status of door to door collection (%)	Status of segregation at source	No: of MSW treatment facilities with their capacities		Quantity of waste treated (TPD)			Gap in generation and treatment (Compost pits are provided in premises of panchayaths and municipalities is yet to be reported)	Plan of action to overcome the gaps	Number of Dumpsites and status of legacy waste management	
	Total Generated (TPD)	Collected (TPD) (Dry waste)			Designed	Operational	Composting and other decentralised facilities	Materials recovered, recycled & Coprocessed, Scrap feeders	Quantity of waste Landfilled			Major	Minor
						Windrow and vermi composting units					TPD		
Palakkad	918.91	103.62	47.75	Yes	Proposed one WtE plant of 200 TPD Land available	Aerobins, Biogas plants, Pipe compost, compost pits, Kitchen bins, Windrow composting	444.73	267.59	1.2	205.38	Planned to construct WtE plant of 200 TPD	1	1
Malappuram	1360.62	172.88	50.13	Yes	Proposed one WtE plant of 200 TPD Land available	Aerobins, Biogas plants, Pipe compost, compost pits, Kitchen bins	619.00	396.42	0.6	344.59	Planned to construct WtE plant of 200 TPD		3
Kozhikode	1098.40	223.31	69.88	Yes	One WtE plant of 300 TPD started	Windrow composting, Aerobins, Biogas plants, Pipe compost, compost pits, Kitchen bins	460.29	319.37	1.5	317.23	Work for WtE plant of 300 TPD started	1	1



Name of District	Quantity of Municipal Solid Waste		Status of door to door collection (%)	Status of segregation at source	No: of MSW treatment facilities with their capacities		Quantity of waste treated (TPD)			Gap in generation and treatment (Compost pits are provided in premises of panchayaths and municipalities is yet to be reported)	Plan of action to overcome the gaps	Number of Dumpsites and status of legacy waste management	
	Total Generated (TPD)	Collected (TPD) (Dry waste)			Designed	Operational	Composting and other decentralised facilities	Materials recovered, recycled & Coprocessed, Scrap feeders	Quantity of waste Landfilled			Major	Minor
Wayanad	265.37	36.83	45.04	Yes	Proposed one WtE plant Land identified	Aerobins, Biogas plants, Pipe compost, compost pits, Kitchen bins	139.10	77.33	0	48.95			2
Kannur	872.76	176.33	68.32	Yes	Proposed one WtE plant of 200 TPD Land available	Aerobins, Biogas plants, Pipe compost, compost pits, Kitchen bins	382.27	254.39	17.5	218.60	Planned to construct WtE plant of 200 TPD	2	2
Kasaragod	434.03	44.24	43.48	Yes		Aerobins, Biogas plants, Pipe compost, compost pits, Kitchen bins	193.96	126.46	0	113.61			2
<b>Total</b>	<b>11449.39</b>	<b>1772.96</b>			10 WtE plant of total 1920 TPD		5135.01	3332.79	130.84	<b>2850.76</b>		10	29

## Chapter II

### STATUS OF IMPLEMENTATION OF INTERVENTIONS

A snapshot of the status of interventions is provided in the table given below, while the detailed status is outlined in the subsequent sections.

The colour coding for the cases is presented below:

Colour	Status
Green	Complete
Yellow	In Progress
Red	Yet to be initiated
Blue	Not Applicable to State Context

Sl. No.	Cases		Order	Status	Page No.
2.1.	Order dated 25-4-2019 of the Hon'ble NGT in O.A.No.606/2018 on waste management	Para 48 (i)	At least three cities and three towns in the State and at least three Villages in every District of the State may be identified within two weeks and earnest and demonstrable endeavor be made to make them fully compliant in respect of environmental norms within six months. Remaining State may be made fully compliant within one year.	<p>The State identified three cities, three towns, and three villages in each district (42 villages). Earnest and demonstrable endeavor has been taken to bring those model city/town/villages fully compliant in respect of environmental norms.</p> <p>State Level Advisory Committee on waste management is convened by the Chief Secretary every month to review the progress achieved in the implementation of Solid waste treatment plants.</p> <ul style="list-style-type: none"> <li>• 37 meetings have so far been conducted.</li> <li>• By this drive, in the State, land has been identified at ten places for the Waste to Energy plant and of which work has been initiated at</li> </ul>	

Sl. No.	Cases		Order	Status	Page No.
				<p>Kozhikode.</p> <ul style="list-style-type: none"> <li>Tendering of the works has been done with the support of Kerala State Industrial Development Corporation.</li> <li>Waste Characterisation study is done by Kerala State Pollution Control Board in the dumpsite of Kannur Corporation</li> <li>Extra manpower (9 technical assistants) and 20 Graduate Engineering Apprentices have been provided through PCB for monitoring the compliance from October 2020 onwards.</li> </ul>	
2.2	<p>Order dated 16-1-2019 in O.A.No.606/2018 on waste management</p> <p>Order dated 25-4-2019 in O.A. No. 606/2018 on waste management</p> <p>Order dated 12-9-2019 in 606/2018 on waste management</p> <p>Order dated 07-01-2020 in 606/2018 on waste management</p>	<p>Para 40(a)</p> <p>Para 48(ii)</p> <p>Para. 4</p>	<p>Status of compliance of Solid Waste Management Rules, 2016 in the respective areas.</p> <p>A quarterly report be furnished by the Chief Secretary, every three months</p> <p>Information on current status, desirable level of compliance in terms of statutes, gap between current status and desired levels, proposal of attending the gap with time lines, name and designation officer for ensuring compliance to provisions under statutes is to be submitted by the Chief Secretary to CPCB for submitting to Hon'ble NGT</p> <p>In view of above, CPCB needs to redesign formats and secure relevant quantifiable information from the Chief Secretaries under different heads so that the Chief</p>	<p>The State is ensuring compliance to Rules 11, 22, 23 and 24. The State requires two years for achieving full compliance.</p> <p>For <b>Regional Sanitary Landfill</b>, land (25 acre) has been identified at site of FACT at Ambalamedu, Ernakulam and action is being taken for take over.</p> <p>Additional details Submitted in the Revised Format to the Central Pollution Control Board vide letter dated PCB/HO/NGT/06/2018/06/2019 dated</p>	<p>49</p> <p>50</p>

Sl. No.	Cases		Order	Status	Page No.
	Order dated 10-01-2020 in 606/2018 on waste management	Part 13	<p>Secretaries are able to respond to the Tribunal on their appearance as per schedule of appearance.</p> <p>Compliance of SWM Rules requires taking up several steps mentioned in Rule 22 from serial no. 1 to 10 and order dated 17.07.2019 in O.A No 519/2019 to commence legacy waste remediation on 01-11-2019. Continued failure of the above will result in liability of every local body to pay compensation.</p> <p>Steps be ensured by the Chief Secretary in terms of direction of this Tribunal especially with respect to plastic waste , Bio medical waste, Construction and Demolition waste and with respect to hazardous waste , E waste, polluted industrial clusters, reuse of treated water, performance of CTPs/ ETPs, ground water extraction, ground water recharge, Restoration of water bodies, noise pollution and illegal sand mining</p> <p>Compensation regime laid down for failure of local bodies and/or Department of Irrigation and Public Health/ In charge Department to take action for treatment of sewage</p> <p>Compensation in terms may be deposited with the CPCB for being spent on restoration of environment which may be ensured by the Chief Secretaries.</p> <p>An Environment Monitoring Cell may be set up in the office of Chief Secretaries within one month (Hon'ble NGT order dated 24.01.2020 in O.A No 514/2019 )</p> <p>Compliance reports in respect of significant environmental issues may be furnished I terms of order dated 07.01.2020 quarterly with a copy to CPCB.</p>	<p>15/05/2020 as per Hon'ble NGT order dated 07.01.2020 in O.A 606/2018. The same has been updated in the present report.</p> <p>Environment Monitoring Cell consist of Engineer from PCB, Legal Officer and official from general administration dept</p> <p>The Cell reports to the staff officer to the Chief Secretary who is an IAS Officer. All important matter in which Chief Secretary has to take action is brought to the notice of the Chief Secretary and concerned departments for speeding up the matter.</p> <p>Environment Monitoring Cell was formed vide G.O.(Rt)No.22/2020/Envt dated 27.02.2020 and is functioning in the office of the Chief Secretary.</p>	

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	Order dated 2-7-2020 in O.A. 606/2018 on waste management		<p>The appearance of the Chief Secretary of Kerala is scheduled on 8-2-2021. All the State/UTs may take further steps for compliance of environmental norms in terms of directions already issued including taking coercive measures for non-compliance against the polluters as well as erring officers and recovering compensation. Quarterly report may continue to filed with a copy to CPCB. CPCB may file consolidated reports quarterly. There may be a separate column showing compliance of direction for model compliant cities, towns and villages in every State. The Chief Secretaries may have this as one of the focus areas in their presentation also.</p> <p>The documents namely Model concession agreement, RFP, empanelled agencies, checklists prepared by NITI Aayog were uploaded in the website.</p>	Action has been taken to levy environmental compensation from Kochi Corporation; Chalakkudy Municipality; Kollam Corporation, Thodupuzha Municipality, Kattappana Municipality and 51 Panchayaths in October , 2020 for non-compliance of solid waste management. Action was also taken to initiate prosecution against Kochi Corporation.	
	Order dated 17-7-2019 in O.A.No.519/2019 with on waste management	<p>Para.25</p> <p>Para.28</p>	<p>Order deals with the issue of dumpsites and the guidelines of CPCB, and Indore model or other model for bio mining and bioremediation, is found to be suitable to be followed for other big dumps, the same may be followed which may be monitored by the Chief Secretaries</p> <p>The Chief Secretaries may ensure allocation of funds for processing of legacy waste and its disposal and in their respective next reports, give the progress relating to management of all the legacy waste dump sites. Remediation work on all other dumpsites may commence from 1-11-2019 and completed preferably within six months in no case beyond one year.</p>	<p>The State initiated action for compliance.</p> <p>39 dumpsites have been identified in the State, of which 10 are large.</p> <p>Clearing of legacy waste completed at Erumakuzhy in Thiruvananthapuram. It is under progress in another site at Palayam in Thiruvananthapuram. Biomining started at Njaliyanparambu, Kozhikode. Work awarded for the site at Kollam. It is under tendering at Brahmapuram, Kannur and in Munnar Grama panchayath.</p>	42

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2.3	Order dated 16-1-2019 in O.A.No.606/2018 on waste management	Para 40(a)	Status of compliance of Plastic Waste Management Rules, 2016 in the respective areas.	<p>Ban of single use plastic items including plastic carrybags irrespective of thickness in the State w.e.f 01/01/2020 vide G.O.(Ms)No. 6/2019 Env dated 27/11/2019;G.O.(Ms) No. 8/209/ENVT dated 19/2/2019; G.O.(Ms) No. 2/2020 /ENVT dated 27-1-2020 and vide GO no G.O.(Ms) No.4/2020 Emtv dated 16/02/2020.The other items include sheets made of plastic for single use spread on tables in function venues; Spread of plates while serving food; Plates, cups and decorative materials made of styrofoam or thermocol; single use utensils like cups, plates, dishes, spoons, forks, straw, stirrer; non-wove bags, plastic flags, plastic packets for packing fruits and vegetables; PET drinking water bottles less than 500 ml and plastic drinking pouches.</p> <p>Ban on single use plastic items exist in the State. As per G .O.(Ms)No. 6/2019 Env dated 27/11/2019, District Collector, Sub-Divisional Magistrate concerned Board officers, Secretaries of all local bodies ad officers as per Section 19 of the Environment Protection Act were directed for strict monitoring. The details of inspection conducted as on 4/11/2020 are given below:</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Unit</th> <th></th> </tr> </thead> <tbody> <tr> <td>Inpsections condcted</td> <td>Number</td> <td>465</td> </tr> <tr> <td>Violations observed</td> <td>Number</td> <td>153</td> </tr> <tr> <td>Fine imposed</td> <td>Rupees</td> <td>13,05,000</td> </tr> <tr> <td>Fine collected</td> <td>Rupees</td> <td>3,35,000</td> </tr> </tbody> </table>	Subject	Unit		Inpsections condcted	Number	465	Violations observed	Number	153	Fine imposed	Rupees	13,05,000	Fine collected	Rupees	3,35,000	66
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				<p>For the implementation of the producer responsibility as per Solid Waste Management Rules, 2016 and Plastic Waste Management Rules, 2016, Kerala State convened National level seminar on 12-6-2019. A hearing of brand owners was conducted on 7-12-2019 and evolved proposal for the implementation of EPR and is under the consideration of the Government.</p> <p>The State has ensured compliance to Rules 16 on constitution of State Level Advisory Committee and Rule 17 on annual report. The State requires one year for achieving full compliance.</p>	
2.4	Order dated 16-1-2019 in O.A.No.606/2018 on waste management		Status of compliance of Bio-Medical Waste Management	<p>The State has complied with Rule 13 on annual report.</p> <p>Presently, Common Biomedical waste treatment facility of capacity 55.8TPD is in operation in Palakkad.</p>	78

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	Order dated 15-7-2019 in O.A. No. 710/2017, 711/2017, 712/2017 and 713/2017	Para. 8	<p>The State may furnish complete inventory of HCFs and BMW generation within two months and where the inventories are in complete, the same may be completed. The order is to ensure authorization by all HCFs, setting up common treatment and disposal facility, furnish information on the barcode system, and for satisfactory action plans. Chief Secretaries may personally monitor compliance of environmental norms including BMW Rules with the District Magistrate once every month. The District Magistrate may conduct such monitoring twice every month.</p> <p>District Environmental Plan is to be prepared by District Committee chaired and monitored by District Magistrate. Such District Environment Plan and constitution of District committee may be placed in the website of district. Monthly report to be filed by District Magistrate to the Chief Secretary and this may be placed on the website of district for a period of one year. This may be operative from 1-8-2019.</p>	<p>Trial run of CBWTF in Ambalamedu by Kerala Enviro Infrastructure Limited will be started by the end of January, 2020.</p> <p>For CBWTF at Ambalamedu by IMA, the Kochi Corporation earmarked 3 acre land to IMAGE for the project.</p> <p>Clean Kerala Company submitted proposal for setting up landfill at the site of KINFRA at Ambalamedu and is under the consideration of the Government.</p> <p>Inventory has been submitted to the Central Pollution Control Board.</p> <p>District Level Monitoring Committee (DLMC) constituted under the Chairmanship of District Collector, has informed to submit the District Environmental Plan. All District have submitted District Environment Plan.</p>	
2.5	Order dated 25-4-2019 of the Hon'ble NGT in O.A.No.606/2018 on waste management	Para 48(a)	Status of compliance of E-Waste Management Rules, 2016 in the respective areas	The State initiated action for the compliance of EPR. The State has complied with Rule 18 on submission of annual report, and is in the process of setting up a waste processing unit which will become operational in 2020 and land has been allotted to Clean Kerala Company Limited. Tendering has been done for the dismantling project. Bids obtained from two	



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				<p>companies are under processing.</p> <p>Action is being taken for the implementation of EPR in the State. Inventory on e-waste is being prepared with the support of NIIST, Thiruvananthpruam</p> <p>Clean Kerala Company collected 250TPD of e-waste for transferring to recyclers.</p> <p>In the informal sector, around 1000T of e-waste has been collected and of which 267 T has been transferred to registered recyclers</p>	
2.6	<p>Order dated 25-4-2019 of the Hon'ble NGT in O.A.No.606/2018 on waste management</p> <p>Orders dated 12.04.2019 and 26.08.2019 in O.A no. 804/2017 in the matter of Rajiv Narayan &amp; Anr. Vs. Union of India &amp; Ors.</p>	<p>Para 48(a)</p> <p>Para 10</p>	<p>Status of compliance of Hazardous Management Rules, 2016 in the respective areas</p> <p>The Chief Secretaries may look into the issue of capacity building of the SPCB/PCCs to deal with the issue of compliance of the rules.</p> <p>All the Chief Secretary of the all States/UTs have to provide compliance status report on implementation of recommendation made by Monitoring Committee in its interim report as well as final report to monitor of provisions of Hazardous &amp; Other Waste (Management and Transboundary Movement) Rules 2016.</p>	<p>The State has complied with Rule 20(3).</p> <p>Action is being taken to bring all ports under consent purview. Cotaminated sites have been identified and reported to CPCB Action is being take to conduct Environment audit in captive SLF and common Hazardous Landfill</p>	

Sl. No.	Cases		Order	Status	Page No.
	Order dated 7.7.2020 in O. A. No. 804/2017		The Chief Secretaries of the State at State level and Ministry of Environment, Forest and Climate Change (MoEF&CC) and CPCB at National level may monitor compliance.	<b>Meetings were conducted at the Government level on 9.10.20 and 16.10.20 with concerned departments. Empowered committee headed by the Principal Secretary was constituted for the effective implementation of the Hazardous Waste Management Rules. Meeting conducted on 11.11.2020</b>	
2.7	Order dated 25-4-2019 of the Hon'ble NGT in O.A.No.606/2018 on waste management	Para 48(a)	Status of Batteries Waste Management and Handling Rules, 2001	The State has complied with Rule.	
2.8	Order dated 16-1-2019 in O.A.No.606/2018 on waste management	Para 40 (b)	Status of functioning of Committees constituted by this order.	The State has complied with the order, and formed a State Level Monitoring Committee and District Level Monitoring Committee. Field visits have been undertaken.State Level Monitoring Committee and District Level Monitoring Committees are holding meetings and take follow up actions for the compliance of the rules.	
2.9.	Order dated 16-1-2019 in O.A.No.606/2018  Order dated 20-9-2018 and 8-4-2019 in O.A.No.673/2018 on polluted stretches.  Order dated 25-1-2019 in O.A.No.581/2018 on river		Item (c) of para 40 of the order dated 16-1-2019 in O.A.No.606/2018 on polluted stretches.  As per order dated 20-9-2018 in O.A.No.673/2018 action plan is to be submitted for 21 polluted stretches  As per order dated 25-1-2019 in O.A.No.581/2018 directing the State to take remedial action on action plan.  As per order dated 8-4-2019 in O.A. No. 673/2018 Karamana action plan was approved.	The implementation of Karamana river action plan has been reviewed by RRC.  Action plans for 20 Priority IV & V Polluted stretches were submitted in December 2018. Macroplans for 13 stretches were submitted in June 2019. Though the remaining exempted category is in an advanced state, as instructed by the Central Pollution Control Board, action plans were submitted for the remaining seven polluted stretches on 30-7-2019.The progress on the implementation of action plan is reviewed regularly.	

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	<p>Karamana.</p> <p>Order dated 25-1-2019 in O.A.No.582/2018 on river Tirur-Ponnani.</p> <p>Order dated 17-9-2019 in O.A.No.829/2019</p>	<p>As per order dated 25-1-2019 in O.A.No.582/2018 directing the State to prepare the action plan of Tirur-Ponnani within one month.</p> <p>The Tribunal is also considering the issue of remedying 351 identified polluted stretches.</p>	<p>Action Plan for Tirur – Ponnani submitted to CPCB and Hon'ble NGT.</p> <p>Action plan for priority river IV revised submitted and approved.</p>	
	<p>Order dated 8-4-2019 in OA 673/2018</p>	<p>The Central Monitoring Committee will also co-ordinate with the RRCs of the States and oversee the execution of the action plans, taking into account the timelines, budgetary mechanism and other factors. Chief Secretaries of States will be the nodal agency at State level. The Chief Secretaries of the States may undertake review of progress of RRCs by involving concerned Secretaries of Department of Urban Development, Environment, Industries, Irrigation and Public Health, Health etc.</p>	<p>Chapter VI</p>	
	<p>Order dated 28-8-2019 in O.A. No. 673/2018</p>	<p>SPCBs/PCCs may ensure remedial action against noncompliant CETPs or individual industries in terms of not having ETPs/fully compliant ETPs or operating without consent or in violation of consent conditions. This may be overseen by the CPCB. CPCB may continue to compile information on this subject and furnish quarterly reports to this Tribunal which may also be uploaded on its website.</p> <p>All the Local Bodies and or the concerned departments of the State Government have to ensure 100% treatment of the generated sewage and in default to pay compensation which</p>	<p>Action is being taken for levying Environmental Compensation from the defaulting units.</p>	

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		<p>is to be recovered by the States/UTs, with effect from 01.04.2020. In default of such collection, the States/UTs are liable to pay such compensation. The CPCB is to collect the same and utilize for restoration of the environment.</p> <p>The CPCB needs to collate the available data base with regard to ETPs, CETPs, STPs, MSW facilities, Legacy Waste sites and prepare a river basin-wise macro picture in terms of gaps and needed interventions.</p>	<p>Draft Dossier on sewage and effluent for the State has been prepared.</p>	
	<p>Order dated 29-11-2019 in O.A. No. 673/2018</p> <p>Order dated 6-12-2019 in O.A. No. 673/2018</p>	<p>i) 100% treatment of sewage may be ensured as directed by this Tribunal vide order dated 28.08.2019 in O.A. No. 593/2017 by 31.03.2020 at least to the extent of in-situ remediation and before the said date, commencement of setting up of STPs and the work of connecting all the drains and other sources of generation of sewage to the STPs must be ensured. If this is not done, the local bodies and the concerned departments of the States/UTs will be liable to pay compensation as already directed vide order dated 22.08.2019 in the case of river Ganga i.e. Rs. 5 lakhs per month per drain, for default in in-situ remediation and Rs. 5 lakhs per STP for default in commencement of setting up of the STP.</p> <p>ii) Timeline for completing all steps of action plans including completion of setting up STPs and their commissioning till 31.03.2021 in terms of order dated 08.04.2019 in the present case will remain as already directed. In default, compensation will be liable to be paid at the scale laid down in the order of this Tribunal dated 22.08.2019 in the case of river Ganga i.e.</p>	<p>Action is being initiated at Bharathapuzha, Pamba and Manimala</p>	

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		<p>Rs. 10 lakhs per month per STP.</p> <p>iii) It was directed that an institutional mechanism be evolved for ensuring compliance of above directions. For this purpose, monitoring may be done by the Chief Secretaries of all the States/UTs at State level and at National level by the Secretary, Ministry of Jal Shakti with the assistance of NMCG and CPCB.</p> <p>iv) For above purpose, a meeting at central level must be held with the Chief Secretaries of all the States/UTs atleast once in a month (option of video conferencing facility is open) to take stock of the progress and to plan further action. NMCG will be the nodal agency for compliance who may take assistance of CPCB and may give its quarterly report to this Tribunal commencing 01.04.2020.</p> <p>v) The Chief Secretaries may set up appropriate monitoring mechanism at State level specifying accountability of nodal authorities not below the Secretary level and ensuring appropriate adverse entries in the ACRs of erring officers. Monitoring at State level must take place on fortnightly basis and record of progress maintained. The Chief Secretaries may have an accountable person attached in his office for this purpose.</p> <p>vi) Monthly progress report may be furnished by the States/UTs to Secretary, Ministry of Jal Shakti with a copy to CPCB. Any default must be visited with serious consequences at every level, including initiation of prosecution, disciplinary action and entries in ACRs of the erring officers.</p>	<p>Monthly reports have been submitted to the Jal Shakti by the Board.</p> <p>For speeding up tendering process, e-tendering is being done by KSIDC for waste to energy plants, biomining and other projects</p>	

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			<p>vii) As already mentioned, procedures for DPRs/tender process needs to be shortened and if found viable business model developed at central/state level.</p> <p>viii) Wherever work is awarded to any contractor, performance guarantee must be taken in above terms.</p> <p>ix) CPCB may finalize its recommendations for action plans relating to P-III and P-IV as has been done for P-I and P-II on or before 31.03.2020. This will not be a ground to delay the execution of the action plans prepared by the States which may start forthwith, if not already started.</p> <p>xi) Since the report of the CPCB has focused only on BOD and FC without other parameters for analysis such as pH, COD, DO and other recalcitrant toxic pollutants having tendency of bio magnification, a survey may now be conducted with reference to all the said parameters by involving the SPCB/PCCs within three months. Monitoring gaps be identified and upgraded so to cover upstream and downstream locations of major discharges to the river. CPCB may file a report on the subject before the next date by e-mail at <a href="mailto:judicial-ngt@gov.in">judicial-ngt@gov.in</a>.</p> <p>xii. Rivers which have been identified as clean may be maintained.</p>	<p>Regular monitoring is done by Kerala State Pollution Control Board</p>	

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	Order dated 22-6-2020 in O.A. No. 673/2018	<p>The Court reiterated their directions in order dated 6.12.2019 in the present matter, reproduced in Para 38 above, read with those in order dated 21.5.2020 in OA 873/2017 and directed CPCB and Secretary, Jal Shakti to further monitor steps for enforcement of law meaningfully in accordance with the directions of the Hon'ble Supreme Court and this Tribunal.</p> <p>The monitoring is expected with reference to ensuring that no pollution is discharged in water bodies and any violation by local bodies or private persons are dealt with as per mandate of law as laid down in orders of the Hon'ble Supreme Court and this Tribunal without any deviation from timelines. The higher authorities must record failures in ACRs as already directed and recover compensation as per laid down scale. Every State/UT in the first instance must ensure that at least one polluted river stretch in each category is restored so as to meet all water quality standards upto bathing level. This may serve as a model for restoring the remaining stretches.</p>	<p>Chapter VI</p> <p>Monitoring is conducted in additional stations in the polluted stretches.</p>	
	Order dated 21-9-2020 in O.A. 593/2017; 673/2018; 829/2019 and 148/2016	<p>i) All the States/UTs may address gaps in generation and treatment of sewage/effluents by ensuring setting up of requisite number of functional ETPs, CETPs and STPs, as directed by the Hon'ble Supreme Court in (2017) 5 SCC 326.</p> <p>ii) The timeline for commissioning of all STPs fixed by the Hon'ble Supreme Court, i.e., 31.03.2018, has long passed. The Hon'ble Supreme Court directed that the State PCBs must initiate prosecution of the erring Secretaries to the Governments, which has also not happened. This Tribunal was directed to monitor compliance and in the course thereof, we direct that compensation may be recovered in the manner already directed in earlier orders (See, Paras 5 and 6 herein), which may be deposited with the CPCB for restoration of the environment.</p>	<p>Chapter V</p> <p>Action is being initiated for levying Environmental Compensation from the defaulting units</p>	

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		<p>iii) The unutilized capacity of the existing STPs may be utilized expeditiously.</p> <p>iv) The States/ UTs may ensure that the CETP, ETPs and STPs meet the laid down norms and remedial action be taken wherever norms are not met.</p> <p>v) It must be ensured that no untreated sewage/effluent is discharged into any water body. Prompt remedial action may be taken by the State PCBs/PCCs against non-compliant ETPs/CETPs by closing down or restricting the effluents generating activity, recovering compensation and taking other coercive measures following due process of law.</p> <p>vi) Directions outlined in Paras 24-26 herein may be implemented by the States/ UTs, and their compliance monitored by the Chief Secretaries at the State level, and the CMC at the National level.</p> <p>vii) Wherever action plans have not yet been finalized in respect of polluted river stretches or polluted coastal stretches, the same may be completed within one month from today. The execution of action plans may be overseen in the manner already directed in OA 673/2018 by River Rejuvenation Committees (RCCs). In the coastal areas, the said Committees may be known as 'River/Coastal Rejuvenation Committees'. The action plans must have provision for budgetary support in the manner laid down by the Hon'ble Supreme Court or otherwise which aspect may also be monitored by the CMC.</p> <p>viii) Directions outlined in Para 29 herein may be implemented by the concerned coastal States/ UTs, and their compliance monitored by the Chief Secretaries at</p>	<p>Meetings were conducted with Kerala Coastal Zone Management Authority (KCZMA) , CUSAT, NCCR (Chennai) and CEE, RO EKM. Coastal Survey also initiated.</p>	



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		<p>the State level, and the CMC at the National level. OA No. 829/2019 stands disposed of and further monitoring of the issue will henceforth be in OA 593/2017 and OA 673/2018.</p> <p>ix) Directions outlined in Para 34 and 35 herein may be implemented by the States/ UTs, and their compliance monitored by the Chief Secretaries at the State level, and the CMC at the National level. OA No. 148/2016 stands disposed of and further monitoring of the issue will henceforth be in OA 593/2017 and OA 673/2018.</p> <p>x) CMC may consider development of an appropriate App to enable easy filing and redressal of grievances with regard to illegal discharge of sewage/effluents.</p> <p>xi) The monitoring by the CMC may have the target of reduction of pollution loads and improvement of water quality of rivers and coastal areas.</p> <p>xii) The CMC may also monitor the setting up of the bio-diversity parks, constructed wetlands and other alternative measures to reduce pollution load.</p> <p>xiii) The CMC may also monitor demarcation of flood plain zones.</p> <p>xiv) The treated sewage water may be duly utilized for secondary purposes by preparing appropriate action plans and reports in this regard be filed with the CPCB periodically.</p> <p>xv) CMC may submit its consolidated update report incorporating all the above, before the next date. Each action point mentioned in Para 26 may be individually covered, and summarized in a tabular format.</p>		

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2.10.	Order dated 16-1-2019 in O.A.No.606/2018	Para 40 (d)	Non attainment city on air quality	None of the cities in Kerala is included in the Non-attainment cities. However, the action plan to expand the ambient air-quality monitoring network was submitted to CPCB. Continuous Real-Time Monitoring is being done in 8 locations. There is also proposal submitted for providing stations in two more town. Alappuzha, Palakkad	
	Order dated 8-10-2018-Non-attainment cities (OA No.681/2018)	Para 15 (i)	All the states with non-attainment cities must prepare appropriate action plans within 2 months aimed at bringing the standards of air quality within the prescribed norms within 6 months from the date of finalization of action plans.		
2.11.	Order dated 16-1-2019 in O.A.No.606/2018  Order dated 13-12-2018 in O.A.No.1038/2018  Order dated 14-11-2019 in O.A. No. 1038/2018	Para 40 (e)	As per order dated 13-12-2018 in O.A.No.1038/2018 SPCB is to finalize the time bound action plan with regard to identification of industrial clusters in accordance with the revised norms laid down by the CPCB. To restore environmental qualities within norms.  As per order dated 14-11-2019, meaningful action has to be taken by the State PCBs/PCCs as already directed and action taken report furnished showing the number of identified polluters in polluted industrial areas mentioned above, the extent of closure of polluting activities, the extent of environmental compensation recovered, the cost of restoration of the damage to the environment of the said areas	Greater Kochi was identified as critically polluted in 2009. The score was again calculated in 2011 and the Moratorium imposed on developmental activities in the Greater Kochi Area as CPA was lifted vide office memorandum No. J-11013/5/2010-1A II (I) dated 23.05.2011 by Ministry of Environment and Forest.  Now the score has been reduced and now this area is identified as "Other Pollutant Stretches" only. However preparation of Action Plan for monitoring the Air Quality within the limit has been initiated.	

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2.12.	<p>Order dated 16-1-2019 in O.A.No.606/2018</p> <p>Order dated 4-9-2018 in O.A.No.173/2018 by Sudarsan Das Vs. State of West Bengal and others</p>	Para 40 (f)	Item (f) of para 40 of order dated 16-1-2019 in O.A. No.606/2018	Not Applicable	
2.13.	Order dated 16-1-2019 in O.A.No.606/2018	Para 40 (g)	Total amount collected from erring industries on the basis of "Polluter Pays Principle" "Precautionary Principle and details of utilization of funds collected.	<p>15 Industries have been fined, INR 7.25 Crores have been collected.</p> <p>Direction issued to Thrissur Corporation for environmental compensation of Rs. 4.5 Crore. Land has been identified by the Corporation for the centralized plant.</p> <p>Notice issued to Thiruvananthapuram Corporation for giving environmental compensation of 14.59 crore. Land has been identified for the centralized plant at Vizhinjam. Tendering is being done.</p> <p>Notice was also issued to Kochi Corporation, Municipalities namely Thrippunithura, Aluva, Angamaly, and Kalamassery and Maradu panchayath for taking steps to provide biomethanation plant for the food wastes generated.</p> <p>Direction issued to the three hospitals and to DMO and Urban Directorate and Panchayath in Idukki in OA 585/2018. Meeting conducted with DMO, Urban and Panchayath Directorate in May, 2020 and</p>	

Sl. No.	Cases		Order	Status	Page No.
				action is being taken for the implementation of the decisions.	
2.14	Order dated 16.09.2020 in O.A No 514/2019		<p>Directed the Chief Secretary, Kerala to take the matter seriously and take remedial action by constituting a three member team of Secretary, Urban Development Department, Chairman, State PCB and concerned Municipal Commissioner.</p> <p>The Chief Secretary, Kerala may personally monitor the compliance of these directions at least on monthly basis and record the proceedings.</p> <p>The Chief Secretary may further direct that if the targeted actions are not taken, the erring officers will not be entitled to draw their salaries from a specified date till compliance.</p> <p>The Chief Secretary, Kerala may file his personal affidavit giving information about commencement of work relating to remediation of legacy waste site(s) and waste processing plant to handle day-to-day waste generation to avoid creation of legacy waste dump site before the next date</p>	Committee was constituted at the Government level and the progress is being reviewed.	
2.15	Order dated 23-09-2019 in O.A.No. 585/2018	Para 14	As per order dated 23-09-2019 in O.A.No. 585/2018, directed the Chief Secretary, State of Kerala to look into matter along with Director of Urban Directorate and Panchayat Director and the respective Principal Secretaries at the State Level and take appropriate against those erring officers who are standing against of the Rules and delaying the implementation of rules so far.	Showcause notice issued to 2 municipalities 51 panchayats and 127 Health care institutions for not levying Environmental Compensation.	

Sl. No.	Cases		Order	Status	Page No.
2.16.	Order dated 16-1-2019 in O.A.No.606/2018	Para 40 (h)	Identification and development of Model Cities and Towns in the State in the first phase which can be replicated later for other cities and towns of the State	As in Sl. No. 2.1 above	
2.17.	Order dated 16-1-2019 in O.A.No.606/2018  Order dated 19-2-2019 in O.A.No.593/2017  Order dated 28-8-2019 in O.A.No.593/2017		As per order dated 19-2-2019 in O.A.No.593/2017, Chief Secretaries may specially look into the subject of setting up and proper functioning of STPs/CETPs/ETPs in their respective jurisdiction.  All the local bodies and or the concerned departments of the state government have to ensure 100% treatment of the generated sewage and in default to pay compensation which is to be recovered by the State/UTs, with effect from 01.04.2020. The Chief Secretaries of all the State/UTs may furnish their respective compliance report on this subject also in O.A.No.606/2018	Non-functioning ETPs have been identified and further action has been initiated. The reports for the term up to November 2019 have been submitted.  The Urban Directorate has been informed.	
2.18	Order dated 21-5-2020 in O.A. 593/2017		i) All States/UTs through their concerned departments such as Urban/Rural Development, Irrigation & Public Health, Local Bodies, Environment, etc. may ensure formulation and execution of plans for sewage treatment and utilization of treated sewage effluent with respect to each city, town and village, adhering to the timeline as directed by Hon'ble Supreme Court. STPs must meet the prescribed standards, including faecal coliform.  CPCB may further continue efforts on compilation of River Basin-wise data. Action plans be firmed up with Budgets/Financial tie up. Such plans be overseen by Chief Secretary and forwarded to CPCB before 30.6.2020. CPCB may consolidate all action plans and file a report		

Sl. No.	Cases	Order	Status	Page No.
		<p>accordingly.</p> <p>Ministry of Jal Shakti and Ministry of Housing and Urban Affairs may facilitate States/UTs for ensuring that water quality of rivers, lakes, water bodies and ground water is maintained.</p> <p>As observed in para 13 above, 100% treatment of sewage/effluent must be ensured and strict coercive action taken for any violation to enforce rule of law. Any party is free to move the Hon'ble Supreme Court for continued violation of its order after the deadline of 31.3.2018. This order is without prejudice to the said remedy as direction of the Hon'ble Supreme Court cannot be diluted or relaxed by this Tribunal in the course of execution. PCBs/PCCs are free to realise compensation for violations but from 1.7.2020, such compensation must be realised as per direction of this Tribunal failing which the erring State PCBs/PCCs will be accountable</p> <p>ii) The CPCB may study and analyse the extent of reduction of industrial and sewage pollution load on the environment, including industrial areas and rivers and other water bodies and submit its detailed report to the Tribunal.</p> <p>iii) During the lockdown period there are reports that the water quality of river has improved, the reasons for the same may be got studied and analysed by the CPCB and report submitted to this Tribunal. If the activities reopen, the compliance to standards must be maintained by ensuring full compliance of law by authorities statutorily responsible for the same.</p>	6 Monthly Reports submitted to Ministry of Jal Shakti	

Sl. No.	Cases		Order	Status	Page No.
			<p>iv) Accordingly, it is directed that States which have not addressed all the action points with regard to the utilization of sewage treated water may do so promptly latest before 30.06.2020, reducing the time lines in the action plans. The timelines must coincide with the timelines for setting up of STPs since both the issues are interconnected. The CPCB may compile further information on the subject accordingly.</p> <p>v) Needless to say that since the issue of sources of funding has already been dealt with in the orders of the Hon'ble Supreme Court, the States may not put up any excuse on this pretext in violation of the judgment of the Hon'ble Supreme Court.</p>		
2.19	<p>Order dated 17-9-2019 in O.A.No.829/2019</p> <p>Order dated 29-11-2019 in O.A.No.829/2019</p>		<p>The Tribunal has directed that no untreated sewage/industrial effluent be discharged into any water bodies (which include coastal waters). Any violation is to result in compensation starting from 01.02.2020</p> <p>District Environment Plans to be prepared on coastal and marine pollution</p> <p>Direction to all SPCB of Coastal state to give relevant information to CPCB within 1 month</p>	Informed Urban Directorate	
2.20	Order dated 26-9-2019 in OA.No. 360/2018	Para. 12	The Department of Environment of all States may collect such District Environment Plans of their respective states and finalize the State Environment Plan covering the specific thematic area in Para. 7 including the information as contained in Para-8 and template of model by CPCB, The action for preparation of State's Environment Plan shall be monitored by the respective Chief Secretaries of the State.	District Environmental Plan was submitted by all districts. Action is being taken to prepare State Environment Plan.	

Sl. No.	Cases		Order	Status	Page No.
2.21	Order dated 10-5-2019 in OA No 325/2015  Order dated 25-02-2020 in OA No 325/2015	Para 13  Para .5	All the States are directed to review the existing framework of restoration of all the water bodies by preparing an appropriate action plan. Such action plan may be submitted within three months and a report furnished to the CPCB. The Chief Secretaries of all the State in the course of undertaking monitoring exercise in pursuance of order in OA 606/2018 may also include restoration of water bodies. Information is to be provided by 31-03-2020 failing which compensation is to be paid. The Action plan should provide for commencement from 01.04.2020 and conclusion 31-03-2021	The Board submitted the report to the CPCB in their format on 17-3-2020. Action initiated for 2 <sup>nd</sup> phase including field monitoring.	
2.22	Order dated 05-11-2019 in O.A. No. 639/2018		The Hon'ble National Green Tribunal vide Order dated 05-11-2019 in O.A. No. 639/2018 directed that State Pollution Control Board may undertake capacity enhancement out of consent fund by procuring requisite equipments, setting up of modern labs and recruiting/engaging staff and experts. It is also directed that all vacancies must be filled up as already directed by NGT vide order dated 28-08-2019 I O.A. No. 95/2018 which may be ensured by the Chief Secretary.	The Board is working with 433 employees including 93 permanent employees. An amount of Rs.2.9 crore is incurred monthly towards salary and other expenses which are met from the consent fund.  For permanent appointment, notification was issued on 26-12-2015 for appointment by Public Service Commission and rules notified on 14-11-2019. After getting sanction for the renewal of Kerala State Pollution Control Board Subordinate Service Rules, 1999, Government can make permanent appointment to the Board.	



**CHAPTER III**  
**COMPLIANCE STATUS OF SOLID WASTE MANAGEMENT RULES, 2016 & NGT ORDER ON**  
**MODEL CITIES/TOWNS/VILLAGE (606/2018)**

### **3.1 Background**

The Government of Kerala has taken efforts to implement the Solid Waste Management Rules, 2016 in the State. There are 6 Corporations, 87 Municipalities and 941 GPs in the State. The Kerala State Pollution Control Board (KPSCB) issued repeated directions to all local bodies to ensure compliance of the Solid Waste Management Rules, 2016. 3831.6 TPD of solid waste is generated from the cities and towns. The Government of Kerala constituted a State Level Advisory Committee on Waste Management chaired by the Chief Secretary; this Committee has conducted **37** meetings, till date, for monitoring solid waste management on monthly basis.

The Government of Kerala vide G.O. (Rt.) No. 45/2019/Env. dated 31-5-2019 selected three model cities, three model towns and 42 model villages (3 each in 14 districts) in the State. The model cities are Thiruvananthapuram, Thrissur and Kozhikode and three model towns are Attingal, Punalur and Kunnankulam. Workshops were convened to make them fully complied with environmental norms.

### **3.2 Present status**

#### **3.2.1. State Level Committee chaired by Chief Secretary**

The Chief Secretary is monitoring the compliance on monthly basis. 37 meetings have so far been conducted and progress has been observed.

#### **3.2.2. Constitution of Environment Monitoring Cell**

Environment Monitoring Cell was formed vide G.O.(Rt)No.22/2020/Env. dated 27.02.2020. The Cell is functioning in the office of the Chief Secretary and is co-ordinating with different departments.

#### **3.2.3 Activities under Rule 22 of the Solid Waste Management Rules, 2016**

- (a) Rule 22(1) - Identification of suitable sites for setting up solid waste processing facilities**
- (b) Rule 22(3)- Procurement of suitable sites for setting up solid waste processing facility and sanitary landfill facilities**
- (c) Rule 22(7)- Setting up solid waste processing facilities by all local bodies having one lakh population or more population**
- (d) Rule 22(8)- Setting up solid waste processing facilities by local bodies and census town below 1 lakh population**

#### **Action taken -**

- **Proposal for Co-incineration submitted by Malabar Cements, Palakkad**
  - Entrusted National Council for Cement and Building Materials (NCBM) to study and prepare a technical proposal considering the various technical aspects with regards to AFR/co-processing.

- NCBM submitted the proposal with multi-channel burner system which is not presently practiced/established in the country and may affect the productivity and smooth operations of the plant at increased thermal substitution rates
  - The facilities for using liquid hazardous waste like used/spent oil on marginal scale can also integrate after conforming the suitability
  - The investment required for the same as per the Techno Economical Feasibility Study (TEFS) for Co-processing of Alternate Fuel is around Rs. 44.62 Crore.
  - Finance Department to expedite the review of the proposal from Malabar Cements Ltd in detail and to explore the possibility of allocating funds under MIDP scheme to Malabar Cements Ltd for modernizing the plant and RKI has accorded approval to the proposal.
  - Industries Department informed that the project has been dropped by the company and the Board is taking further action
- **Sites for Waste to Energy plant identified are Kannur, Kozhikode, Palakkad, Thrissur, Kochi, Kollam, Thiruvananthapuram, Malappuram, Munnar and Sulthan Bathery.** Work awarded for the plant at Kozhikode. The progress is given below:
  - A revised proposal for allocation of funds for the developmental initiatives of waste to energy projects under Major Infrastructure Development Projects head was submitted by Kerala State Industrial Development Corporation on 18th January 2020, to Planning and LSG Departments.

Sl. No	Corporation/ Municipality	Status	
1)	Waste to Energy Plant, Kozhikode Njaliyanparambu (Govt. land) 12.67 acre	1.1 Waste to Energy Plant	-----
		<ul style="list-style-type: none"> <li>● Work awarded to Zonta Infratech Private Limited for the construction of Waste to Energy Plant at Njaliyan parambu. A company namely M/s.Malabar Waste Management Limited was formed. The Concessionaire has informed that the Financial Closure for the project has been achieved – SBI has agreed for a debt funding of Rs 146 crores.</li> <li>● Consent to establish was issued to the waste to Energy plant.</li> <li>● Clearing of ground for the plant is undergoing.</li> </ul>	
		1.2 Biomining at Njaliyanparambu	-----
		<ul style="list-style-type: none"> <li>● M/s Zonta Infratech Pvt Ltd started the work of clearing of legacy waste on 3rd March, 2020.</li> <li>● The clearing work of legacy waste resumed at the dumpsite on 4th May 2020 and 40% of legacy waste in Zone I has been removed.</li> <li>● SLAC directed the company to expedite the clearing of legacy waste</li> </ul>	

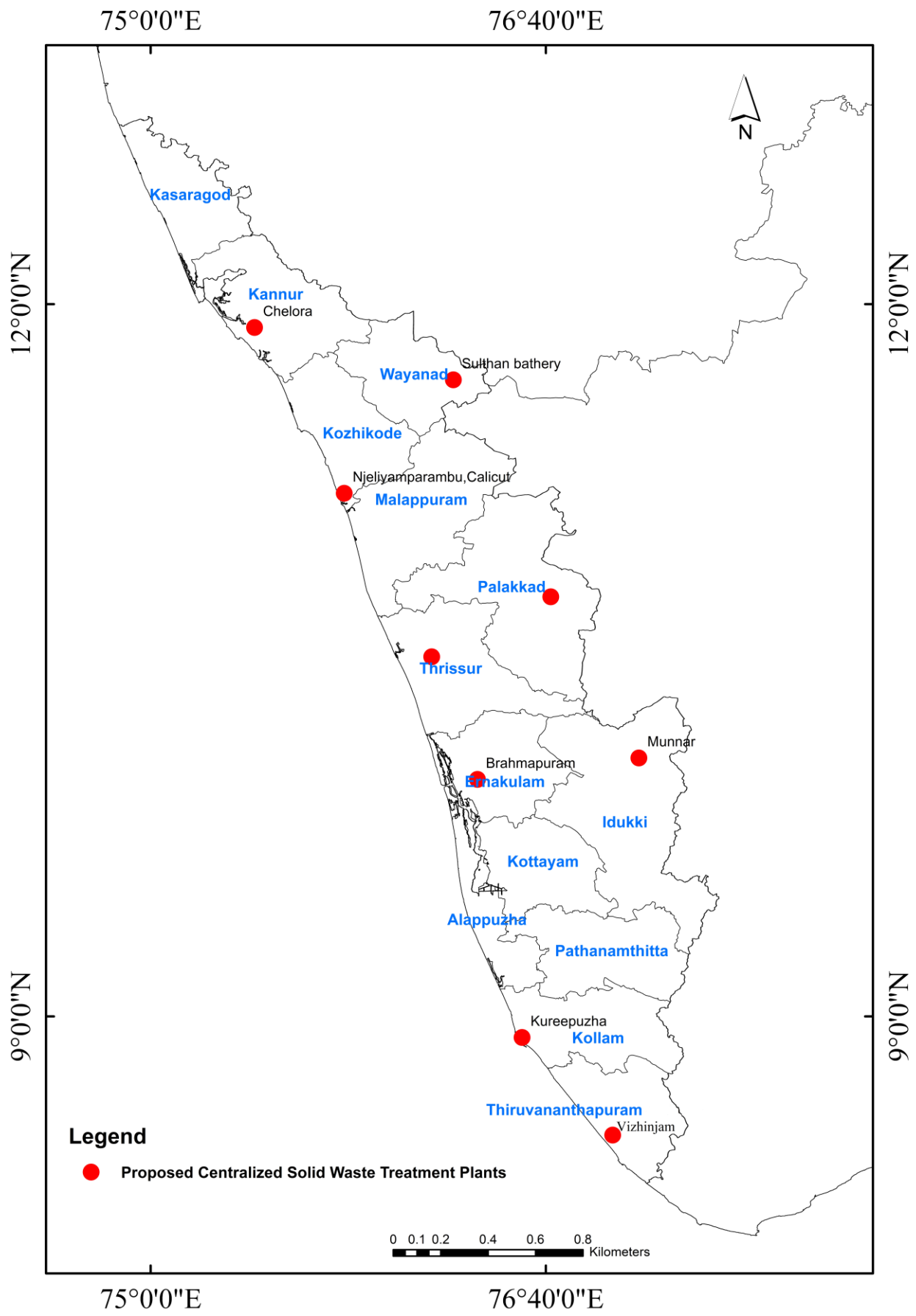
Sl. No	Corporation/ Municipality	Status	
2)	Kannur Chelora (Govt. Land) 9.7 acres	<p>2.1 Waste to Energy Plant</p> <ul style="list-style-type: none"> <li>• Blue Planet Kannur Waste Solutions Private Limited was formed to take up the development of the project.</li> <li>• Waste Characterisation study is conducted by SPCB</li> <li>• SLAC directed MD, KSIDC &amp; Secretary, Kannur Municipal Corporation to take immediate steps to execute the Lease Agreement and Concession Agreement for the project.</li> <li>• KSIDC has completed the tender process and the final offer along with details of the contractor, draft agreement to be executed with the Contractor and the technical proposal submitted by the Contractor has been forwarded to Kannur Corporation on 07th August 2020 for further proceedings.</li> <li>• KSIDC modified the Lease Deed addressing the Kannur Corporation's concern on alienation of 9.7 acres of land at Chelora. The modified lease deed was submitted to the Secretary Corporation for execution. Further a stake holder meeting was held to explain the project details to the councilors on 24th August 2020 and all concerns raised were discussed and explained. Despite all these steps, Kannur Corporation has not leased the land at Chelora to KSIDC and a council resolution authorizing the Secretary Kannur Corporation to execute the concession agreement has not been passed. Concession agreement can be executed only on receiving land to KSIDC.</li> </ul>	
		<p>2.2 Legacy waste</p> <ul style="list-style-type: none"> <li>• Govt vide GO(Rt) No. 714/2020/LSGD dated 27-3-2020 issued direction to Kannur Municipal Corporation to hand over the 9.75 acres of the land identified at Chelora on lease basis to KSIDC for the development of Waste to Energy project and to execute MoU with KSIDC for clearing the existing legacy waste at dump site in Chelora.</li> <li>• Detailed waste characterization of study of dumpsite at Chelora was done by the Pollution Control Board. SLAC directed the Board to submit final study report along with remarks to KSIDC for further proceedings. The Board submitted the report to KSIDC.</li> <li>• Agreement has been executed with M/s Zonta</li> </ul>	

Sl. No	Corporation/ Municipality	Status	
		Infratech Pvt Ltd, the selected bidder on 21st October for carrying out the rehabilitation of MSW dumpsite at the site. Asked Secretary Kannur Municipal Corporation to take immediate steps with the Contractor to expedite the works for rehabilitation of MSW dumpsite at Chelora.	
3)	Palakkad Kanjikode (Land taken over from Kerala State Electricity Board Ltd. in advance possession) 15 acres	<p>3.1 Waste to Energy Plant</p> <ul style="list-style-type: none"> <li>• Blue Planet Kannur Waste Solutions Private Limited was formed to take up the development of the project.</li> <li>• The Concession Agreement for the project has been executed and the Concessionaire has taken steps for preparing the DPR for the project. The Concessionaire has engaged M/s Dun &amp; Bradstreet for preparing the DPR and that the study is in the final stages. The concessionaire has reported that the draft DPR for the project is expected by 3rd week of Nov 2020.</li> <li>• LSGD has accorded sanction to KSIDC to take necessary steps to execute the Concession Agreement in consultation with Concerned Local Self Government institutions.</li> <li>• Accordingly KSIDC has taken steps to execute the Concession Agreement. The Concession Agreement for Palakkad project is executed on 24th August 2020.</li> <li>• Concessionaire has commenced the preparation of DPR for the project. The draft DPR is expected by end November 2020</li> </ul>	
4)	Kollam Kureepuzha (Govt. land) 7.05 acres	<p>4.1 Waste to Energy Plant</p> <ul style="list-style-type: none"> <li>• M/s Venad Waste Management Solutions Pvt Ltd has submitted the draft DPR for the Integrated Solid Waste Management project with a Waste to Biogas facility of 200 TPD processing capacity. DPR has been evaluated.</li> </ul> <p>4.2 Biomining</p> <ul style="list-style-type: none"> <li>• For biomining the site, the Corporation informed that draft agreement to be executed with M/s.Zonta Infratech Pvt Limited is vetted by the Corporation's Standing Counsel and the same will be placed in the next Council meeting for approval.</li> <li>• SLAC directed the Secretary Kollam Corporation</li> </ul>	

Sl. No	Corporation/ Municipality	Status	
		to take necessary steps to ensure either the Contractor follow the tender conditions or cancel the present tender and go for re-tender immediately.	
5.	Thiruvananthapuram Vizhinjam	<p>5.1 Waste to Energy Plant</p> <ul style="list-style-type: none"> <li>• Land identified for the solid waste processing plant for setting up the plant at Vizhinjam. The approval of the Board of VISL is to be obtained by the Board for the transfer of 15 acres of land on lease to KSIDC. The Board approval is to be communicated to the Port Department to issue necessary orders. The Port department informed that notification to take back the land will be submitted soon.</li> <li>• KSIDC re tendered the project on Swiss Challenge mode on 27th May 2020 and 30th June was the last date for the submission of bids. The pre bid meeting as part of tender procedures was held on 08th June 2020. The last date for the submission of bids was 14th July 2020. KSIDC did not receive any challenging bids for the project.</li> <li>• KSIDC directed M/s Essential Sustainability Services Incorporated to submit details regarding the technical and financial capabilities of the Consortium members and in response received certain details from them which was then evaluated</li> <li>• The Bid Evaluation Committee is satisfied with the technical plan presented by the consortium, and resolved that the consortium led by M/s. Pan American Communication Services S.A. is technically qualified and recommended that the financial bid submitted by the Consortium be evaluated.</li> <li>• Bid Evaluation Committee further resolved that the following details shall be obtained from Consortium before the opening of the financial bid – Testimonials of technology use, operating videos of the wte plants under this technology, Undertaking from the technology partner, Consortium members consent, analysis reports of the exhaust gas and ash. The above details were sought from the consortium and the consortium in response submitted certain details.</li> <li>• Directed State Pollution Control Board to evaluate the Technical proposal submitted by the Consortium for confirming the uniqueness and authenticity of the proposed technology.</li> </ul>	
6)	Ernakulam Brahmapuram (Govt. land) 20 acres	<ul style="list-style-type: none"> <li>• 6.1 Waste to energy plant</li> <li>•</li> <li>• KSIDC was authorized to take immediate steps to float an RFP for the selection of suitable concessionaire to set up Waste to Energy plant at</li> </ul>	

Sl. No	Corporation/ Municipality	Status	
		<p>Brahmapuram. The last date for submission of bids has been extended to 14th September 2020.</p> <ul style="list-style-type: none"> <li>•</li> <li>• Technical bids submitted by the Bidders needs to be evaluated by the Bid Evaluation Committee and the proposal has been submitted to Government to re constitute the Bid Evaluation Committee. It was reported by LSGD that steps have been taken to re constitute the Bid Evaluation Committee and order in this regard will be issued soon. Also expressed that a restriction can be brought in the tender conditions to prevent one particular company being awarded more than 3 WtE projects on PPP mode at a particular project development time, so as to ensure more competition and also easier financial closure.</li> </ul>	
		<p>6.2 Biomining</p> <ul style="list-style-type: none"> <li>• KSIDC floated e-tender to identify a suitable agency for the rehabilitation of MSW dump site at Brahmapuram. KSIDC submitted a proposal to constitute a Technical Evaluation Committee for technical evaluation of the bids. Evaluation of technical bid is in process.</li> <li>• LSGD issued directions to Kochi Corporation to examine the quantity of legacy waste assessed and rate quoted by the bidder in consultation with PCB within 30 days</li> </ul>	
7)	Idukki Munnar 2 acres	<p>7.1 Waste to Energy Plant</p> <ul style="list-style-type: none"> <li>• Evaluated the technical bid submitted by the Consortium of M/s Al Bucheeri General Transport Est, Pathanamthitta, M/s Al Bucheeri Transporting Est UAE and M/s Organic Recycling Systems Pvt Ltd, Mumbai on 19th August 2020.</li> <li>• The Committee observed that the Consortium is meeting the technical and financial minimum eligibility criteria. The consortium made a detailed presentation of their technical plan before the Bid Evaluation Committee.</li> <li>• SLAC after detailed discussion resolved to accord sanction to proceed with the Financial evaluation of the Bid</li> </ul>	
		<p>7.2 Biomining started at Munnar Panchyath. Macro particles like plastic, tyres, metal particles etc already finished with the help of JCB. Action for installing machinery for further process is going on for turning it into briquets for construction purpose.</p>	

<b>Sl. No</b>	<b>Corporation/ Municipality</b>	<b>Status</b>	
8)	Wayanad Sulthan Bathery 0.5 acres	<ul style="list-style-type: none"> <li>• Construction of platform completed</li> <li>• Action to be taken on the installation of machinery</li> </ul>	
9)	Thrissur	<p>9.1 Waste to Energy Plant</p> <ul style="list-style-type: none"> <li>• Thrissur Corporation identified land at Ollookkara village in Thrissur district.</li> <li>• Vide GO (Rt) No 111/2020/LSGD dated 13/01/2020 State Government has accorded sanction to Thrissur Municipal Corporation to purchase the identified land at Ollookkara Village in Thrissur district and to hand over the same on lease basis to KSIDC for the development of the project</li> <li>• Secretary, Thrissur Municipal Corporation to report the status of price negotiation done with the owners of the land identified.</li> </ul>	
		<p>9.2 Biomining of legacy waste</p> <p>Proposal submitted to Suchitwamission for sanction.</p>	
10)	Malappuram 8.09 acres	<ul style="list-style-type: none"> <li>• KSIDC reported that Land Board has issued orders to District Administration Malappuram to hand over 8.09 acres of land at Kurumbathoor village in Tirur Taluk to KSIDC and that KSIDC has submitted necessary application in prescribed format to District Administration. SLAC directed to expedite the process.</li> </ul>	



Map showing proposed Waste to Energy plant



- e) Rule 22(2)- Identification of suitable sites for setting up common regional sanitary landfill facilities for suitable clusters of local authorities under 0.5 million population and for setting up common regional sanitary landfill facilities or stand alone sanitary landfill facilities by all local authorities having a population of 0.5 million or more
- (f) Rule 22(3)- Procurement of suitable sites for setting up solid waste processing facility and sanitary landfill facilities
- Action is being taken for the procurement of suitable site at Thrissur and Thiruvananthapuram Corporation for setting up solid waste processing facilities
  - Action is also being taken for the allotment of land of KINFRA at Ambalamedu, Ernakulam for the providing of Regional landfill.
- (g) Rule 22(9)-Setting up common or stand alone sanitary landfills by or for all local bodies having 5 lakh or more population for the disposal of only such residual wastes from the processing facilities as well s untreatable inert wastes as permitted under rules
- Land has been identified at the site of FACT at Ambalamedu, Ernakulam for the Regional sanitary landfill and action is being taken at the Government level for the takeover of the same\_
- (h) Rule 22(10)Setting up common or regional landfills by all localbodies and census town under 5 lakh for the disposal of permitted waste under the rules
- Action has been initiated for providing secured landfill at Attingal.
- (i) Rule 22(5) -Ensure Door to Door collection of segregated waste and its transportation in covered vehicles to processing or disposal facilities
- (j) Rule 22(4) – Enforcing waste generators to practice segregation of biodegradable, recyclable, combustible, sanitary waste, domestic hazardous and inert solid waste at source

For the model city/town/villages, considerable progress has been achieved in providing door to door facility for dry wastes in both households (84.5%) and establishments (73%).

## I Door to Door Collection

### A. Model City/Town/ Panchayath

#### A 1 Households

Status of Achievement	No of Model city		No of Model town		No of Model villages	
	Dry	Wet*	Dry	Wet*	Dry	Wet*
<u>75 -100%</u>	<u>1</u> (Thrissur)		<u>2</u> (Kunnamkulam, Punalur)		<u>35</u>	<u>1</u>
50- <75%	1 (Kozhikode)				4	2
25 - <50%		1 (Kozhikode)	1 (Attingal)		3	1
Below 25 %	1 (Thiruvananthapuram)	2 (Thiruvananthapuram,	-	3 (Attingal,	0	38

		Thrissur)		Punalur, Kunnamkulam)		
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\* Windrow and vermi composting, aerobins, biogas plants, kitchen bins, bio composter, biobin, pipe and ring compost, compost pits etc

## A2. Establishments

Status of Achievement	No of Model city		No of Model town		No of Model villages	
	Dry	Wet	Dry	Wet	Dry	Wet
<b>75 -100%</b>	<b>1</b> (Thiruvananthapuram)	<b>1</b> (Thiruvananthapuram)	<b>3</b> (Attingal, Punalur, Kunnamkulam)	<b>1</b> (Attingal)	<b>31</b>	<b>1</b>
50- <75%	2 (Thrissur, Kozhikode)				3	
25 - <50%		1 (Kozhikode)			3	2
Below 25 %		1 (Thrissur)		2 (Kunnamkulam, Punalur)	5	39

## B. All Corporations, Municipalities

### B1. HOUSEHOLD

Status of Achievement	No of Corporation		No of Municipality	
	Dry	Wet	Dry	Wet
75 -100%	<b>3</b> (Kochi, Kollam, Thrissur)	<b>1</b> (Kochi)	<b>29</b>	<b>4</b>
50- <75%	2 (Kozhikode, Kannur)		16	
25 - <50%		2 (Kozhikode, Kannur)	18	5
Below 25 %	1 (Thiruvananthapuram)	3 (Thiruvananthapuram, Thrissur, Kollam)	24	78

### B2. ESTABLISHMENTS

Status of Achievement	No of Corporation		No of Municipality	
	Dry	Wet	Dry	Wet
75 -100%	3 (Thiruvananthapuram, Kozhikode, Kannur)	1 (Thiruvananthapuram)	26	4
50- <75%	2 (Kochi, Thrissur)	3 (Kochi, Kannur, Kozhikode)	10	1

Status of Achievement	No of Corporation		No of Municipality	
	Dry	Wet	Dry	Wet
25 - <50%	1 (Kollam)	1 (Kozhikode)	12	3
Below 25 %		2 (Thrissur, Kollam)	39	79

### C 1. Door to Door collection in all Municipalities- Households

Status of Achievement		75 -100%	50- <75%	25 - <50%	Below 25 %
Thiruvananthapuram	Dry		1 (Varkala)	2 (Attingal, Neyyattinkara)	1 (Nedumangad)
	Wet	Composting at source level in the premises is yet to be reported by the panchayat and municipalities			4 (Nedumangad, Attingal, Neyyattinkara Varkala)
Kollam	Dry	3 (S.paravur, Punalur, Kottarakara)		1 (Karunagapally)	-
	Wet	1 (Kottarakara)			4 (Karunagapally, Kottarakara, S.paravur, Punalur)
Pathanamthitta	Dry	1 (Thiruvalla)	2 (Pandalam, Pathanamthitta)	-	1 (Adoor)
	Wet	Composting at source level in the premises is yet to be reported by the panchayat and municipalities			4 (Adoor, Pathanamthitta, (Pandalam, Thiruvalla)
Alappuzha	Dry	2 (Alappuzha, Harippad)	2 (Cherthala, Mavelikkara)	1 (Kayamkulam)	1 (Chengananur)
	Wet	1 (Alappuzha)			5 (Chengananur, Cherthala, Kayamkulam, Mavelikkara, Harippad)
Kottayam	Dry		1 (Erattupetta)	1 (Pala)	4 (Changanassery, Ettumanoor, Kottayam, Vaikom)
	Wet	Composting at source level in the premises is yet to be reported by the panchayat and municipalities			6 (Changanassery, Ettumanoor, Kottayam, Vaikom, Pala, Erattupetta)

Status of Achievement		75 -100%	50- <75%	25 - <50%	Below 25 %
Idukki	Dry	2 (Thodupuzha, Kattapana)			
	Wet	Composting at source level in the premies is yet to be reported by the panchayat and municipalities		1 (Kattapana)	1 (Thodupuzha)
Ernakulam	Dry	2 (Thrikkakara, Thripunithura)	1 (N.paravur)	3 (Aluva, Kalamassery, Piravam)	7 (Angamaly,Eloor, Koothatukulam,Kot hamangalam, Muvattupuzha,Mar adu,Perumbavoor)
	Wet	2 (Thrikkakara, Thripunithura)		2 (Aluva, Kalamassery)	9 (Angamaly, Eloor, Kothatukulam, Kothamangalam, Muvattupuzha, N.Paravur, Maradu, Perumbavoor, Piravom)
Thrissur	Dry	3 (Chalakudy, Kodungallur, Kunnamkulam)	-	3 (Chavakkad, Irinjalakuda, Vadakanchery)	1 (Guruvayur)
	Wet	Composting at source level in the premies is yet to be reported by the panchayat and municipalities			7 (Guruvayur, Chavakkad,Irinjalak uda, Vadakanchery, Chalakudy,Kodung allur, Kunnamkulam)
Palakkad	Dry	2 (Shornur, Mannarkkad)	4 (Cheruplassery, Chittur- Thattamangalam, Ottapalam, Palakkad )	-	1 (Pattambi)
	Wet	Composting at source level in the premies is yet to be reported by the panchayat and municipalities			7 (Cheruplassery, Chittur- Thattamangalam, Ottapalam, Mannarkkad, Pattambi, Palakkad, Shornur)
Malappuram	Dry	3 (Kondotty, Malappuram, Tirur)	2 (Ponnani, Thanoor)	3 (Parappanangadi, Perinthalmanna, Thiroorangadi)	4 (Kottakkal, Manjeri,Nilambur, Valanchery)
	Wet	Composting at source level in the premies is yet to be reported by the panchayat and municipalities		1 Parappanangadi	11 (Kondotty, Kottakkal, Malappuram, Manjeri, Nilambur, Perinthalmanna, Ponnani, Thanoor, Thiroorangadi, Tirur, Valanchery)

Status of Achievement		75 -100%	50- <75%	25 - <50%	Below 25 %
Kozhikode	Dry	2 (Mukkam,Vadakara)	1 (Koyilandy)	2 (Faroke, Koduvally)	2 (Payyoli, Ramanattukara)
	Wet	Composting at source level in the premies is yet to be reported by the panchayat and municipalities		1 (Faroke)	5 (Koduvally, Ramanattukara Payyoli, Koyilandy, Mukkam,Vadakara)
Wayanad	Dry	-	-	2 (Kalpetta, Mananthavady)	1 (Sulthanbathery)
	Wet	Composting at source level in the premies is yet to be reported by the panchayat and municipalities		-	3 (Sulthanbathery, Kalpetta, Mananthavady)
Kannur	Dry	6 (Kuthuparambu, Iritty, Matannur, Payannur, Sreekandapuram, Thaliparambu)	2 (Panoor, Thalassery)	-	1 (Anthoor)
	Wet	Composting at source level in the premies is yet to be reported by the panchayat and municipalities			9 (Anthoor, Panoor, Kuthuparambu, Iritty, Matannur, Payannur, Sreekandapuram, Thalassery, Thaliparambu)
Kasargod	Dry	3 (Kanhagad, Kasargod, Nileshwaram)	-	-	-
	Wet	Composting at source level in the premies is yet to be reported by the panchayat and municipalities			3 (Kanhagad, Kasargod, Nileshwaram)

## C2. Door to Door collection in all Municipalities- Establishment

Status of Achievement		75 -100%	50- <75%	25 - <50%	Below 25 %
Thiruvananthapuram	Dry	2 (Attingal Varkala)	1 (Nedumangad)	-	1 (Neyyattinkara)
	Wet	1 (Attingal)	-	-	3 (Neyyattinkara, Nedumangad, Varkala)
Kollam	Dry	2 (S.paravur, Punalur)	-	-	2 (Kottarakara, Karunagapally)
	Wet	-	-	-	4 (Karunagapally, Kottarakara, S.paravur, Punalur)

Status of Achievement		75 -100%	50- <75%	25 - <50%	Below 25 %
Pathanamthitta	Dry	1 (Thiruvalla)	-	-	3 (Adoor, Pathanamthitta, (Pandalam)
	Wet	-	-	-	4 (Adoor, Pathanamthitta, (Pandalam, Thiruvalla)
Alappuzha	Dry	1 (Alappuzha)	-	2 (Chengananur , Kayamkula m)	4 (Cherthala, Kayamkulam,Mavelikk ara, Haripad)
	Wet	-	1 (Alappuzha)	-	5 (Chengannur, Cherthala, Kayamkulam,Mavelikkara , Haripad)
Kottayam	Dry	-	1 (Ettumanor)	-	5 (Changanassery, Kottayam, Vaikom, Pala, Erattupetta)
	Wet	-	-	-	6 (Changanassery, Ettumanoor, Kottayam, Vaikom, Pala, Erattupetta)
Idukki	Dry	2 (Thodupuzha, Kattapana)	-	-	-
	Wet	-	-	-	2 (Thodupuzha, Kattapana)
Ernakulam	Dry	3 (Eloor, N.Paravur, Thripunithura)	1 (Thrikkakara)	2 (Kalamassery, Piravam)	7 (Aluva,Angamaly,Kooth atukulam,Kothamangala m,Muvattupuzha,Marad u,Perumbavoor)
	Wet	1 (Thripunithura)	-	2 (Kalamassery, Thrikkakara)	10 (Aluva,Angamaly,Eloor, Koothatukulam,Kotham angalam,Muvattupuzha, N.Paravur,Maradu,Peru mbavoor,Piravom)
Thrissur	Dry	4 (Guruvayur, irinjalakuda, kunnamkulam, vadakanchery)	2 (chalakudy, chavakkad)	1 (kodungallur)	-
	Wet	-	-	-	7 (Guruvayur, Chavakkad,irinjalakuda,V adakanchery, Chalakudy,kodungallur, Kunnamkulam)
Palakkad	Dry	3 (Cheruplassery, Mannarkkad, Shornur)	1 (Ottapalam)	-	3 (chittur- Thattamangalam, Palakkad,Pattambi)
	Wet	1 (Chittur- Thattamangalam)	-	-	6 (Cheruplassery, ,Ottapalam, Mannarkkad,Pattambi,

Status of Achievement		75 -100%	50- <75%	25 - <50%	Below 25 %
					Palakkad, Shornur)
Malappuram	Dry	1 (Tirur)	2 (Parappanangadi, Ponnani)	4 (Kottakkal, Malappuram, Manjeri, Perinthalmanna)	5 (Kondotty, Nilambur, Thanoor, Thiroorangadi, Valanchery)
	Wet	-	-	1 (Parappanangadi)	11 (Kondotty Kottakkal, Malappuram, Manjeri, Nilambur, Perinthalmanna, Ponnani, Thanoor, Thiroorangadi, Tirur, Valanchery)
Kozhikode	Dry	2 (Mukkam,Vadakara)	1 (Payyoli)	-	4 (Faroke, Koduvally, Koyilandy, Ramanattukara)
	Wet	-	-	-	7 (Faroke, Koduvally, Koyilandy, Payyoli, Ramanattukara, Mukkam,Vadakara)
Wayanad	Dry	1 (Kalpetta)	-	1 (Mananthavady)	1 (Sulthanbathery)
	Wet	-	-	-	3 (Sulthanbathery, Mananthavady, Kalpetta)
Kannur	Dry	3 (Koothuparambu, Mattanur, Sreekantapuram)	2 (Iritty, Payannur)	1 (Panoor)	3 (Thaliparambu,Anthoor , Thalassery)
	Wet	1 (Mattanur)	-	-	8 (Anthoor, Panoor, Koothuparambu, Iritty, Payannur, Sreekantapuram, Thalassery, Thaliparambu)
Kasargod	Dry	-	1 (Nileshwaram)	1 (Kasargod)	1 (Kanhgand)
	Wet	-	-	-	3 (Kanhgand,Kasargod, Nileshwaram)

**(k) Rule 22(11) -Bioremediation or capping of old and abandoned dumpsites**

Biomining of dumpsites cleared at tendered for Kochi, Kozhikode and Kollam. Bio mining is in progress for Palakkad. Dumpsites at Guruvayoor, Punalur, Kottarakkara, Adoor, Thathamangalam, Vaikom, Adoor are informed as cleared and are thus removed from the list.

1. **Legacy waste clearing completed at nine dumpsites** (1. Erumakkuzhi, Thiruvananthapuram 2. Punalur 3. Kottarakkara 4. Adoor, 5. Erumeli 6. Vaikom, 7. Guruvayoor, Thrissur; 8. Pattambi 9. Thathamangalam, Palakkad )

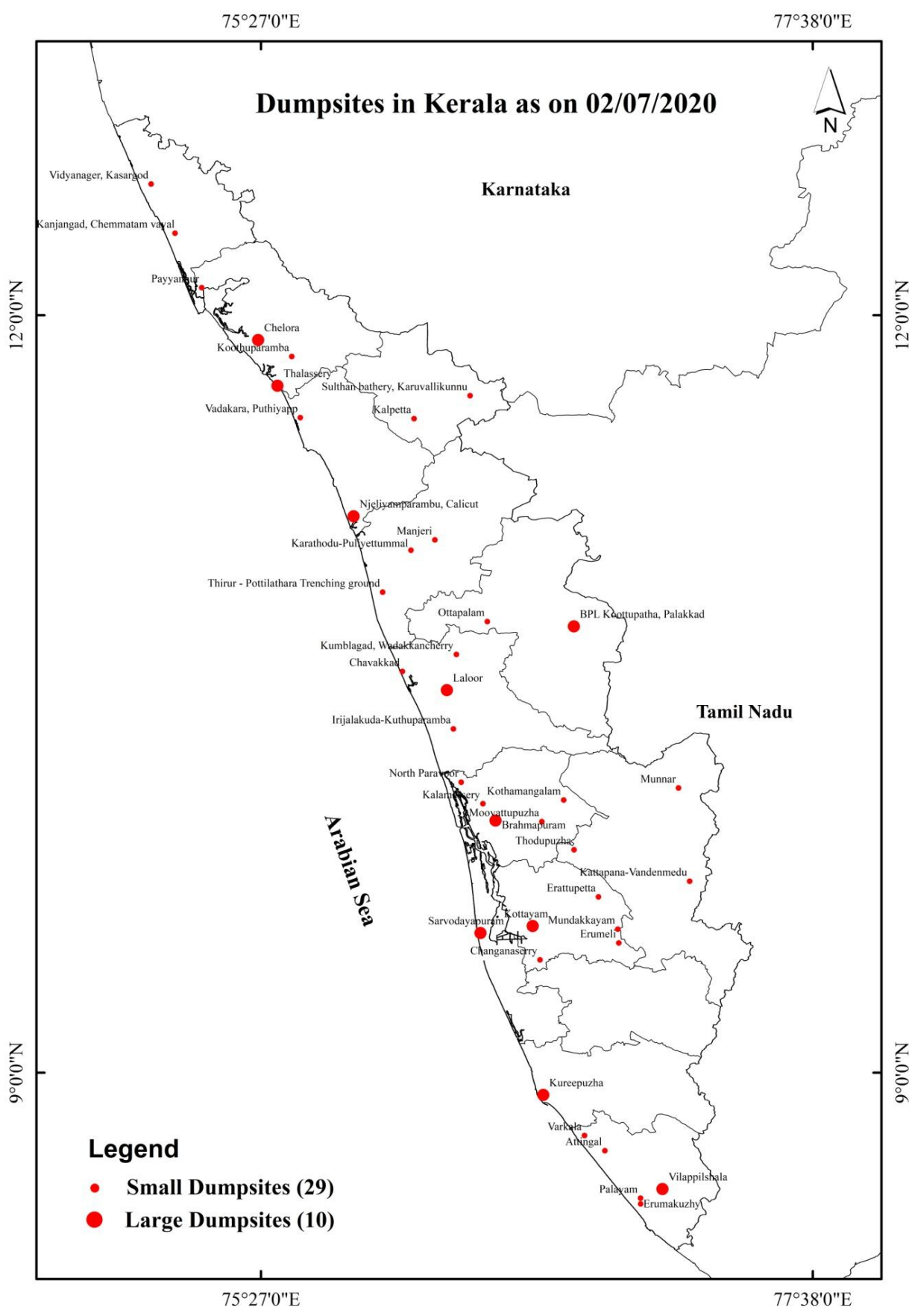
2. Clearing going on at five (1. Kozhikode, 2. Kunnankulam 3. Chalakkudy  
4. Irinjilakkuda 5. Palayam 6. Munna 7. Varkala)
3. Biomining Work awarded to two places (Kureepuzha, Kollam and Chelora, Kannur)
4. Tendering stage at three sites (1. Kottayam, 2. Bhramapuum, Ernakulam, 3. Attingal)

<b>Major Dumpsites locations</b>					
<b>SI No:</b>	<b>Location</b>	<b>District</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Status</b>
1	Vilappilshala	Thiruvanthapuram	8.5388	77.0388	
2	Kureepuzha	Kollam	8.9116	76.5671	Corporation has selected M/s Zonta Infratech Pvt Ltd as the contractor for the project and the matter is being followed up.
3	Kottayam Vadavathoor	Kottayam	9.5808	76.5253	Biowaste had been decomposed and tendering in progress for the disposal of non biodegradable waste
4	Sarvodayapuram	Alappuzha	9.5527	76.3189	Action being taken.
5	Brahmapuram	Ernakulam	9.9983	76.3786	KSIDC floated e-tender to identify a suitable agency for the rehabilitation of MSW dump site at Brahmapuram. KSIDC submitted a proposal to constitute a Technical Evaluation Committee for technical evaluation of the bids.
6	Laloor	Thrissur	10.5149	76.1858	Some area is reclaimed and construction of stadium is progressing and remaining area is taken up for biomining with Clean Kerala mission and KIEL. Proposal under consideration of Suchitwa Mission.
7	BPL Koottupatha, Palakkad	Palakkad	10.7674	76.6881	Under Consideration



8	Njeliyamparambu,Calicut	Kozhikode	11.2036	75.8169	M/s Zonta Infratech Pvt Ltd started the work of clearing of legacy waste on 3 <sup>rd</sup> March, 2020.  The clearing work of legacy waste resumed at the dumpsite on 4 <sup>th</sup> May 2020 and approximately 15000 cum of legacy waste was cleared from the project site as on 12 <sup>th</sup> May 2020. Some disruption due to Covid and Monsoon. Action being taken for resuming work.
9	Chelora	Kannur	11.9018	75.4389	Work awarded to Zonta Infratech Private Limited. Corporation directed contractor to expedite the work.
10	Thalassery	Kannur	11.7207	75.5153	-
<b>Other Dumpsite locations</b>					
<b>Sl No:</b>	<b>Location</b>	<b>District</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Status</b>
1	Attingal	Thiruvanthapuram	8.6911	76.8105	Tendering process
3	Palayam	Thiruvanthapuram	8.5029	76.9519	Clearing is in an advanced stage
4	Varkala	Thiruvanthapuram	8.7509	76.7301	Clearing going
5	Changanassery, Fathimapuram	Kottayam	9.447	76.5541	Project worth 13.5 Lakh completed. 20 lakh project to be implemented soon. Project for bioremediation and under consideration in Suchitwa Mission.
6	Erattupetta- Thevarrupara	Kottayam	9.696229	76.7852972	Planned a proposal with Suchitwa mission, Kerala. Project taken by DPC
7	Mundakkayam - Vettukallamkuzhy	Kottayam	9.5683483	76.8746208	-
9	Kattapana-Vandenmedu	Idukki	9.7583	77.1468	-
10	Thodupuzha	Idukki	9.883	76.6886	-
11	Munnar	Idukki	10.2697	76.9677	Tendering in Progress
12	Kalamassery	Ernakulam	10.0653	76.3282	-
13	Kothamangalam	Ernakulam	10.0797	76.6476	-
14	Moovattupuzha	Ernakulam	9.9942	76.5614	-
15	North Paravoor	Ernakulam	10.1505	76.2424	Central Financial grant 25 Lakhs to disposal of legacy waste.
16	Chavakkad	Thrissur	10.589	76.0099	-
17	Chalakkudy	Thrissur			50 cents reclaimed
18	Irijalakuda-Kuthuparamba	Thrissur	10.3617	76.2115	Some area is reclaimed and construction of windrow compost plant is going on.
19	Kunnamkulam				One acre reclaimed
20	Kumblagad, Wadakkancherry	Thrissur	10.6565	76.223	Biomining project for this site is undertaken as part of SBM Urban DPR. A DPC project on the same

					is also approved for 30 lakhs
21	Ottapalam	Palakkad	10.7868	76.3456	-
22	Karathodu-Puliyettummal	Malappuram	11.0692	76.0434	-
23	Manjeri	Malappuram	11.1101	76.1379	SEUF is entrusted to prepare DPR
24	Thirur - Pottilathara Trenching ground	Malappuram	10.903	75.9316	-
25	Vadakara, Puthiyapp	Kozhikode	11.5945	75.6056	Capping done over a part of legacy waste
26	Kalpetta	Wayanad	11.5906	76.0555	-
27	Sulthan bathery, Karuvallikunnu	Wayanad	11.6814	76.2772	-
28	Koothuparamba	Kannur	11.8364	75.5718	-
29	Payyannur	Kannur	12.109	75.2158	-
30	Kanjangad, Chemmatam vayal	Kasargod	12.3251	75.1098	-
31	Vidyanager, Kasargod	Kasargod	12.5196	75.0154	-



Map showing the dumpsites  
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### 3.3 Action taken against defaulters

- Direction for levying Environmental compensation of Rs.13.9542 crores was issued to Kochi Corporation vide PCB/HO/SEE2/KOCHI CORPN/2019 in October 2020 after serving notices and conducting hearing.
- Action has been initiated for prosecution against the Kochi Corporation as per section 19 of the Environment (Protection) Act 1986 and Section 49 of the Water (Prevention & Control) of Pollution Act 1974, to initiate prosecution and make complaint in the respective Magistrate Court against Kochi Corporation for the violations of the provisions under the Solid Waste Management Rules 2016 and Section 24 of the Water (Prevention and Control of Pollution) Act, 1974 respectively.
- Show cause notice for not levying Environmental compensation of Rs. 2.7663 Crore was issued to Chalakkudy municipality vide PCB/HO/SEE2/Chalakkudy Municipality/2020 dated 2-11-2020.
- For Kollam Corporation, an amount Rs. Rs. 8.8928 Crore was assessed as Environmental compensation and notice was issued on 29-9-2020 informing about the assessed fee. Video conference in this regard was conducted with the Kollam Corporation. Show cause notice was also levied for two municipalities and 51 panchayaths in Idukki district.
- Show cause notice was issued to two municipalities and 51 panchayaths in Idukki district for not levying environmental compensation as per the violation of Solid Waste Management Rules, 2016
- Showcause notice was also issued to 127 health care facilities in idukki district for not levying environmental compensation as per the violation of Biomedical Waste Management Rules, 2016.
- Showcause notices were issued to five municipalities, Aluva, Kalamassery, Angamaly, Thrikkakara, and Thrippunnithura municipalities. Kalamassery Municipality also obtained stay.
- Direction was issued to Thrissur Corporation for remitting environmental compensation (Annexure.5) and they also approached Hon'ble High Court and the Court in judgment dated 26-11-2019 in WP (c) No. 30789 of 2019, directed to approach Hon'ble NGT within the stipulated time or to implede in the case in NGT or both. Then they submitted appeal before the High Court and the Court stayed the notice and directed to have bond with Pollution Control Board that arrears will be given as per the final order of the Court. As per the subsequent direction of the High Court, the Board heard the Secretary and directed to report the progress. However they identified land at Thrissur for solid waste treatment plant and action is taken to procure land. Notice for not levying Environmental Compensation of Rs. 1.12 Crore was issued to Kochi Corporation. Notice for not levying Environmental Compensation of Rs. 2.47

Crore issued to Kalamassery Municipality. Land has been identified for centralized system at Ollukkara, Thrissur.

- Show cause notice for not levying Environmental Compensation of Rs. 14. 59 crore was issued to the model city, Thiruvananthapuram Corporation having no considerable progress in the identification of land and on door to door collection . However the Corporation approached the Hon'ble High Court and has been stayed The case is pending with the Hon'ble High Court. The land has been identified for centralized system at Vizhinjam, Thiruvananthapuram.
- Notice was also issued to Southern Railway, Thiruvananthapuram and Palakkad divisions. The major findings in the reply are as follows:
  - 1) In Thiruvananthapuram division, segregation of solid waste is done. Aerobin is provided for biodegradable wastes and non-biodegradable waste are cleared of dust, shredded and disposed through Clean Kerala Company.
  - 2) Two bottle crusher units are installed in Thiruvananthapuram for the scientific way of treatment of plastic bottles generated from coaches and stations
  - 3) Construction of waste water recycling plant at Thiruvananthapuram. Kochuveli, Nagercoil and Ernakulam is under final stage.
  - 4) Effluent treatment plant is under construction at Irumpanam, Ernakulam.
  - 5) A pilot project for the waste disposal at both Poojappura Railway station and one way station-VAK is under progress.

The matter is being followed up.

### **3.4 Gap Analysis and Action Points of Solid Waste Management (As per Hon'ble NGT order dated 12/09/2019 in OA No. 606/2018) in ULBs**

- i. Quantity of Waste generated / collected /treated in urban area: 3452 \* / 833 / 1837 # TPD { \*waste generated 400 g /person per day; # Decentralised units are reported at household level. Details of centralised and decentralised facilities are enclosed as Annexure.1. }
- ii. Quantity of Waste processed in Composting Sites/ Bio-methanation/ waste to energy plants/ Landfill: 663 TPD# (# This includes treatment in the centralised system.)
- iii. Existing capacity of Waste Processing/ Disposal Facilities: 1837TPD
- iv. Planned capacity of Waste Processing/ Disposal Facilities: 1800 TPD
- v. Timeframe for installation of planned capacity of Waste Processing/ Disposal Facilities: .....24 months
- vi. Percentage of Urban Local Bodies (ULBs)/ Village Panchayats (VPs) Covered and timeframe for covering all the ULBs/VPs: 78% , .24 months

### **3.5 Ban on single use plastic**

- Ban of single use plastic items including plastic carrybags irrespective of thickness in the State w.e.f 01/01/2020 vide G.O.(Ms)No. 6/2019 Env dated 27/11/2019;G.O.(Ms) No. 8/209/ENVT dated 19/2/2019; G.O.(Ms) No. 2/2020 /ENVT dated 27-1-2020 and vide GO no G.O.(Ms)

No.4/2020 Eenvt dated 16/02/2020. The other items include sheets made of plastic for single use spread on tables in function venues; Spread of plates while serving food; Plates, cups and decorative materials made of styrofoam or thermocol; single use utensils like cups, plates, dishes, spoons, forks, straw, stirrer; non-woven bags, plastic flags, plastic packets for packing fruits and vegetables; PET drinking water bottles less than 500 ml and plastic drinking pouches. **Copy of all GOs is enclosed.** Alternative materials that can be used as a substitute for the banned single use plastic has been issued vide G.O. (R t.) No.02/2020/Eenvt. dated 27-01-2020

- Ban on single use plastic items exist in the State. As per G.O.(Ms)No. 6/2019 Env dated 27/11/2019, District Collector, Sub-Divisional Magistrate concerned Board officers, Secretaries of all local bodies and officers as per Section 19 of the Environment Protection Act were directed for strict monitoring. The details of inspection conducted as on 4/11/2020 are given below:

Subject	Unit	
Inspections conducted	Number	465
Violations observed	Number	153
Fine imposed	Rupees	13,05,000
Fine collected	Rupees	3,35,000

List of fine imposed as on 04/11/2020 by the Check squad on the ban Single use plastic							
Sl. No.	District Office	Date of Inspection	No. of Shops Inspected	No. of Violations Observed	Fine Imposed	Fine Collected	Remarks
1	Thiruvananthapuram	13.02.2020	3	3	30,000	10,000	Notice and Mahassar issued and imposed fine
2	Kollam	18.02.2020,27.02.2020	47	17	170,000	20,000	Notice and Mahassar issued and imposed fine
3	Pathanamthitta	03.03.2020	25	6	60,000	0	Notice and Mahassar issued and imposed fine
4	Alappuzha	25.02.2020&26.06.2020	61	3	30,000	30,000	Notice and Mahassar issued . Joint inspection by KSPCB &LSGD
5	Kottayam	13.02.2020&17.02.2020	7	2	20,000	0	Notice and Mahassar issued and imposed fine
6	Idukki	18.02.2020&29.02.2020	33	15	150,000	10,000	Notice and Mahassar issued and imposed fine of Rs. 90,000
7	Ernakulam-DO2	17.02.202	23	8	80,000	30,000	Notice and Mahassar issued and imposed fine
8	Ernakulam-DO1	17.02.202 &18.02.2020	45	8	80,000	50,000	Notice and Mahassar issued and imposed fine
9	ESC	17.02.2020	5	5	50,000	0	Notice and Mahassar issued and imposed fine

<b>List of fine imposed as on 04/11/2020 by the Check squad on the ban Single use plastic</b>							
<b>SI No.</b>	<b>District Office</b>	<b>Date of Inspection</b>	<b>No. of Shops Inspected</b>	<b>No. of Violations Observed</b>	<b>Fine Imposed</b>	<b>Fine Collected</b>	<b>Remarks</b>
10	Thrissur	17.02.2020&18.02.2020	6	6	50,000	0	Notice and Mahassar issued and imposed fine
11	Palakkad	02.2020&30.09.2020, 03.11.20	69	2	20,000	10,000	Notice and Mahassar issued and imposed fine
12	Malappuram	27.02.2020	7	4	40,000	40,000	Notice and Mahassar issued and imposed fine. Stock kept at MCF, Kottakkal
13	Kozhikode	29.02.20,03.03.20,05.03.2020.	76	33	330,000		Notice and Mahassar issued . Joint inspection by KSPCB & KKD Corporation
14	Wayanad	19.02.2020	14	6	60,000		Four by Municipality Notice and Mahassar issued and imposed fine of Rs. 60,000. Stock kept at Suchitwamission
15	Kannur		5	5			Notice and Mahassar issued and asked to remit fine by 25-2-2020 of Rs. 50,000
16	Kasargod	17.01.202,27.02.2020,06.03.202,13.03.2020, 18.09.2020	39	30	135,000	135,000	Notice and Mahassar issued and asked to remit fine by 25-2-2020 of Rs. 50,000
	<b>Total</b>		<b>465</b>	<b>153</b>	<b>1,305,000</b>	<b>335,000</b>	

### 3.6 Awareness Programmes

An awareness programme on 'identification of Single use plastic products by simple methods, its alternatives and compostable products' was conducted by Central Institute of Plastics Engineering & Technology (CIPET) in co-ordination with Kerala State Pollution Control Board at Thiruvananthapuram, Ernakulam and Kozhikode. The officials of Urban and panchayath directorate, Officials of corporation, Municipality, Panchayath (including Engineers and Health inspectors), the members of associations concerned with plastic and PCB officials participated in this programme. The Board also conducted programmes on implementation of Rules at State level, Regional level and District level.

### 3.7 Extended Producer Responsibility under Solid Waste Management Rules

For the implementation of the producer responsibility as per Solid Waste Management Rules, 2016 and Plastic Waste Management Rules, 2016, Kerala State convened National level seminar on 12-6-2019. A hearing of brand owners was

conducted on 07-12-2019 and evolved proposal for the implementation of EPR and is under the consideration of the Government. The financial assistance by brand owners/producers/manufacturers/importers can be remitted in the EPR fund and this fund can be utilized for meeting to the extent possible cost of door-to-door collection. A copy of the proposal is submitted herewith as Annexure12.

### **3.8 Waste quantification as per the report of Suchitwa Mission**

Kerala generates about 10,044TPD of municipal solid wastes; 14% by 6 city Corporations, 45% by Municipalities and 41% generated by 941 Grama Panchayaths. 49% of the waste is generated in households; 36% in institutions and 15% on way sides and public places. 7734 TPD of waste is putrescible in nature, 1808 TPD is non-biodegradable and 502TPD is inert. Non biodegradables wastes include 603TPD of paper, 402TPD of plastic, 100TPD of metals, 100TPD of glass, 200 TPD of rubber and leather and 40TPD of domestic hazardous waste. Currently 3494 TPD, out of total 7734 TPD (45%) of biodegradable waste is treated in households, institutions and community level. This works out to be 45% of the biodegradable waste generated in the State. Projects for installation of 13,09,478 household level composting or bio-methanation units will increase the waste treatment capacity to 71%(i.e. 5491 TPD). The non-biodegradable waste is collected from sources and temporarily stored in material collection facility (MCF). There are 658 operational MCF in Grama panchayaths and 179 operational MCFs in ULBs.

- Segregation of waste is practiced in 75% urban local bodies and 66% Grama panchayths. 87 ULBs out of total 93 ULBs and 620 GPs, out of 941 GPs are practicing segregation at source. The segregation is ensured as the Local Governments are engaging Haritha Karma Sena (HKSs) for Door-to-Door collection of segregated non-biodegradable waste. HKS is a micro-enterprise group formed and trained by the State Poverty Eradication Mission namely Kudumbasree, which collects the segregated waste by charging a user fee. In the initial stages of operation, the HKS is given validity Gap Fund for one year as per the rate fixed by the State Government.
- About 150 schools in Thiruvananthapuram district have installed sanitary napkin incinerator by the Hindustan Life care Systems. 18 ULBs have proposed to install 420 sanitary napkin incinerators at a total cost of Rs. 1.34 Crore.
- Government proposes to establish C&D waste management facility for which fund is earmarked under the budget provision for 2019-20. It is proposed to establish the facility in collaboration with major stakeholders for management of construction and demolition waste, such as building materials, debris, rubbles resulting from construction, re-modelling, repair and demolition of any civil structure. Preliminary discussions have been held with Swatch Bharath Mission (Urban) in the Ministry of Housing and Urban Affairs, Government of India for technical support.
- Government through the Suchitwa Mission has initiated enlistment and registration of all types of scrap dealers in the state to promote recycling. Around 2000 scrap dealers and rag pickers have been registered so far in district wise and their address and contact details are uploaded in the website of Suchitwa Mission. It is estimated that about 50% of recyclable materials are handled by the scrap dealers in the State.
- Government has enlisted 3 accredited agencies and 64 service providers for providing technical services for installation of various tools.
- Government have constituted Haritha Kerala Mission to enable the local authorities to pursue integrated



action for environmental degradation of the State linking with waste management, compost generation, organic cultivation, water conservation etc.

- Government have made it mandatory to provision 10% and 15% of the plan fund received respectively by rural and urban local government for waste management.
- Government is also providing additional fund required for improving infrastructure for waste management as well as awareness and capacity building.
- In 2019-2020, the Urban Local Government earmarked Rs. 178.48 Crore and Rural Local Government earmarked Rs.316.44 Crore for sanitation and waste management. In addition Rs. 75 Crore had been provided under State scheme and Rs. 182.93 Crore had been provided under Centre-State Scheme namely Swachh Bharath Mission.
- Government have constituted Clean Kerala Company to provide waste management services, especially in the management of plastic and other recyclables, e-waste and operation and maintenance of resource recovery facilities established by the Urban Local Government and Block panchayaths.
- Site available for recovery and recycling facility have been notified by Kerala State Industrial Development Corporation and Kerala Industrial Infrastructure development Corporation. Vide G. O. (M.S) No. 6/2019/Envt dated 27-11-2010 has issued direction to earmark 5% area for recycling and recovery in industrial parks.
- Capacity building programs are organized through Kerala Institute of Local Administration to give training to stake holders.
- Aerobic composting and bio-methanation plants are established and operated at 410 tons biodegradable waste per day. Centralized composting plants are operational in 14 locations which also treat market waste on day to day basis.
- Aerobic composting or biomethanation facility is installed in about 4.64 lakh houses, 31075 institutions and 2151 community places. In addition about 30 lakh households are composting their waste in composting pits. Sanction has been given for installation of 13,09, 478 household level composting facilities. In addition 23 ULBs have set up centralized composting plants among which the plants include Brahmapuram plant of capacity 220 TPD at Kochi and at Kozhikode of capacity 100TPD. The rest of the plants have capacity varying from 1 to 10 TPD and of which only 10 are functional. 4090 TPD out of total 7762 TPD of biodegradable waste is treated at households, institutions and community level. This works out to be 53% of the biodegradable waste generated in the State.
- There are 658 operational MCFs in Grama Panchayaths and 179 operational MCFs in ULBs. The non biodegradable waste stored in MCF are transferred to Resource Recovery facility(RRF) for final segregation and recycling.it is proposed to establish 263 RRFs all over the Sate by providing at least one RRF in each block panchayath and Municipality and for each in each city Corporation. All RRFs are provided with plastic shredding units and bailing units. Some of the RRFs are also equipped to recycle plastic materials.
- The Clean Kerala Company Limited is entrusted to collect the non-biodegradable waste from MCF and operate the RRF. From 2016 onwards. the Clean Kerala Company have supplied 665 T of shredded plastic for mixing with bitumen. 360 T of shredded plastics are consumed for road making in Local Self Government Institutions and 315 T by the PWD.

**3.9. Details on sewage management submitted on the Format send vide CPCB letter no B-17011/7/ MSW/2019 dated 17.11.2020**

Questions	Remarks				
<b>Numbers of ULBs</b>	<b>93</b>				
<b>Over all waste management status in States/UTs</b>					
Quantity of MSW generated (TPD)	<b>3452</b>	400 g/person/day			
Quantity of MSW collected (TPD)	<b>833</b>				
Quantity of MSW segregated & transported (TPD)	<b>833</b>				
Quantity of MSW processed (TPD)	<b>2844.5</b>	About 1837 TPD of waste is treated at household level, community level facilities and other in the centralised treatment facilities. Details of centralised and decentralised facilities are enclosed.(Annexure )97 % of dry waste which is recyclable is taken by the scrap dealers and for the remaining non recyclable waste around 3 TPD of waste is collected by Clean Kerala Company			
Quantity of MSW disposed in secured land fill site (TPD)	<b>0</b>				
Gap in Solid Waste Management UTs (TPD) [ 1(a)- 1(d)- 1( e) ]	<b>607.5</b>	In the municipalities, biodegradable waste are disposed in their premises by composting, but this quantity is yet to be reported by the municipalities			
Solid Waste Management Plan	<b>For setting up solid waste treatment plant</b>				
<b>Waste Collection</b>	<b>Existing</b>	<b>Target</b>	<b>Gap</b>	<b>Timeframe</b>	<b>Remarks</b>
ULBs in which waste door to door collection is implemented (No.)	68	93	25	<b>March, 2021</b>	above 25% D2D collection of dry waste in Household: – 68 ULB
ULBs in which segregation of waste is implemented (No.)	68	93		<b>March, 2021</b>	
ULBs in which transportation of segregated waste is implemented (No.)	<b>68</b>	<b>93</b>	<b>25</b>		

<b>Waste Processing</b>					
<u>Material Recovery facilities</u>					
Total Capacity (TPD)	2700			March, 2021	
Number	937 Material collection facilities 678 Mini material collection facilities 166 Resource recovery facilities 59 Nos in ULB	1162 MCF  264 RRF	225 MCF  98 MCF	March, 2021	Details from Suchitwa Mission as on Oct 2020
Number of ULBs covered	57	93	36	March, 2021	
<u>Recycling</u>					
Total Capacity (TPD)	List enclosed Annexure	0	0		
Number	214	0	0		
Number of ULBs covered	93	0	0		
<u>Composting</u>					
Total Capacity (TPD)	420.59			March,2021	
Number	47	93	46	March,2021	
Number of ULBs covered	47	93	46	March,2021	
<u>Biomethanation</u>					
Total Capacity (TPD)	103.15			March, 2021	
Number	12			March, 2021	
Number of ULBs covered	12		0	March, 2021	
<u>RDF</u>					
Total Capacity (TPD)		9	9	2 Years	
Number		9	9	2 Years	
Number of ULBs covered		9	9	2 Years	
<u>Waste to Energy Plants</u>					

Total Capacity (TPD)		11	11	2 Years	
Number	0	11	11		
Number of ULBs covered	0	11	11	11 ULBs	
<b>Waste Disposal</b>					
<u>Landfill</u>					
Total Capacity (T)		9	9	2 Years	
Number	8		0		
Number of ULBs covered			0		
<b>Legacy Waste Waste management</b>					
Number of dumpsites ( No.)	41				
Quantity of Waste dumped at dumpsites ( Tons)	<b>Not Available</b>				
Number of dumpsites cleared (No. )	9				1. Erumakkuzhi, Thiruvananthapuram 2. Punalur, Kollam 3. Kottarakkara, Kollam 4. Adoor, Pathanamthitta, 5. Erumeli, Kottayam 6. Vaikom, Kottayam 7. Vaikom, Kottayam, 8. Guruvayoor, Thrissur, 9. Thathamangalam, Palakkad
Number of dumpsites in which biomining has commenced ( No.)	7				
Time frame for clearing all dumpsites	2021				
<b>Other Information</b>					
Information regarding development of model towns/cities/villages	For the model city/town/villages, considerable progress has been achieved in providing door to door facility for dry wastes in both households (81.5%) and establishments (73%) in October 2019.				

Creation of Environmental cell	Environment Monitoring Cell is functioning in the office of the Chief Secretary  They are co-ordinating with concerned departments				
Standardization of rates for procurement of services/equipment (to do away with the tendering process) required for solid waste management	Kerala State Industrial Development Corporation is dealing with the tendering for installation of waste management system in the State and is monthly reviewed by the Chief Secretary				

<b>Improvements Since last Hearing</b>				
	<b>Item</b>	<b>Present Status</b>	<b>Status at the time of last hearing</b>	<b>Whether directed timelines have been adhered or not</b>
1	Door - to -Door Collection (%)	73	45	-
2	Source segregation of waste (%)	73	45	-
3	Waste Processing(TPD)	2844.5	663	-
4	Dumpsites capped (No.)	-	0	-
5	Dumpsites Bio-remediated (No.)	9	0	-

The colour coding for the cases is presented below:

### 3.10 Format I on solid waste management send on October 2019

The colour coding for the cases is presented below:

Colour	Status
Green	Complete
Yellow	In Progress
Red	Yet to be initiated
Blue	Not Applicable to State Context

Name of State/UT: <b>KERALA</b>		<b>1. SOLID WASTE MANAGEMENT</b>					
Name and designation of Nodal officer: Secretary, Corporation/Municipality/Panchayath							
Sl. No.	Item	SPCB/PCC Response	Remarks	Current Status	Desirable level as per Statutes	Gap between Current Status and desired level	Time frame for addressing the Gap
8	Percentage of Districts in which Special Task Force ( Four members nominated by DM, SP, RO SPCB & District Legal Services Authority) for Awareness has been created	100%		Complied			
12	Percentage of ULBs which have framed byelaws incorporating provisions of SWM Rules (15e)?	Not Available		Common bye law is under vetting by law Department  Some of the individual local bodies have framed byelaws.	Bye law to be framed		

30	Percentage of operators of Solid Waste processing facility who have submitted Annual report.	0%		Local bodies submitted the annual report			
31	Percentage of ULBs which have appointed nodal officer/committee.	100%		Secretary of Local bodies			
34	Percentage of ULBs which have submitted Annual Report in Form IV to Secy, UD and SPCB	100%		Complied			
36	<b>Percentage of ULBs in which Sweeping is carried out twice or more in public areas</b>	100% (once in public areas)					
38	Percentage of ULBs in which user fees has been incorporated in Byelaws			Common bye law is under vetting by law Department Some of the individual local bodies have framed byelaws.			
39	Percentage of ULBs having Door to door collection system	73%	ULB with D2D collection more than 25%-68/93  All LB intiated D2D Collection		100%		
40	<b>Percentage of ULBs transporting wastes in covered vehicles</b>	32.3%	Ernakulam, Palakkad	32.3%	100%	67.7%	

41	<b>Percentage of ULBs having GPS installed on garbage collection vans ( &gt; 5 lakh population)</b>	0%			100%	100%	
42	<b>Percentage of ULBs using Compartmentalized vehicles for collection of different fractions of waste</b>	8.6%		8.6%	100%	91.4%	2020
43	Percentage of ULBs having Computerized weighing machine for weighing solid waste	0%			100%	100%	2020
44	<b>Percentage of ULBs having tipping fee based on quantum of waste generated/ processed</b>	13%	As per the data from Urban Directorate	13%	100%	87%	
45	<b>Percentage of ULBs having twin-bin system installed at public places</b>	3.2%	As per the data from Urban Directorate	3.2%	100%	96.8%	2020
46	<b>Percentage of ULBs having transfer stations instead of secondary storage bins</b>	13%	As per the data from Urban Directorate	13%	100%	87%	
47	Percentage of ULBs in which PPE has been provided to workers	42%	As per the data from Urban Directorate	42%	100%	58%	
48	Percentage of ULBs in which Capacity building of local bodies has been taken up by State Dept of UD	100%					
49	Percentage of ULBs in which workers have been educated on Door to door collection of waste	100%					
50	Percentage of ULBs in which Training has been imparted to waste pickers/waste collectors	100%					



51	<b>Percentage of ULBs having separate Street sweepings collection and disposal system</b>	<b>9.67%</b>	<b>As per Form IV, SWM 2016</b>	<b>9.67%</b>	100%	90%	
52	Percentage of ULBs in which Segregation of waste at household level/source has been implemented	Dry : 86.02% Wet: 61.3%	As per the data from Urban Directorate				
53	<b>Percentage of ULBs in which waste Segregation by street vendors has been implemented.</b>	25%	As per the data from Urban Directorate	25%	100%	75%	
54	<b>Percentage of ULBs in which Segregation of waste by RWAs, market associations, gated communities, institutions (&gt; 5000 sqm area), hotels, restaurants etc has been implemented</b>	34%	As per the data from Urban Directorate	34%	100%	66%	
55	<b>Percentage of ULBs in which Segregation of Waste at source for inerts and C&amp;D Waste has been implemented</b>	10%		10%	100%	90%	
56	Percentage of ULBs in which informal sector of waste pickers, waste collectors and recycling industry in reducing waste in state policy has been engaged	85%	As per Data from Urban Directorate (79/93)				
57	<b>Percentage of ULBs in which Space for SW segregation, storage and processing of solid waste for 200 units / 5000 square feet has been allocated</b>	MCF=937 RRF=166	<ul style="list-style-type: none"> <li>• Corporation -6/6</li> <li>• Municipality -51/87</li> <li>Total =57/93 =61.29%</li> </ul>		100%		

58	<b>Percentage of ULBs in which Scheme for registration of waste pickers and dealers has been implemented</b>	14%	-	14%	100%	86%	
59	Percentage of ULBs in which land has been identified for setting up waste processing facilities (22 (1))	86%	All 14 districts except Pathanamthitta and Kasargod		100%	14%	
60	<b>Percentage of ULBs in which non-biodegradable waste and inert waste are used for filling up of construction areas and construction of roads</b>	<b>52%</b>	<b>From Clean Kerala Company</b>		100%	48%	
61	Percentage of ULBs in which Usage of RDF by Cement plants /Power plants/Industries located within 200 km of such facility has been implemented	-----	Action taken by Malabar Cements Limited, Government of Kerala undertaking for co-processing installation.	Draft proposal for making modification for co-incineration will be submitted by 31 <sup>st</sup> October 2019.	100%	100%	One year October, 2020
65	<b>Percentage of ULBs in which home /decentralized and centralized composting has been initiated</b>	<b>100%</b>	ULBs have decentralized facilities of waste management		100%		
66	<b>Percentage of ULBs in which Storage of Horticulture waste on generators own premises has been initiated</b>	<b>17%</b>			100%	83%	
67	<b>Percentage ULBs in which setting up of solid waste and processing facilities has been incorporated in Master Plan of the city</b>	<b>1%</b>			100%	99%	

68	Percentage of ULBs in which 5% or 5 sheds in SEZ, IE, Industrial park have been allocated for recovery and recycling facility		<ul style="list-style-type: none"> <li>•Kuttipuram, Malappuram for plastic recycling unit by Clean Kerala Company</li> <li>•Kannur for converting hair to manure</li> </ul>				
69	Percentage of ULBs in which material recovery facilities for sorting of recyclables by informal sector have been set up	61.29 %	<ul style="list-style-type: none"> <li>• Corporation -6/6</li> <li>• Municipality -51/87</li> </ul> <p>Total =57/93 =61.29%</p>	<p>Material collection facility is provided in all ULBs</p> <p>Resource recovery facility is provided in six corporations and 51 municipalities</p> <p>Godowns were also hired for storage.</p>	100%	0 for MCF	One year
70	Percentage of ULBs in which Waste from vegetable, flower, fish, meat, poultry market is processed in bimethanation plant	24%	AS per annual report, SWM				
71	Percentage of ULBs in which use of Chemical fertilizers in parks has been phased out	3.4%			100%	96.6%	
72	Percentage /Number of Waste processing based on Waste to Energy/RDF	Seven 77%	Land identified at ten places.	<ul style="list-style-type: none"> <li>• Brahmapuram, Ernakulam</li> </ul>	100%	23%	2020

				<p>and work will be started</p> <ul style="list-style-type: none"> <li>• Kozhikode, clearing of the ground started</li> <li>• Palakkad and Kannur – bidding</li> <li>• Kollam, Munnar-retendering</li> <li>• Sulthan bathery, Wayanad-installation of machinery to be done</li> </ul>			
73	Percentage of Waste processing units based on Composting/Biomethanation	28%			100%	72%	
77	<b>Percentage of ULBs in which Biodegradable waste is sent to compost/biomethanation plant</b>	79.50%	Brahmapuram, Attingal, North Paravur, Kumaly, Kattappana	79.50%	100%	20.5%	

78	Percentage of ULBs in which non-biodegradable wastes is sent to MRF/ Secondary storage facility	100%	<u>RRF</u> <ul style="list-style-type: none"> <li>• Corporation -6/6</li> <li>• Municipality -51/87</li> <li>• Total =57/93 =61.29%</li> </ul>	Material collection facility is provided in all ULBs  Resource recovery facility is provided in six corporations and 51 municipalities  Godowns were also hired for storage.	100%	0 for MCF		38.71 % for RRF
79	Percentage of W to E plants having Facilities for segregation of waste prior to processing of waste in W to E Plants	0%	Land for WtE plant is identified at 10 places.	<ul style="list-style-type: none"> <li>• Brahmapura m, Ernakulam and work will be started</li> <li>• Kozhikode, DPR submitted by the company.</li> <li>• Palakkad and Kannur – bidding</li> <li>• Kollam, Munnar- retendering</li> </ul>	100%	100%	Two years	
80	Percentage increase in number of Authorizations granted	80%	1 No in 2017-2018, 5 Nos in 2018-2019					
81	Percentage of ULBs displaying data related to functioning of plant and its adherence to prescribed parameters displayed on ULB's website	0%	-	-	100%	100%		

83	Percentage of ULBs in which land has been identified for landfill site (11 f)	1.07%	Attingal				
84	Percentage of ULBs in which land has been allocated for landfill site ( Rule 12a)		Not available				
85	Percentage of ULBs having own /regional operational Landfill sites	1.07%	Attingal				
86	Percentage of landfill sites in which Provision of Green Belt /Buffer Zone around landfill site has been made.	1					
87	Percentage of Landfill sites for which Buffer zone has been notified	0%			100%	100%	Two years
88	Percentage of landfill sites in which efforts have been taken to prevent/manage generation of leachate	2%	Attingal, Kochi		100%	98%	
89	Percentage of landfill sites in which efforts have been taken to prevent /manage generation of methane gas		Brahmapuram & Villapilsala sites are capped with gas escape capacity				
90	Percentage of landfill/dumpsites in which CCTV has been installed	1%			100%	99%	
91	Percentage of ULBs having Decentralized waste disposal facilities	100%			0	0	
92	Percentage of landfill sites in which landfilling or dumping of mixed waste is continued	2%			100%	98%	

93	Percentage of landfill sites in which only non-usable, non-recyclable, non-biodegradable, non-combustible and non-reactive waste is disposed	80%			100%	20%	
94	Percentage of ULBs in which Investigation of old /existing dumpsites for bio-mining has been initiated	100%		11%	100%	8	2020
102	Percentage of ULBs which have framed Byelaws incorporating User fees and spot fines for littering		Common Byelaw is under vetting by Law Department  User fee is collected				
104	Have efforts taken to increase public awareness ( Attach details)	Yes					
105	Percentage of ULBs having Citizen Grievance redressal mechanism	100%					
106	Percentage of ULBs uploading Month wise details of SWM targets on MIS	0%			100%	100%	
	For item no, 2, 5,10, 22, 30, 62, 63,64,98,99,104: Detailed Information to be uploaded						

### 3.11 Other initiatives

#### 3.11.1 Proposed Kerala Waste Management Authority

The Government of Kerala has amended the Panchayath Raj Act to take over the powers of local bodies in waste disposal and is working on the proposal to set up Kerala Waste Management Authority in the State especially for the setting up of modern solid waste treatment plants, rendering plant, slaughter house, sanitary landfills, and common biomedical waste treatment facilities. This Authority shall take care of the wastes that are not presently handled by the local bodies and the Kerala Water Authority (KWA). Real-time monitoring of water quality of water bodies shall be made available to the authority. The proposal is now under the Law Department for vetting.

#### 3.11.2 Project Green Grass in Forest Area

Following the NGT Order in OA No. 585/2018, 126 waste dumping sites in forest areas were mapped in the State (Project "Green Grass"). Rs. 51 lakh was the project outlay and waste from Thalekkod to Valara in NH 85 passing through Munnar was successfully removed by DFO with the help of Ex-service men Trust. Following this, Chief Wildlife Warden has initiated action for bringing all 11 WL Division, 17 WL Sanctuaries, 5 National Parks under the project.

**Tourism department** has implemented the following three projects

No.	Project	Amount in Rs.	Remarks
1.	Nilakurinji Waste Management	89,66,600	Waste disposal-35km road from Adimali to Munnar
2.	Save Road-Save Tourism	48,41,760	Waste removal twice
3.	Solid waste management in Idukki district	70,20,000	Waste removal twice in a week from eight destinations

#### 3.11.3 Removal of garbage on road sides

Public Works Department mapped the garbage dumped on the sides of all PWD roads and action taken for its clearing.

#### 3.11.4 Removal of waste has been declared as a priority activity of all departments;

by earmarking 5% of the departmental budget for waste reduction, collection and treatment. Power Department is mapping waste in hydal tourism sites and dams; Irrigation department is mapping wastes in dam sites; Devaswom Department is mapping waste disposal from pilgrim centers and Health department from hospitals.



**CHAPTER IV**  
**COMPLIANCE STATUS ON IMPLEMENTATION OF PLASTIC WASTE MANAGEMENT RULES, 2016**

**4.1 Gap Analysis and Action Points of Plastic Waste Management (As per Hon'ble NGT order dated 12/09/2019 in OA No. 606/2018)**

1. Quantity of plastic waste generated: 1,33,316 TPA
2. Coverage of ULBs/VPs: Material collection facility in all ULBs
3. Channelization through various routes including recycling, road making co –processing: Detailed in Sl. No. 5 in the table detailed below.
4. Thrust areas which require attention is EPR framework and Processing of Plastic waste through alternate routes available: Plastic bottles, mineral water bottles, plastic cover, plastic carry bags, plastic packaging in FMCG products, mattresses. Detailed in Sl. No. 3 in the table below.

**4.2 Information on plastic waste management**

Sl. No.	Item	Status
1	What is the quantity of plastic waste generated (Annual Report form VI pt.2,6) (TPD)	1,31,400 TPA (As per the annual report vide letter No. PCB/HO/PLA/AR/4/2019 dated 14-08-2020)
2	Percentage of ULBs which have set-up of plastic waste management system as per Rule 6(2)? (including collection, segregation, channelization & processing of plastic waste)	For Door to door collection of non biodegradable waste, Haritha Karma Sena has been formed in almost all LSGIs through the Kudumbasree mission. Haritha Karmasena is functioning in the entire 87 Municipalities and 6 Corporations.  Material Collection Facility-156; Resource Recovery Facility-59 Ward level mini material collection facilities-371 Material collection facility in all ULBs  Resource recovery facilities in 59 ULBs  Resource recovery facility in all ULBs as follows: Corporation-6/6 Municipality-51/87 Total =57/93 =61.3% ( as per the AR 2019-20 of Suchitwa Mission)
3	Percentage of Grama Panchayat which have set-up of plastic waste management system as per Rule 7?	Haritha Karma Sena for door to door collection of non biodegradable waste started functioning in 720 out of 941 Grama panchayaths  Material Collection Facility-744 Ward level mini material collection facilities-371

4	Has the system for plastic waste management with assistance of producers been set-up? Rule (6(3))?	<table border="1"> <thead> <tr> <th>Sl. No.</th> <th>Item</th> <th>Action done</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Plastic bottles</td> <td><b>Reverse Vending machine</b> functioning at Reliance outlet, Edappazhinji. Direction given to other supermarkets and malls to provide such reverse vending machine.</td> </tr> <tr> <td>2.</td> <td>Beverage bottles</td> <td>Direction to pay <b>Rs. 5/- per bottle and to take back through their own distribution channel</b> was issued to Kerala State Beverages Limited. Kerala State Civil Supplies Corporation and Kerala State Co-operative Consumers Federation Limited on 14-8-2019 and 24-9-2019 and reply is being scrutinized.  Meanwhile, EPR registration plan is under processing at the Government level.</td> </tr> <tr> <td>3.</td> <td>Plastic carry bag</td> <td>Ban of single use plastic items including plastic carrybags irrespective of thickness in the State w.e.f 01/01/2020 vide G.O.(Ms)No. 6/2019 Env dated 27/11/2019;G.O.(Ms) No. 2/2020 /ENVT dated 27-1-2020 and vide GO no G.O.(Ms) No.4/2020 Envnt dated 16/02/2020. Plastic carry bags and compostable carry bags are included in the ban.</td> </tr> <tr> <td>4.</td> <td>Milk cover</td> <td>Meetings were held with MILMA, KERA, Kerala Beverages Limited. MILMA and Kerala Beverages Limited engaged Clean Kerala Company Limited, Government company to prepare action plan.  Meanwhile, EPR registration plan is under processing at the Government level.</td> </tr> <tr> <td>5.</td> <td>Mineral water bottles</td> <td>Meetings held with the associations of Mineral water bottles and proposed to introduce Bottle return scheme by increasing Rs. 1 for packaged drinking water bottle as "Bottle return scheme". And also to get feedback from Vyapari Vyavasaya Ekopana Samithi.  Meanwhile, EPR registration plan is under processing at the Government level.</td> </tr> <tr> <td>5.</td> <td>FMCG products</td> <td>Direction issued on 11-10-2019 to brand owners who have obtained EPR authorization from Central Pollution Control Board to submit the address and name of the distributors in Kerala State and also informed the proposal of the board to register all brand owners who see within the State and collect registration fee at the rate of Rs. 10/kg of packaging introduced into market and the registration fee need to compensate local bodies on submission of their annual report under Solid waste Management rules, 2016. The payment of registration fee shall be taken as discharge of EPR of brand owners and inform their distributors details, as their action plan for taking back was not obtained in the State.</td> </tr> </tbody> </table>	Sl. No.	Item	Action done	1.	Plastic bottles	<b>Reverse Vending machine</b> functioning at Reliance outlet, Edappazhinji. Direction given to other supermarkets and malls to provide such reverse vending machine.	2.	Beverage bottles	Direction to pay <b>Rs. 5/- per bottle and to take back through their own distribution channel</b> was issued to Kerala State Beverages Limited. Kerala State Civil Supplies Corporation and Kerala State Co-operative Consumers Federation Limited on 14-8-2019 and 24-9-2019 and reply is being scrutinized.  Meanwhile, EPR registration plan is under processing at the Government level.	3.	Plastic carry bag	Ban of single use plastic items including plastic carrybags irrespective of thickness in the State w.e.f 01/01/2020 vide G.O.(Ms)No. 6/2019 Env dated 27/11/2019;G.O.(Ms) No. 2/2020 /ENVT dated 27-1-2020 and vide GO no G.O.(Ms) No.4/2020 Envnt dated 16/02/2020. Plastic carry bags and compostable carry bags are included in the ban.	4.	Milk cover	Meetings were held with MILMA, KERA, Kerala Beverages Limited. MILMA and Kerala Beverages Limited engaged Clean Kerala Company Limited, Government company to prepare action plan.  Meanwhile, EPR registration plan is under processing at the Government level.	5.	Mineral water bottles	Meetings held with the associations of Mineral water bottles and proposed to introduce Bottle return scheme by increasing Rs. 1 for packaged drinking water bottle as "Bottle return scheme". And also to get feedback from Vyapari Vyavasaya Ekopana Samithi.  Meanwhile, EPR registration plan is under processing at the Government level.	5.	FMCG products	Direction issued on 11-10-2019 to brand owners who have obtained EPR authorization from Central Pollution Control Board to submit the address and name of the distributors in Kerala State and also informed the proposal of the board to register all brand owners who see within the State and collect registration fee at the rate of Rs. 10/kg of packaging introduced into market and the registration fee need to compensate local bodies on submission of their annual report under Solid waste Management rules, 2016. The payment of registration fee shall be taken as discharge of EPR of brand owners and inform their distributors details, as their action plan for taking back was not obtained in the State.
		Sl. No.	Item	Action done																			
		1.	Plastic bottles	<b>Reverse Vending machine</b> functioning at Reliance outlet, Edappazhinji. Direction given to other supermarkets and malls to provide such reverse vending machine.																			
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				Meanwhile, EPR registration plan is under processing at the Government level.
		6.	Mattress	As per the meeting conducted with Indian Sleep Producer Federation (ISPF), it has been decided <ul style="list-style-type: none"> <li>• to have a collection point by dealers/retailers in each district irrespective of brand of mattresses</li> <li>• All manufacturers shall arrange for take back of old mattresses irrespective of brand, through retail outlets that sell their branded mattresses</li> <li>• Brand owners and manufacturers are urged to introduce buy back prices for old mattresses against sale of new mattresses</li> </ul>
		7.	Unused medicines in houses	Initiated by Chemists and Druggist Association and Drugs Controller (PROUD programme) in Thiruvananthapuram Corporation.  Around 200 bins were provided in front of medical shops in Thiruvananthapuram Corporation.  The first load of collected waste of 5T has been flagged off from Thiruvananthapuram to biomedical waste treatment facility on 1-10-2019. This was done with the funding of Chemists and Druggists Association.  Action is being taken to have this collection programme in other parts of the State.  Action is taken to get fund from manufacturers, producers and brand owners as per EPR.
		8.	End of life vehicle	As per the meeting 24-05-2019, it has been decided to take steps to control the unauthorized dismantling centers; to arrange meeting with KINFRA, SIDCO, KSIDC for setting up dismantling units and to have own authorized dismantling centers for KSRTC.
5	Status of Utilization of plastic waste (Annual Report form VI pt.4)			
a	In Recycling	Material Collection Facility-837; Resource Recovery Facility-151; Recyclable plastics (hard and soft plastics) are taken by rag pickers for recycling in the State and outside the State  Almost all the brand owners who obtained registration from the Central Pollution Control have not furnished reports to the State Pollution Control Board and hence it is not possible to quantify or verify the quantity of plastic waste if any taken back by them.		

		Clean Kerala Company-100T by Clean Kerala Company															
b	Road Construction	Clean Kerala Company collected 655.59 T of plastic(soft) in the year 2019-20. Tarring of 308.92 km of PWD roads and 764.8 km of LSGD roads was done during the year 2019-20.															
c	Waste to oil	Nil															
d	Co-processing of Plastic Waste in Cement kilns	In principal clearance was given for the proposal of Malabar Cements for the modifications to be given for co-incineration															
e	RDF	Nil															
f	Footpath /Tiles	Nil															
g	Others	Clean Kerala Company is in the process of establishing Integrated Waste Management System at Kuttippuram, Malappuram  Action is also initiated to provide sorter system in all 14 villages by the Clean Kerala Company. Equipments for shredding, dusting will be provided in thses places.															
6	Whether local bodies have framed bye-laws [Rule 6(4)]?	Common byelaw															
7	Whether plastic carry bags & plastic sheet of thickness < 50 micron banned or not [Rule 4(c)]?	Banned															
8	Has complete ban on plastic carry bags been imposed? (Annual Report format pt.3)	Ban of single use plastic items including plastic carrybags irrespective of thickness in the State w.e.f 01/01/2020 vide G.O.(Ms)No. 6/2019 Env dated 27/11/2019;G.O.(Ms) No. 8/209/ENVT dated 19/2/2019; G.O.(Ms) No. 2/2020 /ENVT dated 27-1-2020 and vide GO no G.O.(Ms) No.4/2020 Envnt dated 16/02/2020.The other items include sheets made of plastic for single use spread on tables in function venues; Spread of plates while serving food; Plates, cups and decorative materials made of syrofoam o thermocol; single use utensils like cups, plates, dishes, spoons, forks, straw, stirrer; non-wove bags, plastic flags, plastic packets for packing fruits and vegetables; PET drinking water bottles less than 500 ml and plastic drinking pouches. <b>Copy of all GOs is enclosed.</b>															
9	Status of action taken on noncompliance of PWM Rules (Annual Report format pt.9)	<p>Ban on single use plastic items exist in the State. As per G .O.(Ms)No. 6/2019 Env dated 27/11/2019, District Collector, Sub-Divisional Magistrate concerned Board officers, Secretaries of all local bodies ad officers as per Section 19 of the Environment Protection Act were directed for strict monitoring. The details of inspection conducted as on 4/11/2020 are given below:</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Unit</th> <th></th> </tr> </thead> <tbody> <tr> <td>Inpsections condcted</td> <td>Number</td> <td>465</td> </tr> <tr> <td>Violations observed</td> <td>Number</td> <td>153</td> </tr> <tr> <td>Fine imposed</td> <td>Rupees</td> <td>13,05,000</td> </tr> <tr> <td>Fine collected</td> <td>Rupees</td> <td>3,35,000</td> </tr> </tbody> </table>	Subject	Unit		Inpsections condcted	Number	465	Violations observed	Number	153	Fine imposed	Rupees	13,05,000	Fine collected	Rupees	3,35,000
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10	Status of marking & labelling on plastic carry bags & multi layered packaging. (Rule 11)	<ul style="list-style-type: none"> <li>• Kerala State Pollution Control Board issued registration to 1,185 plastic units.</li> <li>• The Board inspected the plastic carry bag units and verified the thickness of carry bags. The Board also verified whether the conditions of registration were complied with.</li> </ul>
11	No. of registered plastic manufacturing units / recycling units / Producers / brand owners / importers as per Rules 9 & 13 of PWM Rules?	<ul style="list-style-type: none"> <li>• Total - 1481</li> <li>• Registered plastic manufacturing units - 1266</li> <li>• Registered plastic producers - 82</li> <li>• Registered plastic recycling units - 99</li> </ul>
12	No. of unregistered plastic manufacturing or recycling units (Annual Report format pt.7)	Action has been taken to bring all units under the purview of registration.
13	Whether State Level Advisory Committee is constituted or not? [Rule 16] If yes, details of number of meetings conducted in a year and implementation of suggestions of committee in the last two years.	Yes 37 meetings were conducted by SLAC and review
14	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 [Rule 9-3]	PVC flex has been banned in the State. Action has been initiated for its implementation.

**CHAPTER V**  
**STATUS ON MANAGEMENT OF SEWAGE, SULLAGE AND EFFLUENT (OA 593/2017)**  
**&**  
**TOTAL AMOUNT COLLECTED FROM ERRING INDUSTRIES AND UTILISATION OF FUND**  
**(OA. 639/2018)**

**5.1 Sewage and sullage**

As per Draft Dossier about 97% of the rural households and 99% of the urban households in Kerala have access to improved toilet facility. Kerala is open defecation free State. As per the projected population as on 2020, 1192 MLD of sewage in the State, of which 317 MLD from urban area and 817MLD from Panchayath area. Regarding sullage, a total quantity of 2783 MLD is generated, of which 741 MLD from urban area and 2042 MLD fom pachayath area. The total quantity of sewage and sullage generated in the State is 3975MLD (Table5.1).

In Kerala, total sewage treatment capacity in the state through existing common STPs: 124.145 MLD (Table 5.2) . Total sewage treatment capacity in the state through existing common FSTPs is 0.21 MLD. The quantity of sewage and sullage generated in the consented establishments like hospitals, flats, commercial establishments, hotels in the large and medium categories has been estimated and 69MLD is generated from 1000 units (Table 5.3).

For assessing the status of sanitation survey conducted in 66.7 lakh residences by Haritha Kerala Mission, (Annual Report of Haritha Kerala Mission, 2017 in [www.haritham.kerala.gov.in](http://www.haritham.kerala.gov.in)), 99.2% of the sewage generated in residence is disposed by septic tanl/soak pit/leach pit/ tankers and 0.8% is discharged into drains and gutters and this amounts to be 7 MLD. However proposal for augmentation and installation of sewage treatment facility for Urban area for 124MLD (CSTP+FSTP) is being implemented. Of which 30% work over by which sewage treatment achieved for 35 MLD; 6.5% under construction for 8 MLD; 25% work awarded for 30.7MLD ;12.5% Tendering/DPR preparation/Technical sanction to be obtained for 15.2 MLD 27% to be tendered for 33.5 MLD. The status on implementation of work is given in Table 5.4.

**Table 5.1 Estimation of sewage and sullage generated based on population**

<b>Urban Local bodies (6 Corporations and 87 Municipalities)</b>	
Population(as per 2011 Census)	79,36,885
Population(Projected for 2020)	82,94,583
Water Consumption(MLD)*	1323
<b>Generation of sewage and sullage (MLD)**</b>	<b>1058</b>
Generation of sewage (MLD)***	317
Geneation of sullage (MLD)	741
<b>Panchayaths (941 panchyaths)</b>	

Population(as per 2011 Census)	25,840,501
Population(Projected for 2020)	27,005,078
Water Consumption (MLD)*	3646
<b>Generation of sewage and sullage (MLD)**</b>	<b>2917</b>
Generation of sewage (MLD)***	875
Generation of sullage (MLD)	2042
<b>Total –Urban local bodies and Panchayaths</b>	
Population(as per 2011 Census)	3,37,77,386
Population(Projected for 2020)	3,52,99,661
Water consumption (MLD)*	4968
<b>Generation of sewage and sullage (MLD)**</b>	<b>3975</b>
Generation of sewage (MLD)***	1192
Generation of sullage (MLD)	2782

**Table 5.2 Common STPs/FSTP in the State**

No	District	CSTP	Installed capacity MLD	Utilization MLD	Process	Remarks
1.	Thiruvananthapuram	Muttathara by KWA	107	80	ASP	
2.	Thiruvananthapuram	Kumarichanda	0.01	0.01	MBBR	
3.	Pathanamthitta	Pamba by Travancore Devaswom Board	3.5	3.5	Coagulation and settling	Seasonal
4.	Pathanamthitta	Sannidhanam by Travancore Devaswom Board	5	3.5	UASB and SBR	Seasonal
5.	Kottayam	Kumarakom for house boats and by District Tourism Promotion Council	0.09	0.09	ASP	
6.	Idukki	Adimali panchayath	0.01	0.01	Electrocoagulation	Started functioning
7.	Ernakulam	Elamkulam by KWA	4.5	3	ASP	
8.	Ernakulam	Greater Kochi Development Authority, Kalamassery	0.45	0.45	ASP	
9.	Ernakulam	FSTP-Brahmapuram plant	0.1	0.1	Anaerobic digestion and MBBR	
10.	Ernakulam	FSTP-Willingdon island	0.1	0.1	Anaerobic digestion and MBBR	

No	District	CSTP	Installed capacity MLD	Utilization MLD	Process	Remarks
11.	Thrissur	Guruvayoor, TSR	3	Not started functionin	ASP	Not started functioning
12.	Thrissur	FSTP- Mattampuram	0.01	Complete d not started functionin	Biological	Not started functioning
13.	Malappuram	Malappuram Municipal Bus stand	0.03	0.03	Biological	
14.	Malappuram	Malappuram Fish Market at Tirur	0.045	0.045	Biological	
15.	Kannur	Thaliparambu	0.5	0.5	ASP	

**Table 5.3 Effluent generation from consented units under large and medium scale**

Mode of disposal of effluent	Total quantity of discharge (Effluent and sewage and sullage generating units-in 1298 MLD)	Quantity of discharge from Effluent generating units-298 units in MLD	Quantity of discharge from Sewage and sullage generating units-1000 units
Ground water	73.95	26.6	53
Rivers	62.5	61.6	1.05
Sea	9.8	9.4	-
Reuse	19.2	5.6	12.3
Total quantity	156.3	94.3	69



**Table 5.4 Details of total existing treatment capacity MLD, Capacity utilization, STP proposed**

District	Corporation/Municipality (Generation of sewage and sullage in MLD) Total=sewage+sullage [Projected population for 2020]*	Existing common treatment plant and individual STPs	Proposed FSTPs/STPs
Thiruvananthapuram	<p><b>Thiruvananthapuram Corporation</b> [Projected population*: 10,01,175 ]</p> <p>(Coastal city and city on the bank of polluted stretch of Karamana river under Priority I )</p> <p>Sewage and sullage <b>144.2 MLD (43.25+101)</b></p>	<p><b>Common STP</b></p> <ul style="list-style-type: none"> <li>• <b>Common treatment plant of 107MLD</b> at Muttathara (Capacity utilization-80MLD) and complying to standards and complying to standards</li> <li>• Facility for treating septage in Muttathara plant</li> </ul> <p><b>Individual STP for the large and medium scale units in the entire Thiruvananthapuram district</b></p> <ul style="list-style-type: none"> <li>• There are 124 units generating 7.1MLD of sewage and sullage under large and medium scale and are having STP. 91 units in Thiruvananthapuram city; Nedumangad M-1; Neyyattinkara M-1; Varkala M. 2 &amp; 29 Panchayaths)</li> <li>• 10KLD STP at Kumarichandamarket</li> </ul>	<p><b>Under construction</b></p> <ul style="list-style-type: none"> <li>• Construction of 45% of 5 MLD plant at Medical College (Biological-Amruth project) has been completed</li> <li>• Renovation/expansion of sewerage system</li> </ul> <p><b>Planning</b> Additional STP requirement by Kerala Water Authority for 60 Crores- Preliminary engineering report for engaging consultant prepared and submitted to Govt. for approval</p>
	<p><b>Varkala(Coastal town)</b> [Projected population: 41,853] <b>4.5 MLD(1.4+3.2)</b></p>	<p><b>Individual STP provided for hotels, hospitals</b></p> <p><b>For households, septic tank soakpit leach pit</b></p>	<p><b>DPR preparation</b></p> <ul style="list-style-type: none"> <li>• 140KLD KIIFB</li> </ul>
	<p><b>Attingal -4.3MLD (1.3+3)</b> [Projected population: 39,345]</p>	Do	
	<p><b>Nedumangad -6.8MLD (2+6.8)</b> [Projected population: 62,872]</p>	Do	

District	Corporation/Municipality (Generation of sewage and sullage in MLD) Total=sewage+sullage [Projected population for 2020]*	Existing common treatment plant and individual STPs	Proposed FSTPs/STPs
	<b>Neyyattinkara 8 MLD</b> (2.4+5.6) [Projected population: 74,043]	Do	
<b>Kollam</b>	<b>Kollam Corporation(Coastal city)</b> 59.7MLD(18+41.8) [Projected population: 4,14,892]	<p><b><u>Individual STP for the large and medium scale units in the entire Kollam district</u></b></p> <ul style="list-style-type: none"> <li>There are 43 units generating 2.9 MLD of sewage and sullage under large and medium and are having STP. Kollam city-22(1.7MLD) ; Paravur M.-1; Karaunagappally M.-3; Punalur M.-1; Kottarakkara M,-3&amp; Panchayaths-13</li> </ul> <p><b>For households, septic tank, soakpit, leach pit rovided</b></p>	<p><b><u>Work awarded</u></b></p> <ul style="list-style-type: none"> <li>STP-12MLD-Amruth-biological</li> </ul> <p><b><u>Tendered work not awarded</u></b></p> <ul style="list-style-type: none"> <li>FSTP-100KLD-Andamukom, Amruth-EC</li> </ul>
	Paravur 5MLD-(1.5+3.5) [Projected population: 45,710 ]	<b>For households, septic tank, soakpit, leach pit provided</b>	
	Karunagapally 5.2MLD (1.6+3.6) [Projected population: 47,379]	Do	
	<b>Punalur5.3MLD-(1.6+3.7)</b> [Projected population: 48,807]	Do	
	Kottarakkara3.5MLD(1.1+2.5) [Projected population: 32,397 ]	Do	
	Mayyanad gramapanchayath	Do	<p><b><u>DPR preparation</u></b></p> <ul style="list-style-type: none"> <li>Co-treatment-590KLD-biological-KIIFB</li> </ul>

District	Corporation/Municipality (Generation of sewage and sullage in MLD) Total=sewage+sullage [Projected population for 2020]*	Existing common treatment plant and individual STPs	Proposed FSTPs/STPs
Alappuzha	<b>Alappuzha (Coastal city)</b> 26.3 MLD (7.9+18.4) [Projected population: 1,82,013]	<b>For households, septic tank, soakpit, leach pit provided</b>  <b>Individual STP for the large and medium scale units in the entire Alappuzha district</b>  <ul style="list-style-type: none"> <li>There are 11 units generating 0.51MLD of sewage and sullage under large and medium and are having STP; Kayamkulam M.-1; Mavelikkara-1; Chengannur-1; Harippad-1; Panchaayths -7</li> </ul>	<u>TS to be obtained</u> <ul style="list-style-type: none"> <li><u>General Hospital-STP-240KLD-EC-Amruth</u></li> <li><u>Shatabdi mandiram-STP-15KLD- Biological-Amruth</u></li> <li><u>Thottumadi colony-STP-50KLD-Biological-Amruth</u></li> <li><u>Mobile STP-2Nos-10KLD-Amruth-EC</u></li> </ul>
	<b>Cherthala(Coastal city)</b> <b>5.2 MLD(1.6+3.6)</b> [Projected population: 47,892]	21 STPs* with a total installed capacity of 0.83 MLD	<u>DPR modification</u> <ul style="list-style-type: none"> <li><u>Cherthala-FSTP-250KLD-Anaerobic baffle reactor, MBBR-KIIFB</u></li> </ul>
	<b>Kayamkulam(Coastal city)</b> 7.8 MLD (2.3+5.4) [Projected population: 71,727]	<b>For households, septic tank, soakpit, leach pit provided</b>	
	Mavelikkara -3.3 MLD(1+2.3) [Projected population: 29,722 ]	10 STPs* with a total installed capacity of 0.19 MLD	<u>Planning</u> <ul style="list-style-type: none"> <li><u>Mavelikkara Taluk hospital-STP-300KLD</u></li> </ul>
	<b>Chengannur (Town near to the polluted stretchKallooppara-Thondra in Manimala river-Priority IV)</b> 2.7 MLD(0.8+1.9) [Projected population: 24,513]	13 STPs*with a total installed capacity of 0.53 MLD	<u>Planning</u> <ul style="list-style-type: none"> <li>To set up FSTP</li> </ul>
	Haripad - 3.5 MLD(1.1+2.5) [Projected population: 32,373]	<b>For households, septic tank, soakpit, leach pit, provided</b>	

District	Corporation/Municipality (Generation of sewage and sullage in MLD) Total=sewage+sullage [Projected population for 2020]*	Existing common treatment plant and individual STPs	Proposed FSTPs/STPs
<b>Pathanamthitta</b>	Adoor, 3.6 MLD (1.1+2.5) [Projected population: 32,456 ]	Do	
	Pandalam, 5.6 MLD (1.7+3.9) [Projected population: 51,312]	<b>Individual STP provided for hotels, hospitals</b>  <b>For households, septic tank, soakpit, leach pit</b>	
	Pathanamthitta-4.3 MLD(1.3+3)  [Projected population: 39,715]	<b>Individual STP provided for hotels, hospitals</b>  <b>For households, septic tank, soakpit, leach pit</b>  <b><u>Individual STP for the large and medium scale units in the entire Pathanamthitta district</u></b> • There are 52 units generating 8.2 MLD of sewage and sullage under large and medium scale units and are having STP. Pathanamthitta M.-4; Thiruvalla-23; Pandalam-2; Panchayaths-23	
	Tiruvalla, (Town near to the polluted stretch Mannar to Thakazhy-Priority IV) 6 MLD (1.8+4.2)  [Projected population: 55,266]	<b><u>Individual STP for the large and medium scale units in the entire Pathanamthitta district</u></b> • There are 52 units generating 8.2 MLD of sewage and sullage under large and medium scale and are having STP. Pathanamthitta M.-4; Thiruvalla-23; Pandalam-2; Panchayaths-23	<u>Planning</u> • To set up FSTP

District	Corporation/Municipality (Generation of sewage and sullage in MLD) Total=sewage+sullage [Projected population for 2020]*	Existing common treatment plant and individual STPs	Proposed FSTPs/STPs
	Pamba township (Sabarimala season from November 15 <sup>th</sup> to January 20 <sup>th</sup> every year)	<b>Common STP of 3.5 MLD</b> capacity maintained by Travancore Devaswom Board. It consists of coagulation and settling. The plant is seasonally operated during festival season.	
	Sannidhanam township (Sabarimala season from November 15 <sup>th</sup> to January 20 <sup>th</sup> every year)	<b>Common STP of 5 MLD capacity at Sannidhanam.</b> 3.5MLD is only utilized. It consists of UASB and SBR.	
Kottayam	Changanacherry-19.3 MLD(5.8+13.5)  [Projected population: 1,33,738 ]	<b>Individual STP provided for hotels, hospitals</b>  <b>For households, septic tank, soakpit, leach pit</b>	
	Ettumanoor-3MLD (0.9+2.1) [Projected population: 27,614]	Do	
	Erattupetta-3.4 MLD(1+2.4) [Projected population: 31,012]	Do	
	Kottayam-20.6 MLD(6.2+14.4) [Projected population: 1,42,978]	<b>Individual STP for the large and medium &amp; red and orange category units in the entire Kottayam district</b> • There are 92 units generating 5.3 MLD of sewage and sullage under large and medium & red and orange category and are having STP. Changanassery-3; Kottayam M.-44; Pala M-1; Ettumanoor M.-6; Panchavaths-38	
	Pala-2.5 MLD(0.8+1.8) [Projected population: 23,050]	Do	
	Vaikom-2.7MLD (0.8+1.9) [Projected population: 24,281]	Do	

District	Corporation/Municipality (Generation of sewage and sullage in MLD) Total=sewage+sullage [Projected population for 2020]*	Existing common treatment plant and individual STPs	Proposed FSTPs/STPs
	Others	<p><b>Common STP</b></p> <ul style="list-style-type: none"> <li>• <b>Common STP for houseboat (0.09MLD) at Kumarakom</b> maintained by Travancore Devaswom Board</li> <li>• Erumeli (100KLD) stopped working since the festival season ended</li> <li>• Erumeli(75KLD) stopped working since the festival season ended</li> </ul>	
Idukki	Thodupuzha- 5.9 MLD (1.8+4.1) [Projected population: 54,391]	<p><b>Individual STP provided for hotels, hospitals</b></p> <p>households, septic tank, soakpit, leach pit</p> <p><b>Individual STP for the large and medium units in the entire Idukki district</b></p> <p>ere are 16 units generating 0.82 MLD of sewage and sullage under large and medium and are having STP. Thodupuzha M.-5; Panchayaths-11</p>	
	Kattappana- 4.9MLD (1.5+3.4) [Projected population: 44,568]	Do	
	Munnar Panchayath	Do	

District	Corporation/Municipality (Generation of sewage and sullage in MLD) Total=sewage+sullage [Projected population for 2020]*	Existing common treatment plant and individual STPs	Proposed FSTPs/STPs
Ernakulam	<p>Kochi Corporation [Projected population: 7,07,511] Coastal city 101.9 MLD (30.6+71.3)</p>	<p><b>Common STP</b></p> <ul style="list-style-type: none"> <li>• Elamkulam-4.5 MLD capacity-Utilization capacity-3.5 MLD maintained by KWA-It consists of ASP</li> <li>• Marine Drive-450KLD STP-Maintained by Greater Cochin Development Authority, Kadavanthra (ASP)</li> <li>• <b>FSTP-Brahmapuram-0.1 MLD</b> using anaerobic digestion and MBBR</li> <li>• <b>FSTP-Willingdon Island-0.1MLD</b> using anaerobic digestion and MBBR</li> </ul> <p><b><u>Individual STP for the large and medium scale units in the entire Ernakulam district</u></b> There are 332 units generating 15.3 MLD of sewage and sullage under large and medium scale and are having STP</p>	<p><u>Work awarded and not started</u></p> <ul style="list-style-type: none"> <li>• Division 1-4-6.5MLD-Kochi Smart City</li> <li>• Elamkulam-5MLD-Biological-Amruth-KWA</li> </ul> <p><u>SHPS approval</u></p> <ul style="list-style-type: none"> <li>• <u>Division 15-STP-1.4MLD-Amruth-biological</u></li> <li>• <u>Division 16-STP-1.1MLD-Amruth – Biological</u></li> <li>• <u>Division 17-STP-1.4 MLD-Amruth</u></li> </ul> <p><u>To be tendered</u></p> <ul style="list-style-type: none"> <li>• <u>Edappally-2MLD-Integrated Water Transport System-KMR-SBR</u></li> <li>• <u>Elamkulam-10MLD-Integrated Water Transport System-KMR-SBR</u></li> <li>• <u>Perandur-4MLD-Integrated Water Transport System-KMR-SBR</u></li> <li>• <u>Puthukalavattom-5MLD-Integrated Water Transport System-KMR-SBR</u></li> <li>• <u>Vennala-10MLD-Integrated Water Transport System</u></li> </ul>
	<p>Aluva (Town on the bank of polluted stretch of Periyar on the bank of polluted stretch Aluva-Eloor to Kalamassery) 2.8 MLD (0.8+2) [Projected population: 25,197]</p>	<p><b>Individual STP provided for hotels, hospitals</b></p> <p><b>For households, septic tank, soakpit, leach pit</b></p>	<p><u>Tendering</u></p> <ul style="list-style-type: none"> <li>• <u>STP near AdvaitaAshramam</u></li> </ul> <p><u>Project preparation</u></p> <ul style="list-style-type: none"> <li>• <u>STP for Aluva market</u></li> </ul>
	<p>Angamaly, 3.8 MLD (1.2+2.6) [Projected population: 34,973]</p>	<p>Do</p>	

District	Corporation/Municipality (Generation of sewage and sullage in MLD) Total=sewage+sullage [Projected population for 2020]*	Existing common treatment plant and individual STPs	Proposed FSTPs/STPs
	Eloor-Town on the bank of polluted stretch of Periyar on the bank of polluted stretch Aluva-Eloor to Kalamassery- 3.4 MLD (1.1+2.4) [Projected population: 34,973]	Do	
	Kalamassery-(Town on the bank of polluted stretch of Kadambayar-Manckakadavu to Brahmapura –Priority IV and on the bank of polluted stretch of Periyar -Aluva-Eloor to Kalamassery) 8 MLD (2.4+5.6) [Projected population: 73,966]	<ul style="list-style-type: none"> <li>• 10KLD STP of Municipality</li> <li>• 10 KLD STP at Kalamassery market</li> </ul>	
	Koothattukulam, 2.2 MLD(0.7+1.5) [Projected population: 19,825]	<b>Individual STP provided for hotels, hospitals</b>  <b>For households, septic tank, soakpit, leach pit</b>	
	Kothamangalam, 17.3MLD (5.2+12.1) [Projected population: 1,19,738 ]	Do	
	Maradu, 5.1 MLD (1.5+3.6) [Projected population: 46,719 ]	Do	
	Muvattupuzha, 7MLD (2.1+4.9) [Projected population: 64,554]	Do	
	Perumbavoor, 3.2 MLD (1+2.2) [Projected population: 29,377]	Do	
Ernakulam	Piravom, 3.1 MLD (1+2.2) [Projected population: 28,456]	Individual STP provided for hotels, hospitals  For households, septic tank, soakpit, leach pit	
	Thripunithura(Town on the bank of polluted stretch of Chithrapuzha - Irumpanam to Karingachira –Priority V) 10.5MLD (3.2+7.3) [Projected population: 96,692]	Do	<u>Planning STP-locating land</u>



District	Corporation/Municipality (Generation of sewage and sullage in MLD) Total=sewage+sullage [Projected population for 2020]*	Existing common treatment plant and individual STPs	Proposed FSTPs/STPs
Ernakulam	Thrikkakara-(Town on the bank of polluted stretch of Kadambrayar-Manckakadavu to Brahmapura –Priority IV) 8.8 MLD(2.7+6.1) [Projected population: 80,804]	Do	<u>Planning STP-locating land</u>
Thrissur	Thrissur (Coastal city Near the polluted stretch of river Puzhakkal) 47.8 MLD (14.3+33.5) [Projected population: 3,31,836]	<b><u>Individual STP for the large and medium scale units in the entire Thrissur district</u></b> There are 122 units generating 4.6 MLD of sewage and sullage under large and medium and are having STP. Thrissur Corporation-81; Guruvayoor-15; Chalakkudy-3; Irinjalakkuda-3; Chavakkad-1; Kodungallur-1; Panchayaths-14	<u>To be tendered</u> • Vanchikulam-2.5MLD-STP <u>Work awarded and not started</u> • Ramavarmapuram-100KLD-FSTP-Amruth-EC • General Hospital-360KLD-Amruth-EC
	Chavakkad-4.3 MLD(1.3+3) [Projected population: 39,857]	Do	
	Chalakkudy-17.3MLD (5.2+12.1)	Do	
	Guruvayoor-2.3 MLD(0.7+1.7) [Projected population: 21,434]	<b><u>Common STP of 3 MLD</u></b> at Guruvayoor in Thrissur district	<u>Work awarded and not started</u> • Chakkumkandom-100KLD-Amruth-EC
	Irinjalakuda (Polluted stretch of Karuvannur – along Karuvannur) 5.8 MLD (1.7+4.1) [Projected population: 53,910]	Do	<u>Planning</u> • FSTP is proposed • STP is proposed
	Kodungallur-10.7MLD (3.2+7.5) [Projected population: 99159 ]	Do	
	Kunnamkulam-6.1MLD (1.9+4.3) [Projected population: 56,508]	Do	<b><u>TS to be obtained</u></b> • Co-treatment-1 MLD-KIIFB-Biological-DPR approved-TS to be obtained
	Wadakkancheri Polluted stretch of Kecheririer-Puliyannor to Kechery-Priority IV) 1.8MLD (0.54+1.3) [Projected population: 16,380]	Do	<b><u>DPR under preparation</u></b> • Co-treatment-1 MLD-KIIFB-Biological • Ottuppara market-18KLD-KIIFB-biological • Athani market-13.9KLD-KIIFB-biological

District	Corporation/Municipality (Generation of sewage and sullage in MLD) Total=sewage+sullage [Projected population for 2020]*	Existing common treatment plant and individual STPs	Proposed FSTPs/STPs
	Mattampuram	<b>FSTP of 0.1MLD at Mattampuram-</b> Biological-Not started functioning	-
Palakkad	Chittur-3.7 MLD (1.1+2.6) [Projected population: 33,754 ]	1 MLD (high-rise building alone with captive STP) for full district	
	Mannarkkad-4.0 MLD (1.2+2.8) [Projected population: 36,409]	Individual STP provided for hotels, hospitals  For households, septic tank, soakpit, leach pit	
	Ottappalam 6.1 MLD (1.9+4.3) [Projected population: 56,214]	Do	<b>TS to be obtained</b> Co-treatment -1.5 MLD-KIIFB-Biological- -DPR approved-TS to be obtained
	Palakkad-19.7 MLD (5.9+13.8) [Projected population: 1,36,857]	<b>Individual STP for the large and medium scale units in the entire Palakkad district</b> There are 40 units generating 2.2 MLD of sewage and sullage under large and medium scale and are having STP. Palakkad M.-10; Ottappalam M.-4; Pattambi M.-1; Cherpulassery M.-1; Panchaayths-24	<b>Work awarded but not started</b> <ul style="list-style-type: none"><li>• Yakkara-FSTP-100KLD-Amruth-EC</li><li>• District Hospital-270KLD-Amruth-EC</li></ul> <u>Approval of SHPSC</u> <ul style="list-style-type: none"><li>• Sundaram Colony-800KLD-Amruth-Biological</li></ul>
	<b>Pattambi -Polluted stretch of Bharathpuzha- Priority IV)- 3.3 MLD(1+2.3)</b> [Projected population: 29,922]	Do	<b>Project planning</b>
	<b>Shornur- Polluted stretch of Bharathpuzha-Priority IV)-- 5.0 MLD(1.5+3.5)</b> [Projected population: 45,495 ]	Do	
	Cherpulassery-3.5(1.1+2.5) [Projected population: 32,115]	Do	

District	Corporation/Municipality (Generation of sewage and sullage in MLD) Total=sewage+sullage [Projected population for 2020]*	Existing common treatment plant and individual STPs	Proposed FSTPs/STPs
<b>Malappuram</b>	<p><b>Malappuram (Town near the polluted stretch of Kadalundi river (Along Hajirappally) Hajiyarpalli) Priority V</b> 15.30 MLD (4.6+10.7) [Projected population: 1,05,955]</p>	<ul style="list-style-type: none"> <li>• <b>1.8 MLD (of high rise buildings and STPs of Tirur and Malappuram municipalities)</b></li> <li>• <b>STP at Malappuram Municipal bus stand-30KLD-MBBR</b></li> <li>• <b>STP at Tirur Fish market of 45 KLD-Biological</b></li> </ul> <p><b><u>Individual STP for the large and medium scale units in the entire Malappuram district</u></b> There are 40 units generating 3.6 MLD of sewage and sullage under large and medium scale and are having STP. Malappuram M.-2; Manjeri M.-4; Tirur M.-5; Perinthalmanna M.-5; Kottakkal M.-5; Nilambur M.-1; Kondotty M.-3; Parappanangadi M.-1; Panchavaths-</p>	
	<p><b>Manjeri-14.60 MLD(4.4+10.3)</b> [Projected population: 1,01,480]</p>	<p>Individual STP provided for hotels, hospitals  For households, septic tank, soakpit, leach pit</p>	
	<p><b>Ponnani-10.2 MLD(3.1+7.2)</b> [Projected population: 94,569]</p>	<p><b>Do</b></p>	
	<p><b>Tirur (Coastal town &amp; Town in the polluted stretch of Tirur river)- 6.4 MLD (1.9+4.4)</b> [Projected population: 58,584]</p>	<p><b>Tirur market-45KLD-STP</b></p>	<p><b><u>Under construction</u></b></p> <ul style="list-style-type: none"> <li>• <b><u>Private bus stand-STP-50KLD-Trial run fixed on 20-10-20</u></b></li> </ul>

District	Corporation/Municipality (Generation of sewage and sullage in MLD) Total=sewage+sullage [Projected population for 2020]*	Existing common treatment plant and individual STPs	Proposed FSTPs/STPs
	Kottakkal-5.0 MLD (1.5+3.5) [Projected population: 46,382]	Individual STP provided for hotels, hospitals  For households, septic tank, soakpit, leach pit	
	Kondotty-3.3 MLD (1+2.3) [Projected population: 30,092 ]	<b>Do</b>	
	Nilambur-5.3 MLD (1.6+3.7) [Projected population: 48,456 ]	<b>Do</b>	
	Parappanangadi-8.1 MLD (2.4+8.1) [Projected population: 74,450]	<b>Do</b>	
	Perinthalmanna-5.1 MLD(1.5+3.5) [Projected population: 46,624]	<b>Do</b>	
	Tanur-6.4 MLD(6.4+1.9) [Projected population: 58,584]	<b>Do</b>	
	Tirurangadi-6.4 MLD(1.9+4.5) [Projected population: 59,184]	<b>Do</b>	
	Valancherry-4.1MLD (1.3+2.8) [Projected population: 37,408 ]	<b>Do</b>	
<b>Kozhikode</b>	<p><u>Kozhikode Coastal pollution and polluted stretch of the Kallayi river- Thekepuram to Arakkinar -114.6 MLD (91.7+27.5)</u> [Projected population: 6,36,446 ]</p>	<p><b><u>Individual STP for the large and medium scale units in the entire Kozhikode district</u></b> There are 157 units generating 11.6 MLD of sewage and sullage under large and medium and are having STP. Kozhikode city-114; Vatakara-7; Ramanattukara M.-2; Payyoli M.-1; Mukkom M.-1; Panchayaths-28</p>	<p><b><u>Work started</u></b></p> <ul style="list-style-type: none"> <li>MC College-STP-2 MLD with septage treatment and 1 MLD plant</li> </ul> <p><b><u>Tendered and not awarded</u></b></p> <ul style="list-style-type: none"> <li>Kothi-Zone A-Package B- Amruth-biological-6MLD</li> </ul> <p><b><u>Under tendering</u></b></p> <ul style="list-style-type: none"> <li>Avikkalthodu-Zone A- Amruth-Biological-7MLD</li> </ul>
	Feroke-3.4 MLD (1+2.4) [Projected population: 30,834]	Individual STP provided for hotels, hospitals  For households, septic tank, soakpit, leach pit	

District	Corporation/Municipality (Generation of sewage and sullage in MLD) Total=sewage+sullage [Projected population for 2020]*	Existing common treatment plant and individual STPs	Proposed FSTPs/STPs
	Koduvally-5.5 MLD (1.7+3.9) [Projected population: 50,872]	Individual STP provided for hotels, hospitals  For households, septic tank, soakpit, leach pit	
	<b>Koyilandy-8.1 MLD (2.5+5.7)</b> [Projected population: 75,112]	<b>Do</b>	
	Payyoli-2.4 MLD(0.7+1.7) [Projected population: 21,785]	<b>Do</b>	
	Ramanattukara-3.5MLD(1.1+2.4) [Projected population: 31,808]	<b>Do</b>	
	<b>Vatakara-8.5 MLD(2.6+6)</b> [Projected population: 78,688]	<b>Do</b>	<b><u>TS to be obtained</u></b> <ul style="list-style-type: none"> <li>• Vatakara- STP-0.5 MLD-KIIFB-Biological &amp; 20KLD septage treatment</li> </ul>
<b>Wayanad</b>	Kalpetta-10.3 MLD (3.1+7.2) [Projected population: 94,569]	Individual STP provided for hotels, hospitals  For households, septic tank, soakpit, leach pit  <b><u>Individual STP for the large and medium scale units in the entire Wayanad district</u></b> There are 35 units generating 2.4 MLD of sewage and sullage under large and medium scale and are having STP. Kalpetta M.-7; Mananthavadi M.-1; SulthanBathery M.-8	
	Mananthavadi-5.2MLD (1.6+3.6) [Projected population: 47,527]	<b>Do</b>	
	Sulthanbathery-3.1MLD (1.0+2.2) [Projected population: 28,711]	<b>Do</b>	

District	Corporation/Municipality (Generation of sewage and sullage in MLD) Total=sewage+sullage [Projected population for 2020]*	Existing common treatment plant and individual STPs	Proposed FSTPs/STPs
<b>Kannur</b>	<b>Kannur-67 MLD(53.6+13.1)</b> [Projected population: 3,72,044 ]	Individual STP provided for hotels, hospitals  For households, septic tank, soakpit, leach pit  <b>Individual STP for the large and medium category units in the entire Kannur district</b> There are 38 units generating 4.3 MLD of sewage and sullage under large and medium scale and are having STP; Kannur city-18; Thalassery-6; Payyannur-1; Koothuparambu-3; Anthoor M.-2; Panchayaths-8.	<b>Work awarded and not started</b> <ul style="list-style-type: none"><li>Chelora-FSTP-100KLD-Amruth-EC</li></ul> <b>Tendering</b> <ul style="list-style-type: none"><li>Kannur municipality-Old-1MLD-Amruth=biological – STP-decentralised</li></ul>
	Anthoor-4.1 (1.3+2.9) [Projected population: 37,926]	<b>Do</b>	
	Iritty-4.6 (1.4+3.2) [Projected population: 42,188]	<b>Do</b>	
	Koothuparamba-3.4 (1+2.4) [Projected population: 30,863]	<b>Do</b>	
	Mattannur-5.4 (1.6+3.8) [Projected population: 49,200]	<b>Do</b>	
	Panoor-2.0 (0.6+1.4) [Projected population: 18,224]	<b>Do</b>	
	<b>Payyannur</b> <b>Polluted stretch of Kavvayi river and Perumba river</b> <b>8.2(2.5+5.7)</b> [Projected population: 75,361]	Individual STP provided for hotels, hospitals  For households, septic tank, soakpit, leach pit	<b>DPR modification</b> <ul style="list-style-type: none"><li><b>Perumbaby Payyannur fish market-10KLD-LB</b></li></ul>
	<b>Thaliparamba</b> <b>Polluted stretch of Kuppam river; 8.2; (2.5+5.7)</b> [Projected population: 75,731]	<b>Common STP at Thaliparamba -0.5MLD-Thaliparamba Municipality</b>	
	<b>Thalassery-10.5(3.2+7.3)</b> [Projected population: 96,761]	Individual STP provided for hotels, hospitals  For households, septic tank, soakpit, leach pit	

District	Corporation/Municipality (Generation of sewage and sullage in MLD) Total=sewage+sullage [Projected population for 2020]*	Existing common treatment plant and individual STPs	Proposed FSTPs/STPs
Kasargod	<b>Kanhangad-8.3 MLD(2.5+5.8)</b> [Projected population: 76,647]	Individual STP provided for hotels, hospitals  For households, septic tank, soakpit, leach pit	
	Kasaragod-6.2 MLD (1.9+4.3) [Projected population: 56,613 ]	<b>Individual STP for the large and medium scale units in the entire Kasargod district</b> There are 16 units generating 0.8 MLD of sewage and sullage under large and medium scale and are having STP. Kanhangad-4; kasargod-5; Nileswaram-2; Panchaayths-5	
	Nileschwaram-6.2 MLD (1.9+4.4) [Projected population: 57,256 ]	<b>Do</b>	

## 5.2 Effluent generating consented units

The quantification of effluent generated from the consented units in the large and medium category has been done by the Board. 94.3 MLD of effluent is generated from 298 units. The details are given in Table 5.3. The major consented units discharging into river are given in Table 5.5. The major consented units discharging in to the sea is given in Table

**Table 5.5 Major consented units discharging into River**

SI No	Name of unit	Type of unit	Source of water consumption	Consumption of water in MLD	Effluent quantity in MLD	Mode of disposal
1	BPCL-Kochi Refinery	Oil refinery Large Red	Periyar	73	26.272	Chithrapuzha 0.3MLD for floor wash, fire fighting and green belt development

Sl No	Name of unit	Type of unit	Source of water consumption	Consumption of water in MLD	Effluent quantity in MLD	Mode of disposal
2	FACT Ltd., Udyogamandal Division, Eloor, Udyogamandal Eloor Municipality	Chemical Fertilizer Large Red	River	48	16.8	Periyar (downstream of pathalam bund)
3	FACT Ltd., Petrochemical Division, Eloor, Udyogamandal, Eloor Municipality	Petrochemical unit Large Red	River	13.97	5.04	Periyar (downstream of pathalam bund)
4	Fertilisers and Chemcals Travancore Limited, Cochin Division, Vadavucode-Puthencruzpanchayath	Fertilizer Large Red	Lake inside FACT campus	4.1	3.2	Chithrapuzha 240 KLD-For preparation of lime and dilution of phosphoric Acid
5	Nitta Gelatin India Limited Kathikudam Koratty Thrissur, Kadukuttypanchayath	Ossein Large Red	Chalakkudy river	3	2.735	River discharge
6	Nitta Gelatin India Limited, KINFRA park, KakkanadThrikkakara Municipality	Gelatin, peptide Large Red	Borewell	2.5	2.2	Rain water collected
7	Hindustan Insecticides Ltd, Eloor, Udyogamandal P.O. Eloor Municipality	Insecticides Large Red	River	1.6	1.024	Periyar (downstream of pathalam bund)
8	Alappuzha Govt. Medical College	Hospital		1.5	1	Drains to Kaappithodu
9	Cochin Minerals and Rutile Ltd., Industrial Development Area, Edayar, Muppathadom P.O. Kadungallurpanchayath	Chemical Large Red	River	1.995	0.659	Periyar (downstream of Pathalam bund)
10	CSO Paper Mills Private Limited, Kothamangalam Municipality	Pulp & Paper Small Red	Well	0.765	0.645	Kothamangalam river 0.25MLD reused in the process
11	Govt Medical College , Kozhikode	Hospital Large Red	KWA	0.5	0.5	Drain
12	ERCMPU, MILMA, Thrippunnithua, Thrippunnithura Municipality	Milk processing unit Large Red		0.57	0.45	Irrigation
13	Malabar Institute of Medical Science Mini Bypass Road, Govindapuram, Kozhikode Kozhikode Corporation	Hospital Large Red	KWA, well	0.51	0.45	Reuse /soak pit/drain



SI No	Name of unit	Type of unit	Source of water consumption	Consumption of water in MLD	Effluent quantity in MLD	Mode of disposal
14	SudChemie India Private Limited Edayar Industrial Development Area Binanipuram P.O. Pin – 683 502 Kadungallurpanchayath	Chemical catalyst industry Large Red	River	0.45	0.45	Periyar (downstream of pathalam bund)
15	United Breweries Limited Pudussrypanchayath	Fermentation Industry Large Red	Reservoir	0.945	0.4	Reuse & excess to Korayar river 250000 litres used for boiler, floor wash, other utilities, irrigation
16	Indian Rare Earths Ltd, Eloor, Udyogamandal P.O. Eloor Municipality	Chemical Large Red	River	0.27	0.4	Periyar (downstream of pathalam bund)
17	Carnival Soft Private Limited, Thrikkakara Municipality	IT Complex Large Red	Municipal supply	0.387	0.355	
18	Thiruvananthapuram Dairy, Ambalathara, Poonthura PO, Thiruvananthapuram Thiruvananthapuram Corporation	Milk processing and dairy products Large Red	KWA	0.472	0.35	Irrigation and excess into a drain leading to River Karamana
19	ITI LIMITED, PudussryPanchayath	Metal surface treatment or process Large Red	Tube well	0.4	0.3	Korayar River
20	HLL Life Care Limited, Peroorkdada Thiruvananthapuram Corporation	Surgical and medical products Large Red	KWA	0.8	0.1	Drain
21	Travancore Cochin Chemicals Ltd. (TCC), Eloor, Udyogamandal	Chlor alkali Sodium Chlorate Plant	River	5.565	0.1	Reuse in process and irrigation
22	KSRTC Bus terminal complex Kozhikode Corporation	Bus terminal Medium Orange	KWA	0.08	0.08	Drain
23	Western India Plywood Limited, Kannur Valapattnam gramapanchayath	Plywood and furniture Large Orange	Ground water	0.81	0.05	Valapattanam river
24	Kozhikode diesel project (No continuous working), Kozhikode Corporation	Power plant Large Red	Bore well	0.04	0.04	Drain
25	TMS Leathers Industrial Development Area Edayar, Muppathadom P.O. KadungallurPanchayath	Leather Red	River	0.1236	0.0332	Periyar (upstream side of pathalam bund)

Sl No	Name of unit	Type of unit	Source of water consumption	Consumption of water in MLD	Effluent quantity in MLD	Mode of disposal
26	Indigo Paints Pvt. Ltd., Kalamassery Municipality	Solvent & Water based paints Large Orange	Municipal supply	0.02	0.01	
27	Canara Paper Mills Pvt. Ltd	Paper Industry	Backwater Canal	0.025	0.172	Soakpit
				<b>155</b>	<b>62.5432</b>	

**Table 5.6 Major consented units discharging into Sea**

No	Name of unit	Type of unit	Red/ Orange / Green	Large / Medium/ Small	Local body	Products with capacity	Source of water consumption	Consumption of water in MLD	Effluent quantity in MLD	ETP units	Mode of disposal
1	Travancore Titanium Products Limited, Thiruvananthapuram	Pigments	Red	Large	Thiruvananthapuram Corporation	Titanium Dioxide Pigment - 60MT	KWA and tube well	0.9482	4.32	ETP	Sea (As per consent order, 70 % reused and rest discharged into Lakshadweep Sea)
2	Kerala Minerals and Metals Limited, Kollam	Pigments and intermediates	Red	large	Panmana	Titanium Dioxide-120 MTD	Tube well	6.934	4.8	Collection tank, caustic and lime addition, clarifier, ETP sludge tank	Sea
3	Indian Rare Earths Limited (Mineral Separation Plant), Kollam	Mining and ore beneficiation.	Red	large	Chavara Gramapanchayat	Ilmenite-200000TPA, Monozite-1200 TPA, Rutile, Zircon	Tube wells (2 Nos), canal and lake	2.8396	0.243	Physico Chemical Treatment	Sea
4	Uniroyal marine exports limited, Vengalambalam, Kozhikode	Marine	Orange	Large	Chemancherypanchayat	Marine	Well	0.036	0.036		Sea

No .	Name of unit	Type of unit	Red/ Orange / Green	Large / Medium/Small	Local body	Products with capacity	Source of water consumption	Consumption of water in MLD	Effluent quantity in MLD	ETP units	Mode of disposal
5	Mopla Bay Fishing Harbour, Ayikkara, Kannur	Fishing harbour	Orange	Large	Kannur Corporation	Fish handling facility at Mopla Bay	Open well and KWA	0.032	0.0256	Biogas plant, septic tank, sand filter, treated water collection tank Septic tank and soak pit Bar screen, oil and grease trap, chemical addition tank, settling tank and soakpit	Sea
6	ISRO, Ammonium Perchlorate Experimental Unit, Eumathala, Ernakulam	Ammonium Perchlorate Experimental Plant Chlorates and peroxide.	Red	Large	KeezhmadPanchayath	Ammonium perchlorate unite	Kerala Water Authority, 52 APE P Well Water ,72	0.0105	0.0105	ETP	Sea
7	Kerala Minerals & Metals Ltd, Titanium Sponge Unit	Pigment	Red	large	Panmana , panchayath	Titanium Sponge - 1550 MTD, Magnesium Chloride -6100 MTD	Tube well	0.03	0.009	Collection tank, caustic addition, clarifier, treated water tank, sludge drying bed	Sea
8	Nilambur traders, industrial estate westhill, kozhikode	Skim rubber	Red	Small	Calicut corporation	Serum rubber	Well	0.003	0.003	ETP	Sea
								10.833	9.447		

**5.3. Details on sewage management submitted on the Format send vide CPCB letter no B-17011/7/ MSW/2019 dated 17.11.2020**

Sl. No	Action Point	A		B	C=A-B	D										
		Existing Status		Desired/ Projected	Gap	Timeline										
1	Estimated Sewage Generation MLD	1117		1192	83											
2	Treatment Capacity (projection for 5 years to be taken into consideration )	<table border="1"> <tr> <td></td> <td>MLD</td> </tr> <tr> <td>Common STPs (2 No.s)</td> <td>124</td> </tr> <tr> <td>Individual STPs in 1000 establishments (large and medium)</td> <td>69</td> </tr> <tr> <td>Septic tank/soakpit/leach pit</td> <td>992</td> </tr> <tr> <td>Gap(0.8% as per the survey of Haritha Kerala Mission)</td> <td>7</td> </tr> </table>		MLD	Common STPs (2 No.s)	124	Individual STPs in 1000 establishments (large and medium)	69	Septic tank/soakpit/leach pit	992	Gap(0.8% as per the survey of Haritha Kerala Mission)	7		Augment sewer system in Thiruvananthapuram	7 MLD	
	MLD															
Common STPs (2 No.s)	124															
Individual STPs in 1000 establishments (large and medium)	69															
Septic tank/soakpit/leach pit	992															
Gap(0.8% as per the survey of Haritha Kerala Mission)	7															
3	Status of Sewerage System (in km)	Sewerage system in Thiruvananthapuram			Augment sewer system in Thiruvananthapuram											
4	No. of STPs (Details to be provided as per Annexure)	1000STPs in the establishments under large and medium scale 12 common STPs of 124MLD 6 FSTPs of 0.2MLD 992 MLD of septic tank/soakpit/leach pit		Proposal for augmentation and installation of sewage treatment facility for Urban area for 124MLD (CSTP+FSTP) is being implemented. Of which 30% work over by which sewage treatment achieved for 35 MLD; 6.5% under construction for 8 MLD; 25% work awarded for 30.7MLD ;12.5% Tendering/DPR preparation/Technical sanction to be obtained for 15.2 MLD 27% to be tendered for 33.5 MLD.												

5	Has bulk users identified for reuse of treated Water such as industrial clusters, Metro Rail, Indian Railways, Infrastructure Projects, Agriculture, Bus Depots and PWD(Y/N)	No				
6	Quantity of treated wastewater being used by Bulk User (in MLD)	Being collected from concerned departments				
	Industrial clusters,					
	Metro Rail,					
	Indian Railways,					
	Infrastructure Projects,					
	Agriculture, Bus Depots and PWD.					
7.	No. of Water Aquatic Sources (Lakes, Pond etc.) being developed through treated waste water	Being collected				

## Annexure

### 5.4 Format for Sewage Treatment Plants and Utilization of sewage

Sl. No	City/Town	STP location	Status	STP Installed capacity	Utilization	Process	Consent Status	Compliance Status			
								pH	TSS	COD	BOD
1	Thiruvananthapuram	Common Sewage Treatment Plant, Muttathara, Trivandrum maintained by Kerala Water Authority	Operational	107 MLD	80 MLD	ASP	Application to be resubmitted	complied			
		STP at Kumarichanda	Operational	10 KLD	10 KLD	Bio membrane bioreactor Technology	Application to be submitted				

2	Pathanamthitta	Sewage Treatment Plan at Sannidhanam (5MLD) Maintained by Travancore Devaswom Board	Seasonally Operated during festival season	5 MLD	3.5 MLD	JASB and SBR	Application to be submitted	complied
		Sewage Treatment Plan at Pamba(3.5 MLD) Maintained by Travancore Devaswom Board	Seasonally Operated during festival season	3.5 MLD	3.5 MLD	Coagulation & settling	Application to be submitted	complied
3	Kottayam	STP for Houseboat (0.09 MLD) at Kumarakom Maintained by District Tourism Promotion Council, Kottayam	Operational	90 KLD	90 KLD	ASP	Having valid consent	complied
4	Ernakulam	Sewage treatment unit, Kerala Water Authority, Elamkulam, Ernakulam (3 MLD)	Operational	4.5MLD	3 MLD	ASP	Application to be submitted	complied
		STP owned by Greater Cochin Development Authority, Kadavanthra, Kochi (0.45 MLD)	Operational	0.45ML D	0.45 MLD	ASP	Application to be submitted	-

Sl. No	City/Town	STP location	Status	STP Installed capacity	Utilization	Process	Consent Status	Compliance Status		
								pHS	TS	CBODD
		Septage Treatment Plant at Brahmapuram Kochi Corporation, Ernakulam	Operational	0.1ML D	0.1 MLD	MBBR	Having valid consent	complied		
		Septage Treatment Plant at Wellington Island, Kochi Corporation	Operational	0.1ML D	0.1 MLD	MBBR	Having valid consent	-		
		STP at Kalamassery Market, Kalamassery Municipality	Operational	10 KLD	started operation		Application to be submitted	-		
5	Kannur	Sewage treatment Plant at Taliparambu (0.5MLD) Taliparambu Municipality, Kannur	Operational	0.5MLD	0.5MLD	ASP	Mentioned in MSW Authorisation	complied		
6	Thrissur	Sewage treatment Plant at Guruvayur in Thrissur District	Commissioned	3 MLD	Not started functioning	ASP	Having valid consent	Not started functioning		
		FSTP at Mattampuram	Completed. Not started functioning	0.01 MLD	Not started functioning	BIOLOGICAL	Application is under processing	Not started functioning		
7	Malappuram	Sewage treatment Plant-at Malappuram Municipal Busstand	Operational	0.03 MLD	0.03 MLD	MBBR	Application to be submitted	Under revamping		
		Sewage treatment Plant-at Tirur (fish market)	Operational	0.045 MLD	0.045 MLD	BIOLOGICAL	Application to be submitted . Notice given.	-		
8	Adimaly	Sewage treatment	Operational	0.01	started	Electro	Application to	-		

	Grama Panchayat, Idukki	Plant at Comfort station, Adimaly Grama Panchayat, Idukki	I	MLD	functioning	coagulation	be submitted	
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**5.5. Additional Details Submitted on sewage management in the Revised Format to the Central Pollution Control Board vide letter dated PCB/HO/NGT/06/2018/06/2019 dated 15/05/2020 as per Hon'ble NGT order dated 07.01.2020 in O.A 606/2018**

Sl.No	Issue	Remarks										
1	a	Quantity of Sewage generated in the State (Project population as on 2020)										
		1192 MLD										
2	a	Quantity of Sewage treated in the State										
		<table border="1"> <thead> <tr> <th></th> <th>MLD</th> </tr> </thead> <tbody> <tr> <td>Common STPs (2 No.s)</td> <td>124</td> </tr> <tr> <td>Individual STPs in 1000 establishments (large and medium)</td> <td>69</td> </tr> <tr> <td>Septic tank/soakpit/leach pit</td> <td>992</td> </tr> <tr> <td>Gap (0.8% as per the survey of Haritha Kerala Mission)</td> <td>7</td> </tr> </tbody> </table>		MLD	Common STPs (2 No.s)	124	Individual STPs in 1000 establishments (large and medium)	69	Septic tank/soakpit/leach pit	992	Gap (0.8% as per the survey of Haritha Kerala Mission)	7
	MLD											
Common STPs (2 No.s)	124											
Individual STPs in 1000 establishments (large and medium)	69											
Septic tank/soakpit/leach pit	992											
Gap (0.8% as per the survey of Haritha Kerala Mission)	7											
3	a	Existing Coverage of Sewerage Network										
		84.14 MLD										
4	a	Has Sewage generation (town / City wise) been estimated for present and future population? Please provide details of the same										
		Yes Table 5.1										
5	a	Has adequate treatment capacity been developed for treatment of sewage?										
		No										
	b	If not, then what is present percentage of sewage being treated?										
		99.2%										
	c	If not, please provide the timeframe by which all sewage generated in the State shall be treated										
6	a	Please provide details of STPs (Town/ City Wise) along with details on compliance status and treatment capacity										
		2770 Nos of STP (individual)										
7	a	Is entire sewage generated from each town being linked with sewerage network in the state?										
		No										
	b	If not, then what is the present current percentage of sewage being collected through the existing sewerage network?										
		7.50%										
	c	If not, then please provide the the timeframe by which all sewage generated in the State shall be collected through sewerage network										
		Septic tank, soak pit and leach pit provided for the treatment of sewage										
8	a	Have all drains carrying waste water in each town / city been identified										
		Being done										
	b	<b>Provide details on the pollution load due to these drains</b>										
	c	<b>Has in-situ treatment of wastewater being carried out in all such drains for reduction of pollution load?</b>										
	d	<b>If not, then please indicate the number of drains in which in-situ treatment of waste water has commenced</b>										



	e	If not, then please provide the the timeframe within which in-situ treatment of wastewater shall be carried out in all such drains for reduction of pollution load	
6	a	Have all bulk users for reuse of wastewater been identified ?	No
	b	Is all treated wastewater from the STPs being reused for different purposes?	No
	c	If not, then what is current percentage of wastewater being reused?	42.5% of treated sewage used for reuse and ground water recharge
	d	If not, then please provide the the timeframe within which all treated wastewater from STP shall be reused for different purposes	

### 5.6 Submission of Monthly Progress Report to Ministry of JalShakti in Matter of OA. No. 673/2018

Kerala State Pollution Control Board submitted six Monthly Progress Report to Ministry of Jalashakti in matter of OA. 673/2018. Monthly Progress Report of October 2020 is enclosed as follows.



☎ General: 0471- 2312910, 2318153, 2318154, 2318155 Chairman: 2318150 Member Secretary: 2318151  
e-mail: ms.kspcb@gov.in FAX: 0471 – 2318134, 2318152 web: www.keralapcb.nic.in

## **KERALA STATE POLLUTION CONTROL BOARD**

Pattom P.O., Thiruvananthapuram – 695 004

PCB/HO/EE3/NGT/673/2018

Date: 20.11.2020

From

The Member Secretary

To

The Secretary,  
Ministry of Jal Shakti,  
Department of water Resources, River Development and Ganga  
Rejuvenation,  
Shram Shakti Bhawan,  
Rafi Marg,  
New Delhi-110001.

Subject: Forwarding of Monthly Progress Report of October, 2020 – reg.  
Ref: Order of the Hon'ble NGT in the matter OA No. 673 of 2018

Sir,

The signed compiled PDF copy of Monthly Progress Report of October, 2020 in the new format is submitted herewith for kind information and necessary action. The revised dossier regarding sewage and effluent from industries will be submitted at the earliest.

Yours faithfully,

**SREEKALA S** Digitally signed by SREEKALA  
Date: 2020.11.20 18:23:20  
+05'30'

Member Secretary

Copy to: 1. Principal Secretary, Environment Department (Chairperson, RRC)

2. O/o the Chief Secretary's Environment Monitoring Cell

3. CPCB, Delhi and Bangalore

### **Overall status of the State:**

- **Total Population: Urban Population & Rural Population separately**

As per Census 2011, Kerala has population of 3,37,77,386. Rural population in Kerala is 25,840,501 and urban population in the state is 79,36,885. Population projected for 2020 for rural area is 27,005,078 and for urban area is 82,94,583. The water consumption and wastewater generated are calculated based on the population projected for 2020.

- **Estimated Sewage Generation (MLD):**

As per the minutes of the 7<sup>th</sup> CMC meeting held on 09.11.2020, the quantity of sewage generation and treatment is being reassessed by the Board. The updated sector wise details will be submitted at the earliest.

- **Details of Sewage Treatment Plant:**

- Existing no. of common STPs/FSTPs: 13 common STPs and 3 common FSTPs
  - No. of functional common STPs in the state: 12
  - No. of functional common septage treatment plants in the state: 2
  - No. of common STP which has not started functioning: 1
  - No. of common FSTP which has not started functioning: 1
- Total sewage treatment capacity in the state through existing common STPs: 124.145 MLD
- Total sewage treatment capacity in the state through existing common FSTPs: 0.21 MLD
- (STPs are being planned for Irinjalakkuda Municipality, Thripunithura Municipality, Thikkakkara Municipality, additional STP requirement for 60 crores for Thiruvananthapuram District and for Taluk Hospital by Mavelikkara Municipality( 300KLD). Revamping of STPs at Elamkulam (including capacity enhancement), Adwaitasramam & Aluva Market in Ernakulam District and enhancement of capacity utilisation of 107 MLD plant at Muttathara, Thiruvananthapuram are also being proposed)
- (FSTPs are being planned for Irinjalakkuda Municipality, Chengannur Municipality and Thiruvalla Municipality)

### **Reuse of Treated Water (O.A No: 148/2016 )**

Possibility of utilizing the treated effluent for irrigation, gardening, industries, construction and recharge are being explored. The DPR for tertiary treatment of effluents of STP at Muttathara is ready and in TS stage.

**5.7 Primary Effluent Treatment Plant as per order dated 19-2-2019 in O.A. No.593/2017**

The report for the month up to December 2019 was submitted to Central Pollution Control Board's online web portal "E-Track". As per the reports up to December, 2019, 5166 units require ETP. Of these, 129 were inspected and 5146 units have provided functional ETP. 20 units were found to be operating without ETP. 5114 units complied with the effluent standards. Closure direction was issued to one unit. For the remaining 19 units, the Board has taken action for its compliance.

Total no. of STP in the state is 2777 (including 2Municipal STPs), of these 2766 STPs are complying with the standards. 11 STPs are found to be non-complying.

Due to outbreak of Covid-19, the details upto the previous month could not be updated. The same will updated at the earliest.

**5.8 TOTAL AMOUNT COLLECTED FROM ERRING INDUSTRIES AND UTILISATION OF FUND (OA.No. 639/2018)**

**5.81. Total amount collected from erring industries on the basis of "Polluter Pays Principle" Precautionary Principle and details of utilization of funds collected (639/2018)**

15 Industries have been fined, INR 7.25 Crores have been collected.

Direction issued to Thrissur Corporation for environmental compensation of Rs. 4.5 Crore. Notice issued to Thiruvananthapuram Corporation for giving environmental compensation of 14.59 crore. Notice was also issued to Kochi Corporation, Municipalities namely Thrippunithura, Aluva, Angamaly, and Kalamassery and Maradu panchayath for taking steps to provide biomethanation plant for the food wastes generated.

Direction issued to the three hospitals and to DMO and Urban Directorate and Panchayath in Idukki in OA 585/2018.

SL No	Company	Amount Collected (INR Crore)	Utilization of fund	Remarks
a)	Binani Zinc Ltd, Ernakulum	0.5	Drinking water supply to nearby residents Edyar area in Kadungalloor Grama Panchayath	As per the order of Supreme Court Monitoring Committee
b)	FACT Ltd., Ernakulum	1.25	Kuzhikandom cleaning	Kuzhikandom

c)	FACT Ltd., Ernakulum	0.35	Drinking water supply to nearby residents(Eloor Municipality)	As per the order of Supreme Court Monitoring Committee
d)	Hindustan Insecticide Limited, Ernakulum	1.24	Kuzhikandom cleaning	Kuzhikandom
e)	Hindustan Insecticide Limited, Ernakulum	0.35	Drinking water supply to nearby residents(Eloor Municipality)	As per the order of Supreme Court Monitoring Committee
f)	Indian Rare Earths Limited	1.25	Kuzhikandom cleaning	Kuzhikandom
g)	Indian Rare Earths Limited, Ernakulum	0.35	Drinking water supply to nearby residents(Eloor Municipality)	As per the order of Supreme Court Monitoring Committee
h)	Kerala Minerals and Rutilles Limited, Kollam	1	Remediation and/or distribution to affected persons either as per the direction of Tribunal or as per the decision of State Govt.	As per NGT order dated 31-8-2017 in Application No.142,290, 453 of 2013
i)	Marthoma Granites,Thodupuzha	0.258516	Protection of environment	Environment Protection Fund
j)	Merchem Limited, Ernakulum	0.0875	Drinking water supply to nearby residents(Eloor Municipality)	As per the order of Supreme Court Monitoring Committee
k)	New Hotel/Lodging House,Idukki	0.01	Environment protection in Idukki	Environment Protection Fund
l)	Organo fertilizersErnakulum	0.025	Board's account	Forfeiting of bank guarantee
m)	Sree Sakthi Limited, Ernakulum	0.24	Removal of plastic waste in thei premises	Forfeiting of bank guarantee
n)	Vijay Construction, Ernakulam	0.02	Board's account	Forfeiting of bank guarantee

### 5.8.2 Utilization of consent funds - Order dated 05-11-2019 in OA 639/2018

- There are total 433 employees out of which only 94 permanent employees working in the Kerala State Pollution Control Board. An amount of 3 Crore (approx) is incurred as monthly salary and other expenses.
- Notification was issued on 26-12-2015 for appointment by Public Service Commission. On 14-11-2019 the Kerala State Pollution Control Board rules 2019 was notified. The Kerala State Pollution Control Board State/Subordinate services rules 1999 to be considered and approved by the Kerala Public Service Commission and Government and after that the Board can make permanent appointment in the Board.
- The vacancies in the entry cadre have been filled up by appointing person on contract basis. Steps are being initiated to make appointment in the cadre of

Assistant Environmental Engineer, Assistant Environmental Scientist on contract/deputation basis.

- Extra manpower (20 technical assistants) has been provided through PCB for monitoring the compliance for the model city/town/villages and for other remaining local bodies (additional 47 technical assistants).
- Kerala is the first State which has taken initiative for the implementation of Anti Microbial Resistance action plan. Kerala State Pollution Control Board is funding 2 projects namely (1) study on anti microbial resistance in waste water by College of Engineering, Thiruvananthapuram (2) Surveillance of anti microbial resistance in selected surface bodies of Trivandrum District by Department of Environmental Science, University of Kerala. Total cost of these project is Rs. 23,62,000/- and the same is met from the consent fund.
- For the Annual maintenance Contract of CAAQMS and display system at 2 places.
- For the setting up of 2 continuous ambient noise monitoring stations an amount of 15,00,000/- was sanctioned from non-plan fund. For the revamping of connectivity between control room and CCTV an amount of Rs. 7,16,314/- was also sanctioned under non-plan fund.
- Based on judgment in W.P (C) No. 9155 of 2016 an amount of Rs. 35,14,026/- has been sanctioned for the implementation of the project to install a model pollution control facility in an identified plywood industry
- The Board conducted a project, "Hydrochemistry" of Vembanad backwaters with special reference to pollution problems and management measures. 10% of the project amount is sanctioned from the non-plan fund.
- The Board is utilizing consent fund for the purchase/maintenance of equipments/consumables for the proper working of laboratory. An amount of Rs. 1,14,69,874/- has been sanctioned for the purchase of equipments/consumables for the proper working of laboratory.

## CHAPTER VI

### POLLUTED STRETCHES (OA 673/2018)

#### 6.1 Status

- There are 21 polluted river stretches in Kerala. Critically Polluted (Priority 1) is the Karamana River stretch from Melekadu to Moonnattumukku. The other rivers fall in Priority
- For the river Karamana, Action Plan was approved by the NGT vide order dated 8-4-2019 in OA 673/2018. The action plan is being implemented by the concerned departments. For the remaining 20 polluted stretches, action plans were prepared and submitted to the NGT. The compliance status is regularly monitored.
- Out of the 20 polluted stretches, action plans for the 13 polluted stretches were submitted to CPCB and to Hon'ble NGT on 26-6-2019. Though for the remaining seven stretches (Pamba, Manimala, Kavvai, Kuttiyadi, Uppala, Mogral, Bhavani), BOD is within the standard of 3 mg/l as per the water quality report during 2017-18. As instructed by the Central Pollution Control Board, action plans were submitted for the remaining seven polluted stretches on 30-7-2019. As instructed by CPCB, Kerala revised action plan of five river stretches (Pamba, Manimala, Kecheri, Kdambrayar, Bharathapuzha) were submitted. Of which the action plan of Bharathapuzha was reviewed on 22.02.2020. Then the revised action plan after RRC approval of five river stretches under Priority IV were submitted to CPCB on 19.05.2020 and was approved by CPCB.
- As per the Hon'ble NGT order website exclusively for RRC was developed by KSPCB as [www.ksrrc.in](http://www.ksrrc.in).
- The progress on the implementation of Karamana Action Plan by the departments was reviewed on 8-7-2019, 30-8-2019, and 24-10-2019. The Principal Secretary reviewed the status of implementation on 9-12-2019 and on 18-02-2020. The Ministry of Jal Shakti reviewed the same on 19-02-2020 through video conferencing and submitted the progress report to them. The progress was checked by NMCL, NRCD, CPCB officials on 05-03-2020 and 06-03-2020
- For the Karamana action plan, more than 50% of short term measures were implemented and the departments are also in the process of implementing long term measures. Progress of action plan for other rivers is also reviewed periodically.
- As per the NGT order in OA No. 673/2018, Board's all district offices were instructed to monitor Faecal Streptococci also in addition to Faecal coliform while monitoring the water quality of polluted stretches

- One day training was given to officers regarding the method of analysis of the same.
- As per the order dated 6-12-2019 of the Hon'ble NGT in OA 673/2018, Board all district offices were instructed to conduct a survey with all said parameters such as BOD, FC, pH, COD, DO and other recalcitrant toxic pollutants having tendency of bio-magnification, within three months and that monitoring gaps be identified and upgraded so as to cover upstream and downstream locations of major discharges to the river.
- Board's six district offices are equipped with portable water quality monitoring analyzers to measure pH, DO etc, Action is being taken to equip rest of district offices also with such analyzers

### Status report on Implementation of Action Plan as per Hon'ble NGT order in O.A.

#### No. 673/2018 as on May 2020

SL. No.	District	River	Polluted River stretches	Priority	Quality of Water	% of compliance	STP/Treatment	Time of achievement
1.	Kasargod	Uppala	Poyya to Mulinja	V	BOD <3 FC<50 0	90%	Periodical checking and sampling	-
2.		Mogral	Along Mogral	V	"	90%	"	"
3	Kannur	Kavvai	Along Kavvai	V	"	"	"	"
4		Kuppam	Thaliparamba to Velichangool	V	"	"	Common STP of 0.5 MLD at Thaliparambu	"
5		Peruvamba	Along Peruvamba	V	"	"	<u>DPR modification</u> Perumbaby Payyannur fish market-10KLD by localbody	31.03.2021
6.		Ramapuram	Along Ramapuram	V	"	"	"	"
7	Malappuram	Thirur	Naduvilangadi to Thalakkadathur	V	"	"	45 KLD at Thirur market and 50 KLD at Thirur bus stand completed	"
8.		Kadalundi	Along Hajirappally/	V	"	"	• 1.8 MLD (of high rise buildings and STPs of Tirur and Malappuram	"



SL. No.	District	River	Polluted River stretches	Priority	Quality of Water	% of compliance	STP/Treatment	Time of achievement
			Hajiyarpalli				municipalities) <ul style="list-style-type: none"> <li>• STP at Malappuram Municipal bus stand-30KLD-MBBR</li> <li>• STP at Tirur Fish market of 45 KLD-Biological</li> </ul>	
9	Palakkad	Bharathapuzha	Along Patambi	IV	"	"	STP proposed by Shornoor Municipality. Project planning	31.03.2021
10.		Bhavani	Along Elachivazhy	V	BOD <3 FC>500	80%	Community/Individual Toilets proposed	"
11	Thrissur	Kecheri	Puliyannor to Kechery	IV	BOD <3 FC< or =500	85%	<u>DPR under preparation</u> <ul style="list-style-type: none"> <li>• Co-treatment-1 MLD-KIIFB-Biological</li> <li>• Ottuppara market-18KLD-KIIFB-biological</li> <li>• Athani market-13.9KLD-KIIFB-biological</li> </ul>	31.03.2021
12		Karuvannur	Along Karuvannur	V	BOD <3 FC<500	"	FSTP & STP proposed	"
13		Puzhakkal	Olarikkara to Puzhakkal	V	"	"	100 KLD & 360 KLD STP proposed	"
14	Ernakulam	Chithrapuzha	Irumpanam to Karingachira	V	BOD <3 FC>500	30%	STP proposed	18.02.2021
15		Kadambrayar	Manckakadavu to Brahmapuram	IV	"	"	<ul style="list-style-type: none"> <li>• 10KLD STP of Municipality</li> <li>• 10 KLD STP at Kalamassery market</li> </ul>	"

SL. No.	District	River	Polluted River stretches	Priority	Quality of Water	% of compliance	STP/Treatment	Time of achievement
16		Periyar	Alwaye-Eloor to Kalamassery	V	"	"	<p><b>Common STP</b></p> <ul style="list-style-type: none"> <li>• Elamkulam-4.5 MLD capacity-Utilization capacity-3.5 MLD maintained by KWA-It consists of ASP</li> <li>• Marine Drive-450KLD STP-Maintained by Greater Cochin Development Authority, Kadavanthra (ASP)</li> <li>• <b>FSTP-Brahmapuram</b>-0.1 MLD using anaerobic digestion and MBBR</li> <li>• <b>FSTP-Willingdon Island</b>-0.1MLD using anaerobic digestion and MBBR</li> </ul> <p><b><u>Individual STP for the large and medium scale units in the entire Ernakulam district</u></b></p> <p>There are 332 units generating 15.3 MLD of sewage and sullage under large and medium scale and are having STP</p> <p><b><u>Work awarded and not started</u></b></p> <ul style="list-style-type: none"> <li>• Division 1-4-6.5MLD-Kochi Smart City</li> <li>• Elamkulam-5MLD-Biological-Amruth-KWA</li> </ul> <p><b><u>SHPSC approval</u></b></p> <ul style="list-style-type: none"> <li>• Division 15-STP-1.4MLD-Amruth-biological</li> </ul>	"

SL. No.	District	River	Polluted River stretches	Priority	Quality of Water	% of compliance	STP/Treatment	Time of achievement
							<ul style="list-style-type: none"> <li>Division 16-STP-1.1MLD-Amruth – Biological</li> <li>Division 17-STP-1.4 MLD-Amruth</li> </ul> <u>To be tendered</u> <ul style="list-style-type: none"> <li>Edappally-2MLD-Integrated Water Transport System-KMR-SBR</li> <li>Elamkulam-10MLD-Integrated Water Transport System-KMR-SBR</li> <li>Perandur-4MLD-Integrated Water Transport System-KMR-SBR</li> <li>Puthukalavattom -5MLD-Integrated Water Transport System-KMR-SBR</li> <li>Vennala-10MLD-Integrated Water Transport System</li> </ul>	
17	Kozhikode	Kallayi	Thekepuram to Arakkinar	V	BOD <3 FC>500	40%	<p>There are 157 units generating 11.6 MLD of sewage and sullage under large and medium and are having STP. Kozhikode city-114; Vatakara-7; Ramanattukara M.-2; Payyoli M.-1; Mulkom M.-1; Panchayaths-28</p> <p><b>Work started</b></p> <ul style="list-style-type: none"> <li>MC College-STP-2 MLD with septage treatment and 1 MLD</li> </ul>	18.02.2021

SL. No.	District	River	Polluted River stretches	Priority	Quality of Water	% of compliance	STP/Treatment	Time of achievement
							plant  <b>Tendered and not awarded</b> <ul style="list-style-type: none"> <li>Kothi-Zone A-Package B-Amruth-biological-6MLD</li> </ul> <b>Under tendering</b> <ul style="list-style-type: none"> <li>Avikkalthodu -Zone A- Amruth-Biological-7MLD</li> </ul>	
18		Kuttiyadi	Along Kuttiyady	V	"	"	"	"
19	Pathanamthitta	Pamba	Mannar to Thakazhy	IV	BOD <3 FC>500	70%	Minimal Treatment & Disinfection proposed	-
20	Alappuzha	Manimala	Kalloopara to Thondra	IV	BOD <3 FC>500	50%	STP proposed	18.02.2021
21	Trivandrum	Karamana	Malekkdu to Thiruvallam	I	BOD <3 FC>500	30% (Shorter m> 50%)	STP proposed, Sewerline	31.03.2021

## 6.2 Other Projects

### a) National Hydrology Project

Under the National Hydrology Project, a study is planned on 5 major rivers, namely Meenachil, Periyar, Bharathapuzha, Kallai and Valapatnam.

### b) Urban Regeneration and Integrated Water Transport System in Cochin

A project titled Urban Regeneration and Integrated Water Transport System in Cochin with a project outlay of Rs 1365.16 crores has been appraised by KIIFB for funding. It is intended to regenerate the urban area in and around the 5 canals in Kochi, rehabilitate the slum dwellers and make use of the commercial area near the canal along with creation of tourism destinations and navigation

through the canals. In principle, approval has been given for KIIFB funding for Rs 566.51 crores for land acquisition and building compensation in 2 Phases, namely Phase 1 for Rs 340.69 crores and Phase 2 for Rs 225.82 crores. Kochi Metro Limited is the Special Purpose Vehicle for this project.

**c) Akkulam Lake Rejuvenation**

A project titled Akkulam Lake Rejuvenation with a project outlay of Rs 126 crores has been appraised by KIIFB for funding. In principle, sanction has been accorded for conducting bathymetric and other studies for Rs 4 crores, as the 1st step. Translational Engineering Centre at Barton Hill Engineering College is the project consultant. WAPCOS is the Special Purpose Vehicle for the project. Bathymetry study has been conducted.

**CHAPTER VII**  
**RESTORATION OF ALL WATER BODIES (OA 325/2015)**

**7.1 Order dated 10-5-2019 and 1-6-2020 in OA 325/2015**

All the States are directed to review the existing framework of restoration of all the water bodies by preparing an appropriate action plan. Such action plan may be submitted within three months and a report furnished to the CPCB. The Chief Secretaries of all the State in the course of undertaking monitoring exercise in pursuance of order in OA 606/2018 may also include restoration of water bodies. 1<sup>st</sup> phase report submitted. Action initiated for 2<sup>nd</sup> phase including field monitoring.

NGT vide order dated 25-2-2020 directed that the information for restoration of water bodies may be furnished by all the States/UTs by March 31, 2020 positively to the CPCB failing which the States will be liable to pay compensation at the rate of Rs. 1 lakh per month till information is furnished. Payment of compensation will be the responsibility of the Chief Secretaries of the respective States/UTs.

After the latest NGT order dated 25.02.2020, CPCB has circulated a detailed format seeking information on no. of identified water bodies, location details, water quality status, compliance status w.r.t. designated best use, identified water bodies which require restoration, prioritization of water bodies requiring restoration, detailed action plans for restoration of identified polluted water bodies in light of the indicative guidelines circulated by CPCB to all the States/UTs. Kerala SPCB vide letter dated 17.03.2020 submitted information as per guidelines of CPCB

**CHAPTER VIII**  
**COASTAL DISCHARGES (829/2019)**

**8.1 Orders dated 17-9-2019 and 22-4-2020 in O.A. No. 829/2019**

The Hon'ble Tribunal directed on 7-9-2019 in O. A. 829/209 that coastal and marine pollution is to be included in the District Environment Plan by District Magistrate. The CPCB was directed to submit status report. As instructed by the CPCB, The Board has vide letter No. PCB/HO/EE3/OA 829/2019/3/2020 dated 2-3-2020 and vide letter No. PCB/HO/CPCB-MRM/2019 dated 3-1-2020 submitted report to the Central Pollution Control Board, a copy of which is enclosed.

The Hon'ble Tribunal has directed all SPCBs of coastal states to give relevant information to CPCB within one month from today failing which defaulting states will liable to pay Rs. 10 lakhs per month till compliance. District Environment Plans were received for all districts.

**CHAPTER IX**  
**COMPLIANCE STATUS ON BIOMEDICAL WASTE MANAGEMENT RULES (OA 710/2017)**

**9.1 Format on Biomedical Waste Management**

Sl. No.	Query	Reply
1	Why inventory on numbers of Healthcare Facilities is still incomplete in State/UT, as required under BMW Rules, 2016?	<ul style="list-style-type: none"> <li>• There are 17,354 health care facilities (HCF) which include 817 AYUSH and 533 veterinary hospital</li> <li>• Inventory was submitted</li> </ul>
2	What is the reason that inventory is still under process?	
	As observed that non-bedded HCFs have not applied for authorization, why such HCFs are allowed to operate without authorization under BMW Rules, 2016?	<ul style="list-style-type: none"> <li>• Almost all private bedded and non-bedded hospitals and clinics were brought under the purview of the Board</li> <li>• The departments concerned were repeatedly instructed to ensure all Veterinary hospitals and AYUSH to apply and obtain consent/authorization</li> <li>• Show cause notices were also issued to the departments concerned in this regard.</li> </ul>
4	How many applications are still under process with State Boards for grant of authorization?	<ul style="list-style-type: none"> <li>• The application for authorization of HCFs in Munnar, Idukki district were kept pending for want of remittance of EC. But now it was decided by the Board to dispose such applications if they are complying with the BMW rule at present, after conducting inspections. The action is progressing.</li> <li>• No other applications are pending.</li> </ul>
5	In case of no Common Biomedical Waste Treatment Facility in Arunachal Pradesh, Andaman & Nicobar, Goa, Lakshadweep, Mizoram and Nagaland & Sikkim State/UT how generated biomedical waste is being treated and disposed.	NA
6	Why still there is no proposal submitted by Arunachal Pradesh, Andaman & Nicobar, Goa, Lakshadweep, Mizoram and Nagaland & Sikkim State/UP for setting up CBWTF?	NA



7	Why Barcode system is not implemented in Andaman Nicobar, Arunachal Pradesh, Assam, J & K, LakshawEEP, Mizoram, Orissa, Puducherry, Sikkim, Uttar Pradesh, West Bengal, Chandigarh, Delhi, Jharkhand, Madhya Pradesh, Maharashtra, Rajasthan and Tamil Nadu so far even when the deadline is over as per BMW Rules, 2016?	NA
8	Whether State/UT has constituted State Advisory Committee so as to review the implementation status?	Yes
9	What steps have been taken by Advisory Committee so as ensure implementation of BMW Rules, 2016?	<p>The first meeting of the Advisory committee was conducted on 3-9-2019. Steps taken are as follows:</p> <ul style="list-style-type: none"> <li>• State Finance department allowed for earmarking funds not more that 5% from the Annual plan amount allotted to the Health department for utilizing or the activities of solid and liquid waste management in hospitals.</li> <li>• To take action for the gap identified in 127 hospitals for conducting verification, present stage of working, adequacy, need for augmentation of existing facilities, filling up of gap in biomedical, general waste and sewage management in those hospitals in the first phase and for primary level health care institutions in the second phase.</li> <li>• To ensure proper segregation, collection, transportation and on site storage facility of biomedical wastes.</li> <li>• For establishing sewage treatment facility in hospitals and to follow MBR technology</li> <li>• For establishing modern biogas plant(like BARC model) in hospitals for treatment of food and vegetable waste; source segregation of general wastes other than biomedical wastes; establishing MCF and RRF</li> <li>• For giving proper IEC activities for reduction of waste</li> <li>• To promote common treatment and disposal facility in Medical colleges where there is sufficient land available for catering the need of the hospital and other small hospitals in the district</li> </ul>

		<ul style="list-style-type: none"> <li>Monitoring by District Level Monitoring committee chaired by District Collectors</li> </ul> <p>The second meeting is proposed on .....</p>
10	How many HCFs other than hospitals, nursing homes etc. such as veterinary hospitals, animal houses, and AYUSH hospitals have been monitored?	<p>There are 17,354 health care facilities (HCF) which include 817 AYUSH and 533 veterinary hospital</p> <p>Notice was issued to the concerned departments for bringing all such HCFs under authorization. The status is being updated through the annual reports being collected from the HCFs and from the District offices.</p>
11	What is the frequency for conducting training or capacity building programmes for State Board officials and for staff of HCFs?	<p>Board in association with National Safety Council is conducting training to the staff of HCF and CBMWTF once in a year. This year the training was conducted through webinar on 20.11.2020 on COVID waste handling. The resource persons from the Board took classes on trainings arranged by Veterinary Department.</p> <p>Training is being conducted through electronic media by the District Offices of the Board.</p> <p>Training was arranged, with the help of IMAGE, to all the health care facilities having COVID wards on the "management of COVID19 waste" conducted by "Toxic Links", an environmental research group.</p> <p>The CBMWTF, (IMAGE) conducts training to</p> <ul style="list-style-type: none"> <li>Conducted training to all HCF regarding COVID 19 waste handling. Training was given by IMAGE to the waste handlers and waste generators to implement the app.</li> <li>newly affiliated HCF;</li> <li>newly appointed staff if any on need basis;</li> <li>Whenever notices improper segregation/handling of BMW, in any HCF;</li> <li>CBMWTF conducts routine training also with not less than twice a year.</li> </ul>

12	<p>What is the status of installation of Continuous Online Emission Monitoring System with CBWTF and why it has not been implemented by all CBWTFs? What follow-up action has been taken by State Boards?</p>	<p>Online emission monitoring system installed in CBMTWT and is connected to Board's server. Real time data</p> <p>The parameters namely CO, CO<sub>2</sub> and primary and secondary temperatures are continuously monitored and the other parameters namely PM, HCl, NO<sub>x</sub> and VOC are monitored by CBMTW on monthly basis.</p>
13	<p>How OCEMS data received by state Boards is being validated?</p>	<p>The values of CO, CO<sub>2</sub>, and primary and secondary temperature are connected to Board's server and exceedances, if any, are noticed</p>
14	<p>What is the status of compliance to BMWM Rules, 2016 by CBWFFs? What action has been taken against defaulting facilities?</p>	<p>An existing Common Biomedical waste treatment facility (IMAGE) is in operation in Palakkad. The Board has approved IMAGE to fully utilize its installed capacity of 55.8 as they augmented/upgraded the incinerators to meet CPCB's new emission standards.</p> <p>CBWTF of capacity 16 TPD in Ambalamedu, Kochi will be commissioned by February 2021. The erection of incinerators is progressing by Kerala Enviro Infrastructure Limited and trial run is expected to be by February, 2021.</p> <p>3 acres of land at Brahmapuram, Kochi is allotted to IMAGE for setting up a new CBWTF. IMAGE submitted application for consent to establish.</p>
15	<p>What is the frequency of monitoring of Healthcare Facilities for verification of compliance to BMWM Rules?</p>	<p>Health care institutions having more than 100KL generation of effluent falls under Red category and for such category, time frame fixed for inspection and collection of sample is once in a month.</p> <p>The other HCIs fall under orange category For such units, frequency of inspection is once in three for large scale, once in six months for medium and once in a year for small scale.</p>



**KERALA STATE POLLUTION CONTROL BOARD**

കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്

Pattom P.O., Thiruvananthapuram – 695 004

പട്ടം പി.ഒ., തിരുവനന്തപുരം - 695 004

PCB/HO/EE-4/NGT/OA No. 710/2017/19/2019-II

Date: 27/11/2020

From

The Member Secretary

To

Sri. B Vinod Babu,  
AD & DH WMD-I,  
Central Pollution Control Board,  
Parivesh Bhawan,  
East Arjun Nagar,  
Delhi-110032

Sub: - Follow-up action on Hon’ble National Green Tribunal order dated 20/07/2020 in the matter of O.A.No.710-713/2017

Ref: - Letter no. F.NO. B-31011/BMW(42.30)/2020/WMD-I/5289 dated 21/08/2020

Sir,

This is in reference to the letter cited, the compliance report in the prescribed format is detailed below:

Sl. No.	Key Performance Indicator	Action taken/Status of action taken
1.	Inventory of all Healthcare Facilities and biomedical waste generation	<p><b>Completed : Yes</b>  <b>Inventory completed on:</b> Nov, 2020  <b>As per inventory</b>  <b>Total No. of HCFs:</b>17,354  <b>No. of bedded HCFs:</b> } HCFs-16,004  <b>No. of non-bedded HCFs:</b> } AYUSH-817                      Veterinary-533</p>
2.	Authorization to all Healthcare Facilities including non-bedded HCFs	<p><b>Total No. of HCFs:</b> }  <b>Bedded HCFs;</b> } Process of bringing all HCFs under the consent/purview will Be completed by 31/12/2020  <b>Non-bedded HCFs:</b> }  <b>Authorised bedded HCFs:</b> }  <b>Authorised non-bedded HCFs:</b> }  <b>Reason for unauthorized HCFs:</b> }</p>

3.	Facilitate setting-up adequate number of Common Biomedical Waste Treatment Facilities(CBWTFs) to cover entire State or all HCFs	<p><b>Compliance status of each CBWTF:</b></p> <ol style="list-style-type: none"> <li>1. The CBWTF operating in the State is located at Palakkad district. In compliance to CPCB direction as part of achieving new emission standard and 2 seconds residence time, the incinerators at IMAGE were modernized /augmented. Consent variation order for operating the facility at Palakkad to operate in its full initial installation capacity of 55.8 ton/day. The incinerators are now meets the new emission standard. The COVID 19 BMW also along with non COVID BMW is now disposing through this facility.</li> <li>2. The erection of incinerators progressing and is expected to be commissioned by February, 2021. The area earmarked within 75 km from the facility. Discussion is going on for the trial run.</li> </ol> <p>Entire waste in the State can be treated through the above facilities.</p> <p><b>Action taken by SPCB/PCC for non-compliance:</b></p>
4.	Constitution of State Advisory Monitoring Committee and District Level Monitoring Committee	<p><b>Has been constituted:</b> Yes</p> <p><b>If yes frequency of meeting:</b></p> <ul style="list-style-type: none"> <li>• The State Advisory Monitoring Committee has been constituted vide GO(Rt) No. 1354/2019/ H&amp;FWD dated 05/06/2019. The first meeting of the advisory committee was conducted on 03/09/2019.</li> <li>• The second meeting is proposed in the last week of November.</li> </ul>
5.	Implementation status of Barcode system	<p><b>Status of implementation of bar code by HCFs:</b> Implemented</p> <p><b>Status of implementation of bar code by CBWTFs:</b> Implemented</p> <p><b>User credentials for CPCB from each CBWTF:</b> Yes</p>
6.	Monitoring of Healthcare Facilities other than hospitals/clinics such as Veterinary Hospitals, Animal Houses, AYUSH Hospitals etc.	<p><b>Number of HCFs other than hospitals/clinics such as Veterinary Hospitals, Animal Houses, AYUSH Hospitals etc. monitored till date:</b> Due to the COVID pandemic situation the monitoring could not be conducted as per usual schedule.</p>
7.	Monitoring infrastructure of SPCBs/PCCs	<p><b>Whether SPCB/PCC has laboratory to do incinerators stack monitoring, efficiency test for autoclave, wastewater analysis ETP effluent:</b> Yes</p>
8.	Training and capacity Building of officials of SPCBs/PCCs and	<p><b>No. of training programs conducted:</b></p>

	Healthcare Facilities	<p>Online trainings are being conducted at District level by the Board Officers.</p> <p><b>For state board officials: 1</b>  <b>For HCFs: 1</b>  <b>For other stakeholders, if any: 1</b></p> <p style="text-align: right;">} webinar conducted in  } co-ordination with  National Safety Council</p>
9.	Installation of OCEMS by CBWTFs as a self-monitoring tool and transmission of data with servers of SPCBs/CPCB	<p><b>Number of CBWTFs installed OCEMS: 1</b></p> <p><b>Status of connectivity of OCEMS with SPCB/CPCB:</b> Presently the emission parameters like CO, CO<sub>2</sub>, temperatures of primary &amp; secondary chambers are uploaded in real time to the servers of Kerala PCB &amp; CPCB. Concentrations of SO<sub>2</sub>, NO, NO<sub>2</sub>, N<sub>2</sub>O, NH<sub>3</sub>, O<sub>2</sub> and TOC (Total Organic Carbon) are also be measured manually. Continuous Stack Emission Monitoring Systems (OCEMS) accumulates data on a pre-determined time schedule. The PCB can monitor the stack emission online in real-time and it is self-reporting to the authorities when permit limits are exceeded.</p> <p><b>Daily monitoring of OCEMS data is carried out or not:</b> Yes</p> <p><b>Action taken for discrepancy:</b> Rectification is done in co-ordination with the facility as soon as it is noticed.</p>
10.	Submission of Annual Report	<p><b>Annual Report for the year 2019</b></p> <p><b>Submitted before due date:</b> }  <b>Submitted after due date:</b> } Yes (28/09/2020)</p>
11.	Compliance by Common Facilities (emission/discharge standards, barcoding, proper operation etc.)	<p><b>Frequency of conducting monitoring of CBWTF:</b></p> <p><b>Status of compliance of CBWTFs:</b></p> <p><b>No. of CBWTF complied: 1</b></p> <p><b>No. of CBWTF not complied: 0</b></p> <p><b>Action taken for non-compliance:</b> Incinerators meeting new standards, ETP standard achieved.</p>
12.	Compliance by Healthcare Facilities (Segregation, pre-treatment, on-site storage, barcoding and other provisions etc.)	<p><b>Frequency of conducting monitoring of HCFs:</b></p> <p><b>Status of compliance of HCFs:</b></p> <p><b>No. of HCFs complied:</b></p> <p><b>No. of HCFs not complied: 17 HCFs</b></p> <p><b>Action taken for non-compliance:</b> Rectified non-compliances</p>

Yours faithfully



**MEMBER SECRETARY**

## CHAPTER X

### COMPLIANCE STATUS ON HAZARDOUS WASTE MANAGEMENT RULES (OA 804/2017)

As per Annual Report in the whole state for the year 2019\_2020, total hazardous waste generation is 3, 14,488.2 TPA. 1617 industrial units are generating hazardous waste. In Kerala, there is 50,000TPA capacity common hazardous Waste Disposal facility is functioning at Ambalmugal, Ernakulam by Kerala Envio Infastructure Limited, . During 2019-20, 62,609.99T of hazardous waste was received and 55,809.89TPD was disposed. The following action is also being taken:

- Action is being taken to bring all ports under consent purview.
- Cotaminated sites have been identified and reported to CPCB
- Action is being take to conduct Environment audit in captive SLF and common Hazardous Landfill

#### 10.1 Format for providing information w.r.t. directions of the Tribunal dated 07/07/2020 in the matter of 804/2017 (April, 2020-September, 2020) by Chief Secretary

No.	Recommendations	Information required to submitted
A.	<b>Pertaining to Interim Report of Monitoring Committee</b>	
1.	SPCBs/PCCs shall ensure timely submission of annual returns by all occupiers and in case of non- compliances (i.e. for non- submission/after lapse of timeline) action may be taken in accordance with the provisions laid down under the HOWM Rules, 2016.	1) Total No. of operating hazardous and other wastes handling units: <b>1551</b> 2) How many hazardous or other waste generating units [of (i) above] have submitted annual returns by 30th June of preceding year: <b>607</b> 3) How many units [of (i) above] have submitted annual returns after 30th June of Preceding year: <b>313</b> 4) How many units [of (i) above] have not submitted annual return for preceding year: <b>626</b> 5) In how many units [of (iii) & (iv) above] action has been taken by SPCB? <b>471</b> <b>The Board ensures timely submission of annual returns by all</b>

		<p><b>occupiers and in case of non-compliances action is being taken against violators. During the said period due to COVID-19 pandemic some units could not submit annual returns due to closure of industries.</b></p>
2.	<p>SPCBs/PCCs shall prepare annual inventory report on hazardous and other waste generation and its management, as per CPCB's guidelines and ensure submission of same within stipulated timeframe as laid down under HOWM Rules, 2016.</p>	<p>Of the numbers of hazardous or other waste generating units, who have submitted annual returns, nos. of units are randomly verified, as per CPCB's guidelines, : <b>393</b></p> <p><b>The Board already submitted annual inventory of 2019-2020 to CPCB. Moreover action is being taken to get a complete inventory of all hazardous waste handling/ generating units in Kerala with the help of National Productivity Council, Chennai. The Board already conducted discussion with them and sought their detailed proposal covering technical and financial aspects.</b></p>
3.	<p>SPCBs/PCCs to ensure verification and reconciliation of closing of manifest document for all the cases in Hazardous waste handling/ generating units.</p>	<p>1) In how many units, verification of closing of manifest documents and reconciliation of the same were done by SPCB (during the said period). <b>237</b></p> <p>Of which, how many pertains to interstate movement and within the state?</p> <p><b>During the said period random verification was slowed due to COVID-19 pandemic, associated restrictions and closure of industries.</b></p> <p><b>The Board already initiated action. Action is being taken to evolve waste generation factor/ material balance study with the help of National Productivity Council, Chennai so as to aid in reconciliation of data and to check the authenticity of details furnished in the manifest. The Board already conducted discussion with them and sought their detailed proposal covering technical and financial aspects.</b></p>



4.	SPCBs/PCCs to ensure regular updation of website with respect to all enforcement actions along with details of industries and action taken thereof.	1) Whether website of SPCB has been updated w.r.t. all enforcement actions along with (a) details of industries, b) date of inspection including collection of effluent or other samples, (c) whether unit is compliant or not, (d) if non-compliant then action taken including the date of notice if any sent to defaulter and
		<p>Action taken pertaining to HOWM Rules: (Yes/No)</p> <p>Provide specific link of all enforcement action uploaded in Board's website.</p> <p>Provide details of defaulting units as per Table 1 given below.</p> <p><b><i>The Kerala State Pollution Control Board is in the process of revamping its online consent management software to enable the units for entering the data by waste handlers w. r. t. day wise record maintenance, manifest document, etc. as stipulated under the HOWM Rules, 2016.</i></b></p> <p><b><i>Identifying/tracking of non compliances can be incorporated in this and act upon the same. Further, camera at the facility and GPS based movement of hazardous or other wastes linked to the said software may also be very helpful in identifying violations. All enforcement actions can be viewed in this.</i></b></p>
4	Development of sectoral process based reasonable HW generation range/ environmental benchmarking/guidelines for HW recycling/utilization and approach for waste management hierarchy and submit the progress report on the same within 06 months to CPCB	<p>Provide progress made so far in this regard for each document (i.e. Sector based HW generation range/ environmental benchmarking/guidelines for HW recycling/utilization and approach for waste management hierarchy) If developed, please provide copy of the same.</p> <p><b><i>The Board already initiated action. Action is being taken to evolve waste generation factor/ material balance study/ recycling/utilization and approach for waste management with the help of National Productivity Council, Chennai. The Board already conducted discussion with them and sought their detailed proposal covering technical and financial aspects.</i></b></p>

6.	Board shall expedite the development of elaborate protocols to ensure enhanced level and frequency of enforcement and environmental monitoring of recycling/utilisation facilities	<p>Whether elaborate protocol for environmental monitoring of recyclers/utilizers has been developed? (Yes/No)</p> <p>If yes, provide frequency monitoring and sampling in terms of no. per month.</p> <p><b>Enforcement Framework for Effective Implementation of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 prepared. Circular dated 10.10.2017 of the Board is attached</b></p>
7.	Expedite conducting of environmental audit of common/captive TSDFs available in the State and submit the audit report to CPCB	<p>Provide progress made w.r.t. environmental audit of common/captive TSDFs.</p> <p>If action initiated, please provide ToR and copy of audit report (if completed) along with action taken on violations noticed if any, in this regard.</p> <p><b>The Board already initiated action. Action is being taken for conducting of environmental audit of common/ captive TSDFs available in the State with the help of National Institute of Interdisciplinary Science and Technology (NIIST), Pappanamcode, Thiruvananthapuram. The Board sought their detailed proposal covering technical and financial aspects.</b></p> <p><b>Discussion with them is also planned in a few days time. ToR will be developed accordingly.</b></p>
<b>B. Pertaining to Final Report of Monitoring Committee</b>		
	<p>Action point 15: Clearance of Waste Oil/Sludge from Ships: Concerned SPCBs/PCCs or Port Authorities of State/UT to grant/obtain necessary authorization to cover hazardous wastes generated from both normal port operations/activities and all ship generated wastes (MARPOL annexes) (e.g in case of used/waste Oil authorization for Cat. No. 5 and Cat. No. 3 of HOWM Rules, 2016). The same be also</p>	<ol style="list-style-type: none"> <li>1. Ports* and Containers by individual ICDs/CFCs (per day/month)</li> <li>2. Quantity of waste generated (MARPOL annexes) from per ship</li> <li>3. Category –wise details on quantity of HW generated and handled** by each of the Ports*/ICDs/CFCs during</li> </ol>

	covered in the annual report submitted as per HOWM Rules, 2016. (SPCBs/PCCs and Port Authorities: 05 months)	
2.	Action point 15: Clearance of Waste Oil/Sludge from Ships: SPCBs/PCCs shall ensure that all the ports (including minor ports), ICDs/CFSs have mandatory authorization as per HOWM Rules, 2016. The said authorization shall be granted by the SPCB/PCC after due scientific evaluation. (SPCBs/PCCs: 05 months)	<p>2019-20.</p> <ol style="list-style-type: none"> <li>Whether the HW generated/handled by Ports*/ICDs/CFCs have been reported by the SPCB/PCC in the annual inventory.</li> <li>No. of Ports*/ICDs/CFCs found violating provisions (manifest system, labelling/packaging/ records maintain, etc) of HOWM Rules, 2016.</li> <li>Action taken by SPCB/PCC against such violators. <ul style="list-style-type: none"> <li>*Ports includes all the major/minor and river ports.</li> <li>**Includes waste sent to recycler/utilizer/co- processor/disposal facility alongwith name of such facilities.</li> </ul> </li> </ol> <p><b><i>The Board had already communicated the order to Port Authorities and had conducted meeting with them. They are in the process of applying for the Board's consent. The Board's field officers are in continuous follow up with them. Bepore Port, Kozhikkode, Kollam Port and Azheekkal Port, Kannur have applied for consen/ authorization of the Board. Integrated Consent to establish was issued by the Board to Vizhinjam Port. It is not yet commissioned. Cochin Port, Ernakulam is in the process of filing application to the Board. Authorization shall be granted by the SPCB after due scientific evaluation.</i></b></p>
3.	Action point 18: Collaboration between regulating authorities: SPCBs/PCCs along with Customs and Port authorities to ensure regular interaction among themselves for better compliance of import and export related issues and management of ship wastes. (MoEF&CC, CPCB, SPCBs /PCC, Customs and Ports Authorities: On a regular basis)	<p>Number of interactive sessions/ workshops organized by the Board in this regard:</p> <p>Number of interactive sessions/ workshops attended by Board's officials apart from above.</p> <p>States/UTs which also have Minor ports/River ports/ICDs/CFCs</p> <p><b><i>The Board had already communicated the order to all concerned authorities and the Board's Member Secretary had conducted meeting with them to make them aware of the orders pertaining to them and the need for compliance with HOWM Rules, 2016.</i></b></p>

4.	<p>Action point 19: Availability of Waste Reception Facilities at ports:</p> <p>SPCBs/PCCs may coordinate with DG(S) and Port Authorities for implementation of the aforesaid notification for environmentally sound management and disposal of ship wastes. (SPCBs/PCCs: 05 months)</p>	<ol style="list-style-type: none"> <li>1. No. of ports having Waste reception facility.</li> <li>2. No. of Waste reception facilities authorized under HOWM Rules, 2016 along with details of the categories of hazardous &amp; other waste authorized for generation and management:</li> <li>3. Action taken by SPCB/PCC to ensure availability of waste reception facility as per Ministry of Shipping Notification.</li> <li>4. Category –wise details on quantity of HW generated and handled** by each of the Waste reception facility during 2019-20.</li> <li>5. No. of Waste reception facilities found violating provisions (manifest system, labelling/packaging/ records maintain, etc) of HOWM Rules, 2016. Action taken by SPCB/PCC against such violators.</li> </ol> <ul style="list-style-type: none"> <li>• <b><i>The Board had already communicated the order to Port Authorities and had conducted meeting with them. They are in the process of applying for the Board’s consent.</i></b></li> <li>• <b><i>The Board’s field officers are in continuous follow up with them. Beypore Port, Kozhikkode, Kollam Port and Azheekkal Port, Kannur have applied for consent/ authorization of the Board. Integrated Consent to establish was issued by the Board to Vizhinjam Port. It is not yet commissioned.</i></b></li> <li>• <b><i>Cochin port, Ernakulam is in the process of filing application to the Board. Beypore Port has Waste reception facility.</i></b></li> <li>• <b><i>Kollam Port and Azheekkal Port, Kannur don’t have Waste reception facility.</i></b></li> <li>• <b><i>Authorization shall be granted by the SPCB after due scientific evaluation. Waste reception facilities in the ports shall then be authentically documented.</i></b></li> </ul>
5.	<p>Action point 20: Authorization for the waste reception facilities and ports:</p> <p>SPCBs/PCCs shall ensure authorization is granted to Ports and Waste reception facility available at all ports and all the provisions of HOWM Rules, 2016 (i.e. authorization, manifest system, inventorisation etc.) are being</p>	<p>and ports:</p> <p>SPCBs/PCCs shall ensure authorization is granted to Ports and Waste reception facility available at all ports and all the provisions of HOWM Rules, 2016 (i.e. authorization, manifest system, inventorisation etc.) are being followed by Ports and Waste Reception Facilities. (SPCBs/PCCs : 05 months</p>

	followed by Ports and Waste Reception Facilities. (SPCBs/PCCs : 05 months)	
6.	<p>Action point 26: Display of information outside the factory gate: SPCBs/PCCs shall ensure that verification of installation/updation of display boards at all the Hazardous waste generating units on a continuous basis. (SPCBs/PCCs : 05 months)</p>	<p>i. Number of hazardous waste generating units in the state: <b>1551</b>  ii. Number of units installed display board: <b>932</b>  iii. Of (ii) above, how many has been verified by the Board: <b>358</b></p> <p><b><i>During the said period random verification was slowed due to COVID- 19 pandemic, associated restrictions and closure of industries.</i></b></p> <p>iv. Number of hazardous waste generating units not installed/updated display board: 434  Action taken by the board, in case of non-compliances observed:</p> <p><b><i>The Board ensures compliance with the Rules. Action has taken against violators. Notices/ reminders/instructions were issued to such defaulters. Follow up action is going on.</i></b></p>
7.	<p>Action point 27: Institutional Reforms: SPCBs/PCCs shall ensure that adequate manpower is available with the PCB/PCC, training shall be regularly provided with emphasis on scientific evaluation and management of hazardous waste.</p>	<p>i. Is adequate manpower available with SPCB/PCC: NO  ii. Steps taken to ensure adequate manpower is made available in SPCB/PCC and timeline for the same.</p> <p><b><i>The Board is in the process of filling the existing vacancies permanent staff. Now in the existing vacancies temporary staffs are being employed for the works to be carried out.</i></b></p> <p><b><i>No. of training programs organized by SPCB/PCC during FY-2019-20.</i></b></p> <p><b><i>In Kerala the most of the hazardous waste generating units are vehicle service stations where used oil and paint booth sludge are generated in small quantities. Two meetings to sensitise such units and to discuss the problems faced by such units for complying with the HOWM rules, 2016 were conducted with the authorities of such service stations at Head office of the Board.</i></b></p> <p><b><i>Moreover trainings were imparted to the local bodies at district levels and state level many times to sensitise them about the compliance of the Rules. During the said period i.e. April, 2020-September, 2020 no more meeting/ training could be conducted due to COVID-19 pandemic, associated</i></b></p>

		<p><b>restrictions and closure of industries.</b></p> <p>iv. No. of training programs attended by SPCB/PCC officials (which are organized by other agencies).</p> <ul style="list-style-type: none"> <li>a. <b>Training on “Analysis of pesticides and other organic chemicals in Environmental samples” at CSIR-IITR, Lucknow- one officer attended the same-in 2019</b></li> <li>b. <b>Training on “Effective management of hazardous waste including E-waste, co-processing and co-incineration” at Bangalore- one officer attended the same in 2019</b></li> <li>c. <b>Training on “Identification and assessment of contaminated</b></li> <li>d. <b>sites” at Gurugram, Haryana- two officers attended the same- in 2019</b></li> <li>e. <b>Training on “Accident Spill- Emergency Response and Environmental impact assessment- Future perspective” at CSIR-NEERI, Nagpur- one officer attended the same- in 2019</b></li> <li>f. <b>Training on “Hazardous Waste Management” by CSE, Delhi- two officers attended the same - in 2019</b></li> <li>g. <b>Webinar on “Hazardous Waste Management- Challenges and Remedies” by Punjab PCB- one officer attended the same- in 2020</b></li> </ul> <p><b>During the said period i.e. April, 2020- September, 2020 no more training could be attended due to COVID-19 pandemic, associated restrictions.</b></p> <p>*Please provide topic of the training programmes organised by Board and no. of officials attended the same</p>
8.	<p>Action point 27: Institutional Reforms:</p> <p>SPCBs/PCCs should have adequate laboratory infrastructure for analysis of HW parameters.</p>	<ul style="list-style-type: none"> <li>i. No. and list of Hazardous waste parameters for which facility for analysis is available with SPCB/PCC. Provide details as per format appended at Appendix-B.</li> <li>ii. Steps taken to provide adequate laboratory infrastructure for the remaining parameters in the SPCB/PCC and timeline for the same.</li> <li>iii. In case of non- availability of the infrastructure current practice of the SPCB/PCC for analysis of HW parameters.</li> </ul> <p><b>The Board’s Central Lab is being continuously upgraded for analysis of all HW parameters.</b></p> <p><b>In case of non- availability of the infrastructure for analysis of some HW parameters it is done through external laboratories.</b></p>

<p>Action point 27: Institutional Reforms:</p> <p>R&amp;D work shall be regularly carried out by the PCBs/PCCs either individually, in collaboration with other SPCBs/PCCs and expert technical Institutes/agencies. Continuous dissemination of information and awareness programs shall be carried out by the SPCBs/PCCs. (SPCBs/PCCs : 05 months)</p>	<p>Action point 27: Institutional Reforms:</p> <p>R&amp;D work shall be regularly carried out by the SPCBs/PCCs neither individually, in collaboration with other SPCBs/PCCs and expert technical Institutes/agencies. Continuous dissemination of information and awareness programs shall be carried out by the SPCBs/PCCs. (SPCBs/PCCs : 05 months)</p> <p>If not carried (a) and (b), above, please provide the details on action plan proposed for compliance to said activities.</p> <p><b><i>The Board proposes to set up an R &amp; D wing. The Board promotes the cleaner technology through awards also to various establishments as part of Environment Day celebrations.</i></b></p>
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CHAPTER XI COMPLIANCE STATUS ON E-WASTE MANAGEMENT								
Sl. No.	Challenge/ Activities	Stakeholder responsible for implementation	Action	Current Status	Desirable level of compliance in terms of statues	Gap between current status & desired timelines	Proposal attending the gap with timelines	Name, designation, contact number of designated officer for Compliance to the provisions under statute
a.	Checking of informal trading dismantling and recycling	SPCBs/PCCs/ District Administration	SPCBs/PCCs/ in coordination with District Administration has to carry out quarterly drive for checking of this activity	The DLMC constituted as per OA 606/2018, has been entrusted to overlook the matter on E-waste Rule  An informal working scrap unit identified at Vengola, Ernakulam and closure order was issued.	From the informal sector, around 250 T of e-waste disposed to registered recyclers.	E-waste from informal sector is to be disposed through registered recyclers	2020	Smt. Premalatha Environmental Engineer 9447975725
					Authorized dismantling and recycling facility are to be provided in the State	Authorized dismantling and recycling facility are to be provided in the State	<ul style="list-style-type: none"> <li>Action is being done to have dismantling unit at Kuttipuram, Malappuram by Clean Kerala Company, Government undertaking. They initiated EOI for dismantler unit installers. Preliminary land development</li> </ul>	



							work started.	
							<p>1) From the informal sector, around 250 T of e-waste disposed to registered recyclers by Eco Friendly Solutions, Erattupetta, Kottayam and they have also submitted the details namely item name, code, quantity and registered recycler</p> <p>3) Industrial sites for setting up of facilities are being identified.</p>	
b.	Facilitate collection and disposal of e-waste	SPCBs/PCCs / District Administration/ CPCB	State Government to formulate mechanism for collection and for incentivizing settling up of recycling facilities					

c.	Governance frame work for monitoring compliance	SPCBs/PCCs / District Administration/ CPCB	Monitoring to be ensured at city/ district and State levels for which nodal officers (State environmental secretary, district collector, CMD/ Commissioners ) to be designated. Time Frame - Three ( 3) months					
d.	Capacity building at district/State / CPCB level	SPCBs/PCCs / District Administration/ CPCB	Special workshops to educate functionaries in government/ NGOs be run over one year	1)	Action is being done to have dismantling Government undertaking.			
e.	IEC plan be firm ed up and executed	SPCBs/PCCs / District Administration/ CPCB	State Government to firm up IEC plan for education public at large about the system of collection, incentive structure and					

			facilities for recycling. The IEC plan to be executed over one year					
f.	Strengthen system of enforcement	SPCBs/PCCs / District Administration/ CPCB	Quarterly review of violations and enforcement actions at city/district/ state level and quarterly reports to be filed with CPCB.	Collection centers operated by various brand owners were inspected in Thiruvananthapuram district, based on the violation notices and reported to CPCB and subsequently CPCB revoked the EPR authorization issued. The matter is being followed up.				
				Brand owners/producers while applying for EPR authorization have to submit action plan. But the Urban Directorate in the State Government and State PCBs are not aware about the action plan. Hence the action plans have to be endorsed by the State Government. The EPR authorization re instated by CPCB.	Action plan by brand owners is to be endorsed by State Government and SPCB	Not submitted the action plan by producers/ brand owners	Central Pollution Control Board is to instruct the producers in this regard. Notices issued to all EPR authorizers' and from the replies received it is understood that the collection centers provided by the producers are not adequate to collect all their products from the users. The CPCB was addressed to introduce buy back/take back system with declared appreciable price to the returned goods at least by major brand	

							owners.	
				Annual reports are not regularly submitted by the producers/ brand owners.		Not submitting the annual report by producers/ brand owners	2020	
				Inventorisation of E-waste as per the schedule in the E-waste Rule is a difficult task and the Board taken steps to outsource the inventory work. NIIST, TVM has been engaged to prepare the inventory.			2020	
				Annual reports for the year 2018 based on the available information was submitted to CPCB.				

## **CHAPTER XII**

### **COMPLIANCE STATUS ON CONSTRUCTION AND DEMOLITION WASTE RULES**

#### **12.1 Action taken**

- For implementation of Construction and Demolition Waste Management Rules, 2016 , Local Self Government Department, Urban Affairs, Panchayath Directorates, Rural Development Department, etc were addressed regarding action to be taken to implement Construction and Demolition Waste Management Rules, 2016.
- Notice for display at Construction and Demolition sites was communicated to Local Self Government Department, Urban Affairs Department, Commissionerate of Rural Development, Panchayat Directorate, Suchitwa Mission (Local Self Government Department's agency for implementation of sanitation and wastes management policy in the State) in compliance to Central Pollution Control Board's direction dated 13.12.2017.
- All Regional Offices and District Offices of the Board were addressed for including guidelines and dust mitigation measures as per Construction and Demolition Waste Management Rules, 2016 in consent regime.
- All Corporation/ Municipalities were addressed on 03.08.2019 with respect to implementation of Construction and Demolition Wastes Rules, 2016 and for identifying suitable sites for setting up of the storage, processing and recycling facilities for Construction and Demolition Wastes (Schedule(1)).
- Local Self Government Department was intimated vide letter dated 16.08.2019 to take the duties vested with the local authority as per the rule No.6 and schedule I as per Rule 7 (1).

#### **12.2 Status on compliance of orders of the Hon'ble Supreme Court in Civil Appeal No. 4784-85 of 2019 on Maradu**

- As per the orders of the Hon'ble Supreme Court in Civil Appeal Nos. 4784-4785 of 2019 (Arising out of SLP ( C) Nos. 4227-4228 of 2016) which aims of the protection of the ecology of Vembanad Lake renowned for its bio-diversity, five high rise buildings within the locality of Maradu Municipality in Ernakulam District, were demolished on 11th and 12th of January, 2020.
- The process of demolition was completed successfully as per schedule, ensuring the safety of the residents in the neighborhood through out the entire ordeal.
- The Kerala State Pollution Control Board conducted pre and post monitoring in the area.
- For management of Construction and Demolition Waste, M/s Prompt enterprises was entrusted by the Maradu Municipality for the removal of concrete debris and M/s Prompt enterprises pointed out a site at Kumbalam for setting up Construction and Demolition Waste processing facility. On receiving the application from M/s Prompt Enterprises, The Kerala State Pollution Control Board had conducted enquiry and issued authorisation vide PCB/HO/C&D WASTE RULES/VOL.II/17/19 dated 28.01.2020 subject to conditions to set up and operate 500 T/d of Construction and Demolition Waste processing facility in 56 acres of land.
- The Annual Report for the year 2019-2020 on Construction and Demolition Waste Management Rules, 2016 was submitted to CPCB on 23.09.2020.

**Format of Annual Report to be submitted by the State Pollution Control Board/ Committees to the Central Pollution Control Board**

1. Name of the State/ Union territory : Kerala
2. Name & address of the State Pollution Control Board/ Pollution Control Committee : Kerala State Pollution Control Board, Pattom.P.O., Thiruvananthapuram-695 004
3. Number of municipal authorities responsible for management of municipal solid wastes in the State/ Union territory under these rules : 87-Municipalities  
6-Corporations

4. A Summary Statement on progress made by municipal authorities in respect of implementation of **Schedule III** :

The action was initiated for implementing the Schedule III. The Local Self Government (DC) Department vide G.O.(P) No. 65/2018/LSGD dated 13.09.2018 notified the State Policy on Solid Waste Management in terms of Rule II and 15 of Solid Waste Management Rules, 2016; wherein it is mentioned in it regarding the Construction and Demolition Waste Management Rules, 2016 that every waste generator shall store separately the Construction and Demolition Waste , as and when generated, within the premises and inform the local government for its disposal as per Construction and Demolition Waste Management Rules, 2016. Also it is mentioned that the local government authorities shall transport Construction and Demolition Waste as per the provisions of the Construction and Demolition Waste Management Rules, 2016 .Local Self Government Department was intimated vide letter dated 16/08/2019 to take the duties vested with the local authority as per the rule No.6 and schedule I as per Rule 7 (1).

As per the orders of the Hon'ble Supreme Court in Civil Appeal Nos. 4784-4785 of 2019 (arising out of SLP ( C) Nos. 4227-4228 of 2016) which aims the protection of the ecology of Vembanad Lake renowned for its bio-diversity, five high rise buildings within the locality of Maradu Municipality in Ernakulam District, Kerala were demolished on 11th and 12th of January, 2020. The process of demolition was completed successfully as per schedule, ensuring the safety of the residents in the neighborhood through out the entire ordeal. The Kerala State Pollution Control Board conducted pre and post monitoring in the area. On 22.01.2020, the Hon'ble National Green Tribunal Suo Moto registered O.A.No. 12/2020 (SZ) on the basis of a news item in Mathrubhoomi daily dated 19.01.2020 relating to the inspection of the demolition sites by the Chairman and Member Secretary of the State Level Monitoring Committee constituted by the Hon'ble NGT as per O.A.No.606/2018 and the Tribunal ordered to form a Joint Committee consisting of the Secretary, Maradu Municipality; Kerala State Pollution Control Board, District Collector,Ernakulam and Sub Collector, Kochi to inspect the area of the demolished high rise buildings in Maradu Municipality. Hence in accordance with the Order, a committee having the above mentioned members were constituted vide order no. PCB/HO/EE4/NGT/O.A.12/2020 (SZ) dated 29.01.2020. For management of Construction and Demolition Waste after demolition, a service provider namely M/s Prompt enterprises was entrusted by the Maradu Municipality for the removal of concrete

debris. M/s Prompt enterprises pointed out a site at Kumbalam for setting up Construction and Demolition Waste processing facility. On receiving the application from M/s Prompt Enterprises, the Kerala State Pollution Control Board had conducted enquiry and issued authorisation vide PCB/HO/C&D WASTE RULES/VOL.II/17/19 dated 28.01.2020 subject to conditions to set up and operate 500 T/d of Construction and Demolition Waste processing facility in 56 acres of land. The Annual report submitted by the Maradu Municipality is also submitted as Annexure.

5. A Summary Statement on progress made by Municipal authorities in respect of implementation of Schedule IV

: There is no Schedule IV attached to Rules.

  
**MEMBER SECRETARY**

**CHAPTER XIII**  
**COMPLIANCE STATUS ON BATTERIES (MANAGEMENT AND HANDLING) RULES, 2001**

For implementation of Batteries(Management & Handling) Rules, 2001, instructions were issued to the officials of various departments including KSRTC, Kerala Telecom Corporation, Railway, KSEB, Chief Port Master General's Office, Ministry of Defence, various battery manufactures, Bulk consumers, etc. The Board's district offices were also instructed to enforce the Rules. As per information from the DOs more battery dealers/ distributors came to the registration purview of the Board. The Annual Report for the year 2019-2020 on Batteries (Management & Handling) Rules, 2001 was submitted to CPCB on 27/08/2020 .

**ANNUAL REPORT ON IMPLEMENTATION OF BATTERY (MANAGEMENT AND HANDLING) RULES, 2001**  
**(FOR THE PERIOD OF OCTOBER 2018 TO SEPTEMBER 2019)**

**A. MANUFACTURERS**

S L. N o	Numb er of manuf acture rs	Number of Manufactur er s Submitted Returns	Quantity of batteries sold		Quantity of used batteries send to Authorized Recyclers		Number of Collecti on Centres	Numb er of dealer s	Numbe r of registe red dealer s	Remark s
			Nos	Weight (kg)	No s	Weight (kg)				
1	17	12	8969 0	2878700	9848	506522	5 4	159	121	

**B. ASSEMBLERS**

SL. No .	Numb er of Assembl ers	Number of Assemblers Submitted Returns	Quantity of batteries assembled and sold		Quantity of used batteries send to Authorized Recyclers		Numbe r of Collecti on Centre s	Numb er of dealer s	Numb er of registe red dealer s	Remark s
			Nos.	Weight (kg)	No s.	Weight (kg)				
1	4	3	782	13186	45 4	4126	5	5	5	

**C.IMPORTERS**

SL. No .	Nu mb er of Imp orte rs	Number of Importe rs Submitt ed Returns	Quantity of batteries sold		Quantity of used batteries send to Authorized Recyclers		Numbe r of Collecti on Centre s	Numb er of deale rs	Numb er of regist ere d deale rs	Remark s
			Nos.	Weight (kg)	N o s.	Weight (kg)				
1	8	8	12858	76208	-	-	-	117	112	



**D. RE-CONDITIONERS**

SL.No.	Number of Re-conditioners	Number of Re-conditioners Submitted Returns	Quantity of batteries Re-conditioned and sold		Quantity of used batteries send to Authorized Recyclers		Number of Collection Centres	Number of dealers	Number of registered dealers	Remarks
			Nos.	Weight (kg)	Nos.	Weight (kg)				
1	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	

**E. BULK CONSUMERS**

SL.No.	Number of Bulk consumers	Number of Bulk consumers Submitted Returns	Quantity of batteries sold		Quantity of used batteries send to Authorized Recyclers		Remarks
			Nos.	Weight (kg)	Nos.	Weight (kg)	
1	38	35	18372	1206166.8	7039	328233	

**F. AUCTIONEERS**

SL.No.	Number of Auctioneers	Number of Auctioneers Submitted Returns	Quantity of batteries sold		Quantity of used batteries send to Authorized Recyclers		Remarks
			Nos.	Weight (kg)	Nos.	Weight (kg)	
1	1	1	32	384000	-	-	

**G. DEALERS**

SL.No.	Total Number of Dealers	Sale of LB* in Unit No.	Total collection of LB* in Unit No.	Number of Dealers submitted Returns	Remarks
1	452	420454	475561	163	

**H.RECYCLERS**

Sl. No.	Number of Authorized Recyclers	Capacity of Recyclers (MT/Year)	Number of Recyclers submitted Annual Returns	No./ Weight of used batteries received from and recycled							Remarks
				Manufacturer	Assembler	Importer	Re-conditioner	Dealer	Bulk consumer	Wholesaler	
1	2	25.475	2	14.15 T	0	0	0	9.5 T		1602.35 T	

**CHAPTER XIV**  
**COMPLIANCE STATUS ON NOISE POLLUTION**

Sl. No	Content	Current Status	Desirable	Gap	Time
1.	No. of stations for Ambient Noise Monitoring	Nil	Proposed 4 Nos. of Stations	Setting up of Ambient monitoring station	2020
2.	No. of stations in Industrial Zone	Nil		Setting up of Ambient monitoring station	-
3.	No. of stations in commercial Zone	Nil		Setting up of Ambient monitoring station	2020
4.	No. of stations in Residential Zone	Nil		Setting up of Ambient monitoring station	-
5.	No. of stations in Silence Zone	Nil		Setting up of Ambient monitoring station	2020
6.	Compliance of Ambient Standards ( No. of Stations) Industrial Zone Commercial Zone Residential Zone Silence Zone	Noise mapping was done and it was observed that junctions are non complying	Setting up of Ambient monitoring station	Setting up of Ambient monitoring station	2020-
7.	Identification of Hot Spots	Yes in Thiruvananthapuram, noise mapping was done and it was observed that junctions are non complying	Noise mapping in other cities	Noise mapping in other cities	2020
8.	Designated Authorities defined as per Noise Rules (Y/N) Details to be provide)	Yes  District Magistrate, Commissioners of Police / Superintendents of Police and Deputy Superintendents of Police (Sub Divisional Officers) were designated as per G.O No. 111/2002 the Home (F) Department			
9.	Has Methodology been prepared for granting permission for installation of Public Address System ( Y/N) ( Details to be provide)	Yes		Police department is granting the permission for public address system	-
10.	Has Methodology been prepared for redressal of complaint on noise pollution ? ( Y/N)	Yes		• Pollution Control Board for noise due to various	-

	( Details to be provided)			<p>activities such as operation of machinery</p> <ul style="list-style-type: none"> <li>• District Magistrate and Police Department are the authorities for ensuring ambient noise standards with respect to public redressal system.</li> <li>• Support to the Police Authority is being given by the Board on request basis for the measurement of the sound level</li> </ul>	
11.	No. of Police Stations equipped with sound level meter	-	Sound level meter	Sound level meters	2020
12.	No. of Police Stations having officers trained as per noise Pollution Rules by SPCBs/PCs.	<ul style="list-style-type: none"> <li>• Specification of sound level meter and the list of leading suppliers were given to the State Police department as per order dated 25-6-2019 in OA 681/2018</li> <li>• Discussion done with ADGP regarding training and training will be conducted on getting the training schedule and reply awaited.</li> </ul>	-	Training will be given by the Central Pollution Control Board in December, 2020. Action is being done	2020
13.	Has protocol been developed for taking appropriate action against the defaulters?	-	Development of protocol by Police department	Development of protocol by Police department	2020
14.	No. of cities in which Noise Mapping has been done ( if applicable) #	Study on noise has been done for Thiruvananthapuram	Noise mapping in other cities	Noise mapping in other cities	2020

**CHAPTER XV**  
**STATE LEVEL MONITORING COMMITTEE AND DISTRICT LEVEL MONITORING COMMITTEE**  
**(OA 606/2018 & OA 360/2018)**

In compliance with the Order dated 16/01/2019 of the Hon'ble NGT on in O.A. no. 606/2018, the State Level Monitoring Committee was constituted under the Chairmanship of Hon'ble Justice A.V. Ramakrishna Pillai, Former Judge, High Court of Kerala, and Member Secretary, Kerala State Pollution Control Board as the Member Secretary of the Committee. Other members are Additional Chief Secretary - Local Self-Government Department; Additional Chief Secretary - Health, Family Welfare Department; and the Principal Secretary - Environment Department. The Committee held 12 meetings from February 2019 to February 2020. In accordance with SLMC meeting decision, training for secretaries and officials of Corporation and Municipalities with population more than 1 lakh was conducted at Thiruvananthapuram. Training for remaining secretaries and officials of municipalities and panchayat was conducted in concerned districts in the month of January and February 2020.

The Chairman and the Member Secretary of the State Level Monitoring Committee inspected all the 14 districts in the State for streamlining the action of newly formed District Level Monitoring Committees headed by the District Collector. The sites of Tirur –Ponnani River, Malappuram, Brahmapuam dumping yard, Kalamassery dumping yard and Periyar were also inspected. Reports were submitted to the NGT. Meetings done with the Boards Officers Regional Officers and District Office for the compilation of the Report.

**15.1 Details of SLMC, DLMC Meeting up to November-2020**

Subject	District	No. of Meetings
<b>SLMC Meeting- Total meetings</b>		<b>60</b>
<b>DLMC Meeting</b>	Thiruvananthapuram	7
	Kollam	4
	Pathanamthitta	4
	Alappuzha	9
	Kottayam	1
	Idukki	3
	Ernakulam	2
	Thrissur	2
	Palakkad	5
	Malappuram	9
	Kozhikode	4
	Wayanad	3
	Kannur	3
	Kasargod	4

## 15.2 Main actions of DLMC

District	Actions
Kasargod	<ol style="list-style-type: none"> <li>1) Awareness programmes on environmental laws were conducted.</li> <li>2) Initiation of action against defaulters</li> <li>3) Directed to prevent waste water discharge to public drains leading to water bodies.</li> <li>4) Issued notice on fail to control waste dumping on roads and drains.</li> <li>5) Started assessing environmental compensation.</li> <li>6) Gave regular instructions to implement the rules and NGT orders.</li> <li>7) Conducted regular inspections to the waste processing/collection facilities.</li> <li>8) Carried out surveys to assess the waste management by local bodies</li> </ol>
Kannur	<ol style="list-style-type: none"> <li>1) District Environmental Plan has prepared for time bound implementation of all Rules</li> <li>2) Mining and Geology department shall be included in DLMC to ensure the safe disposal of quarry wastes</li> <li>3) Work of Harithakarmasena is become more effective and reached 90% achievement in most of GP</li> <li>4) Consent condition added in Consent to Operate from PCB to ensure the use maximum quantity of plastics in the tar mixing plants</li> <li>5) Steel Plates and glasses are introduced issued to schools by the local bodies</li> <li>6) Bottle booths and RRF units are started in most of the local bodies</li> <li>7) New rendering plant will be commissioned within 1 months in Mattanur Industrial, Iritty taluk in addition to the existing plant at Pappinissery.</li> <li>8) Complaints raised by local people on functioning of the existing rendering plant are resolved and started to function in full swing.</li> <li>9) Raid has conducted on weekly basis for arresting plastic and other banned materials from establishments and penalty imposed</li> <li>10) Introduced an awarding system for the best eco-friendly, pollution free Panchayath and municipality in Kannur districts</li> <li>11) Training program arranged for the secretaries of the local bodies in the district on environmental laws</li> </ol>

Kozhikode	<ol style="list-style-type: none"> <li>1) DLMC link created in the website of the district administration</li> <li>2) Constitution of technical squad to find out illegal connections to drain and canal and to find out major polluters and to impose spot fine. Technical committee conducted surprise inspections to about 101 industrial units on the sides of Canoli canal and Kallayi river and issued notice to 60 units which are illegally discharging untreated effluent into water bodies and the matter is being followed up.</li> <li>3) Subcommittee constituted for social auditing and monitoring and action has been initiated.</li> <li>4) Initiation of action against defaulters</li> <li>5) Squad is formed for inspecting tourism area and to impose spot fine to defaulters and action is initiated.</li> <li>6) Action is being initiated to form a complaint cell</li> <li>7) Action has been taken to document activities of door to door collection of segregated solid waste arranged by local bodies and the same will be audited by DLSA</li> <li>8) Direction issued and meeting convened with DMO and district officers of all health care facilities including homeo, Ayurveda, veterinary, AYUSH, lab, clinic for the effective implementation of BMW Rules</li> <li>9) Action taken to speed up setting up of common BMW facility at Kinalur in Kozhikode</li> <li>10) Action is initiated by the Kozhikode for conducting meeting with brand owners of plastic, sanitary napkin</li> <li>11) Training programmes conducted at block level, ward level and at Municipality level</li> </ol>
Malappuram	<ol style="list-style-type: none"> <li>1) Expanded DLMC with full chorom of members as per direction of SLMC Chairman.</li> <li>2) Continuing with social auditing (Grievance management) by all concerned departments.</li> <li>3) 100% compliance of three Model Panchayats in the District in respect of environmental norms implemented successfully.</li> <li>4) All municipalities have implemented Door to Door collection of segregated waste.</li> <li>5) All municipalities have implemented Door to Door collection of segregated waste.</li> <li>6) The action plan was prepared, submitted and approved for rejuvenation of polluted stretch of Tirur-Ponnani River at Tirur. Implementation level completed more than 90 percentage. Surveying by the revenue department is to be done.RRC meetings are being conducted to monitor the monthly progress.</li> <li>7) All urban local bodies shall prepare action plans and implement bio mining of legacy waste. Action pending with Malappuram Municipality.</li> <li>8) Collected compiled and submitted District Environmental Plan and got it approved by District Collector for submission.</li> <li>9) Lot numbers of cleaning programs were carried out in all the local bodies through employment schemes and Governments Special cleaning drive.</li> <li>10) Action on complaints regarding illegal disposal of wastes on a District level is implemented and the activity is continuing.</li> <li>11) Regular plastic ban inspections were conducted and fine were imposed on offenders by PCB. Fine of 40,000 rupees collected by Board officials. Authorised officials from local bodies and from office of sub-collector are also conducting inspections and levying fine.</li> <li>12) Monetary fines for illegal dumping was collected by local bodies.</li> <li>13) District Collector directed to levy fine from all local bodies which</li> </ol>

	<p>are not showing progress in installation and functioning of MCF, RRF etc and rules implementation. As an initial step, issued notices to 19 local bodies on the subject and they reported compliance later.</p> <p>14) Six squads were formed on district level. Board officials conducted inspection at printing press to collect sample materials for identification. Environmental engineer had given a practical training to the implementing officers and anti defacement squad regarding easy methods to identify the plastics/ polymer materials used , to differentiate flex material from PE,PP etc.</p> <p>15) Applications for starting chicken waste rendering/ composting plants are considered after studying the pollution control facility, land availability,distance to nearest residence etc( minimum 100 m distance ) under red category. This reduced the number of complaints regarding unethical practices of illegal transportation and dumping of chicken wastes inside the District</p> <p>16) Directions issued to all local body secretaries and District medical officer to take action all Non- complying health care facilities to apply for Boards consent and install and function STP as per necessity. Continuing efforts to achieve 100 percent compliance.</p> <p>17) Directed all hazardous waste producing units to comply with the directions as per NGT OA 829. Conducted inspections to verify compliance Other Actions</p> <p>18) As part of stringent implementation of Environmental Rules wrt OA 606/2018, Technical assistants from Pollution Control Board District Office collected inventory list of industries from local bodies and from that, conducted and completed.</p> <p>19) Industrial survey in 29 Panchayats of the District. (We are having 94 Panchayats and 12 Municipalities in total).</p> <p>20) Completed BMW inventorization and Batteries inventorization.</p> <p>21) Industrial survey with ENVI CLEAN app completed and uploaded in the site for 1034 industries.</p> <p>22) All the local bodies were directed to comply with the timely directions on implementing the Environmental Acts &amp; Rules, to direct to apply all units under their jurisdiction for obtaining Boards mandatory consent for functioning.</p> <p>23) Training programmes conducted on the implementation of Environmental laws &amp; how to use ENVI CLEAN app for SWM surveying for Secretaries of Local bodies on 29/10/2019.</p> <p>24) Training conducted on restoration of water bodies ,for all local bodies having polluted stretches 20.02.2020.</p> <p>25) Directed Suchitwa mission to train and educate people through FM radio and conduct classes in Educational institutions regarding waste management. Also entrusted Suchitwa Mission to have a discussion with representatives of Hotel &amp; Restaurants Association to implement a pricing system and award based on best practices on waste management. Complied with the directions and the activities are continuing</p>
Wayanad	<p>1) Action taken for introducing alternate materials for plastic products</p> <p>2) Steps taken for clean drive</p> <p>3) Steps taken for finding out suitable materials for processing of waste</p> <p>4) Regular plastic ban inspections were conducted and fine were imposed on offenders by PCB and action taken for levying of fine.</p> <p>5) Training to the Local bodies on environmental laws conducted.</p> <p>6) Conducted workshops for home stay, hotel and restaurants, wood industries,workshops etc.</p>
Palakkad	<p>1) DLMC link created in the website of district administration</p>



	<p>2) Action plan prepared, actions are progressing, monthly progress is reported.</p> <p><b>3) Plastic shredded wastes to be used in Bituminous plant and for Road Tarring was implemented.</b></p> <p>4) Several cleaning programs were carried out in all local bodies through employment schemes &amp; special cleaning drive</p> <p>5) The DLSA inspected shops, malls and hotels in various areas and they have found that plastic waste is burned in open places at early morning. Lack of proper facilities for collection of MSW and weak legal actions are the causes, DLSA reported</p> <p>6) Regular plastic ban inspections were conducted and fine were imposed on offenders by Pollution Control Board twice. Many local bodies and office of sub-collector have also enforced the ban</p> <p><b>7) Fines levied and reported by local bodies.</b></p> <p>8) 100% compliance in the model panchayaths has been implemented.</p> <p>9) All seven municipalities implemented door to door collection</p> <p><b>10) Palakkad Municipality has allocated Rs.50.00 Lakhs in 2021-2022 for Biomining of legacy waste</b></p> <p>11) Training programmes on environmental laws were conducted for the local bodies</p>
Thrissur Ernakulam Idukki Pathanamthitta	<p>1) Inspections carried out for the compliance of Government order on use of single use plastic and fine was imposed on violators.</p> <p>2) Awareness programmes on environmental rules done for local bodies</p>
Alappuzha	<p>3) For the DLMC meetings, Secretary and nodal officer from the local body are to be attended. Nodal officer is to arrange awareness programmes</p> <p>4) For Alappuzha Municipality, tender procedure completed for STP in General Hospital and for Women and Children Hospital, application for STP submitted under Amruth Project</p> <p>5) Action is initiated for setting up FSTP, slaughter house in Alappuzha Municipality and action also initiated for identifying land for FSTP at Chunkam.</p> <p>6) For Cherthala Municipality, DPR for FSTP submitted for funding and the matter is being taken up.</p> <p>7) Action initiated for collection, segregation and treatment of waste from public in Cherthala Municipality.</p> <p>8) For Chengannur municipality, Haritha Karma Sena is functioning in 16 wards</p> <p>9) Action is being taken to provide FSTP.</p> <p>10) For Harippad municipality, Haritha Karma Sena is functioning in all wards</p> <p>11) Action is being taken to provide FSTP and also for the collection of segregated waste.</p> <p>12) Action is being taken to provide FSTP in Mavelikkara and Kayamkulam Municipalities.</p> <p>13) Inspections carried out for the compliance of Government order on use of single use plastic and fine was imposed on violators.</p> <p>14) Awareness programmes on environmental rules done for local bodies</p>
Kollam	<p>1) Inspections carried out for the compliance of Government order on use of single use plastic and fine was imposed on violators.</p>

	2) Awareness programmes on environmental rules done for local bodies
Thiruvananthapuram	<ol style="list-style-type: none"> <li>1) Action is being initiated for preventing the discharge of waste water and solid waste into water bodies</li> <li>2) Action is being initiated to provide waste water treatment facilities at Poojappura Central Jail and SAP camp, Peroorkada</li> <li>3) Action taken to regulate pollution due to solid waste in Medical College, Thiruvananthapuram</li> <li>4) Action being taken on waste disposal by Thiruvananthapuram Corporation canteen in the University Men's Hostel premises Palayam</li> <li>5) Directions issued to the Executive Engineer LSGD and Chief Executive Engineer, PWD to use 20% shredded plastic</li> <li>6) Inspections carried out for the compliance of Government order on use of single use plastic and fine was imposed on violators.</li> <li>7) Police was instructed to register case based on petitions from LSGIs, Irrigation, Civil Society Organisation. Also instructed to take legal steps against polluters of water bodies</li> <li>8) Awareness programmes on environmental rules done for local bodies</li> </ol>

### 15.3 Order dated 26-9-2019 in OA 360/2018

The Department of Environment of all States may collect such District Environment Plans of their respective states and finalize the State Environment Plan covering the specific thematic area in Para. 7 including the information as contained in Para-8 and template of model by CPCB, The action for preparation of State's Environment Plan shall be monitored by the respective Chief Secretaries of the State.

District Environmental Plan was submitted by all districts. Action is being taken to prepare State Environment Plan.

## CHAPTER XVI

### AMBIENT AIR QUALITY (O.A. 681/2018)

#### 16.1 Ambient air quality in the State

The Board is having 35 manual ambient air quality monitoring stations and nine continuous ambient air quality monitoring stations (CAAQMS stations) across the State. In CAAQMS, parameters namely SO<sub>2</sub>, NH<sub>3</sub>, CO, O<sub>3</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> are being monitored. New SAMP station was established at Moovattupuzha in Ernakulam district. As per the report prepared on the status of ambient air quality in the eight districts as per OA 259/2017, the overall results of the analysis reveal that in all the eight cities, the concentration of SO<sub>2</sub> and NO<sub>x</sub> were found to be within 80 microgram/m<sup>3</sup>. RSPM and SPM values are within the limit of 100micro gram/m<sup>3</sup> and 60 micor gram/m<sup>3</sup> in all manual monitoring stations. In the case of CAAQMS stations, all parameters are within the prescribed stanadards except in the case of Vytilla wherein NO<sub>x</sub>, CO and PM values showed exceedance for a few days.

#### 16.1.2 Real time ambient air quality stations at public places

Ambient air quality data of 8 real time ambient monitoring stations in the State located at the following places:

1. Thiruvananthapuram-Plamood (Capital of Kerala)
2. Thiruvananthapuram-Kariyavattom (University of Kerala)- connected to CPCB server
3. Ernakulam- Eloor (Industrial Hub of the State)
4. Ernakulam-MG Road (Ernakulum- Central City)
5. Ernakulam- Vytilla Bus Stand (Ernakulum- Commercial Area)
6. Kozhikode Palayam Bus Stand (Kozhikode- Commercial Area)
7. Kollam,Polaythodu – connected to CPCB server
8. Kannur,Mini Civil Station – connected to CPCB server

#### 16.1.3 Ambient air quality stations:

Apart from the real time ambient air quality monitoring stations, the Board monitors the ambient air quality at prominent stations under the NAMP (National Ambient Air Quality Monitoring Programme) and SAMP (State Ambient Air Quality Monitoring Programme). New SAMP station was established at Moovattupuzha in Ernakulam district.

#### A. Ambient air quality stations under National Ambient Air Quality Programme

Sl. No.	Location	District	
1.	COSMO Politian Hospital, Pattom	Thiruvananthapuram	NAMP
2.	SMV Govt. Model High School over bridge	Thiruvananthapuram	NAMP
3.	Filatex, Veli	Thiruvananthapuram	NAMP

Sl. No.	Location	District	
4.	Kerala State Pollution Control Board, District Office, Plamood, Thiruvananthapuram	Thiruvananthapuram	NAMP
5.	Krishna Leela Tower Kadapakkada Kollam	Kollam	NAMP
6.	Chavra KMML Guest House,Chavara, Kollam	Kollam	NAMP
7.	Kerala State Pollution Control Board District Office Pathanamthitta	Pathanamthitta	NAMP
8.	Tiruvalla	Pathanamthitta	NAMP
9.	D C Mills Pvt Ltd Pathirapilly Alappuzha	Alappuzha	NAMP
10.	Kerala State Pollution Control Board District Office Thondankualgara, Alappuzha	Alappuzha	NAMP
11.	Kerala State Pollution Control Board V-Publishers Building Kottayam	Kottayam	NAMP
12.	MRF Ltd, Vadavathoor,Kottayam	Kottayam	NAMP
13.	Ernakulum (South Over Bridge)	Ernakulum	NAMP
14.	Ernakulum MG Road	Ernakulum	NAMP
15.	Kuttipadam	Ernakulam	NAMP
16.	Vytila FCI-OEN ConnectersErnakulam	Ernakulum	NAMP
17.	Irumbanam, Thripunithara	Ernakulum	NAMP
18.	Womens Apparel Park Industrial Area Kalamassery	Ernakulum	NAMP
19.	Travancore Kochin Chemical Udyogamandal	Ernakulum	NAMP
20.	Building No.EP.III-348 Methanam, North Eloor,	Ernakulum	NAMP
21.	Poonkunnam Thrissur	Thrissur	NAMP
22.	Peringadoor, Thrissur	Thrissur	NAMP
23.	SEPR Refractories India Pvt Ltd Kanchikode West Palakkad	Palakkad	NAMP
24.	Synthite Industries Ltd, Kakkenchery, Malappuram	Malappuram	NAMP
25.	Nallalam Diesel Power Project Nallalam Kozhikode	Kozhikode	NAMP
26.	Women and Children Hospital Complex Kottaparamb Kozhikode	Kozhikode	NAMP
27.	SulthanBatheryNearGramapanchayath Office Wayanad	Wayanad	NAMP
28.	Kalpetta, wayanad	Wayanad	NAMP

**B. Ambient air quality stations under State Ambient Air Quality Programme**

Sl. No.	Location	District	
1.	Kannur	Kannur	SAMP
2.	Mangattuparambu	Kannur	SAMP
3.	Kasargod	Kasargod	SAMP
4.	Kanjanagad	Kasargod	SAMP
5.	Thodupuzha	Idukki	SAMP
6.	BEML , Kanjikode	Palakkad	SAMP
7.	Moovattupuzha (Data from October Onwards)	Ernakulam	SAMP

**16.1.4 Ambient air quality data map is available in the website**

<https://keralapcb.glensserver.com/public/graph.html> is the link on which the data map can be accessed.

Monthly reports of NAMP and SAMP for pollutants measured upto January 2020 were published in KSPC's website, [www.keralapcb.nic.in](http://www.keralapcb.nic.in) under the head 'News'.

The data of CAAQM stations are available in website, [www.keralapcb.nic.in](http://www.keralapcb.nic.in) homepage – Online Continuous Real-time monitoring data and AQI data are uploaded on daily basis in KSPCB's website, [www.keralapcb.nic.in](http://www.keralapcb.nic.in) under the head, 'News'.

**16.1. 5 Water and Air quality directory**

Kerala State Pollution Control Board published Water and Air Quality Directory, 2018 on 5th June 2019.

**16.2 Online Continuous Real Time Monitoring**

In Kerala, online continuous real time monitoring system is provided for the monitoring of ambient air and for the emission from stack provided in the chimney. The data is available in the website-ocmms.nic.in.

**16.2.1 Online Continuous Real Time Monitoring Data Of Industries/Public Places (Status as on 30.11.2020)**

**16.2.1 Active**

SL NO.	Site Name	City	Industry	Site Status	Exceedence	Vendor
1	KSPCB Trivandrum Plamood Station	Trivandrum	Public Location	Active	Exceedence Detected	Ecotech

2	Adani Vizhinjam Port Private Limited	Vizhinjam	Port	Active	Exceedence Detected	
3	Malabar Cements Ltd_Chertala	Chertala	Cement	Active	No Exceedence	GLens
4	The Canara Paper Mills Pvt. Ltd	Changanacherry	Pulp And Paper	Active	No Exceedence	Vasthi
5	The Travancore Cement Ltd	Nattacom	Cement	Active	No Exceedence	Adage
6	Cochin Cements Ltd	Kottayam	Cement	Active	No Exceedence	SWAN
7	The Fertilisers And Chemicals Travancore Ltd (Fact) Udyogamandal Complex- Petrochemical Plants	Ernakulam	Petrochemicals	Active	No Exceedence	Yokogawa
8	Kozhikode Diesel Power Project Kerala State Electricity Board Limited	Kozhikode	Power Plant	Active	Exceedence Detected	AICPL
9	Hindustan Insecticides Limited	Eloor	Pesticide	Active	No Exceedence	GLens
10	Greenland Paper Mills Ltd	Kollam	Pulp And Paper	Active	No Exceedence	STEAM
11	Prodair Air Products India Pvt Ltd	Ernakulam	Chemical	Active	Exceedence Detected	Yokogawa
12	KSPCB Calicut Palayam Station	Calicut	Public Location	Active	No Exceedence	GLens
13	TMS Leathers	Edayar	Tannery	Active	Exceedence Detected	Global Technology
14	M/S Nitta Gelatin India Ltd	Koraty	Drugs And Pharmaceuticals	Active	No Exceedence	AxisNano
15	Travancore Cochin Chemicals Limited	Eloor	Chlor Alkali	Active	No Exceedence	Yokogawa
16	KSPCB Ernakulam Vyttila Station	Ernakulam	Public Location	Active	No Exceedence	GLens
17	The Fertilisers And Chemicals Travancore Ltd (Fact) Udyogamandal Complex-Fertiliser Plants	Eloor	Fertilizer	Active	No Exceedence	Yokogawa
18	The Fertilisers And Chemicals Travancore Ltd (FACT) Cochin Divison	Ambalamedu	Fertilizer	Active	No Exceedence	Yokogawa
19	Kairali Steels And	Kanjikode	Iron And Steel	Active	No	STEAM

	Alloys Private Limited				Exceedence	
20	Kunnath Paper Mills Ltd	Meenkaradam	Pulp And Paper	Active	No Exceedence	Chemtrols
21	Prince Rollings Private Limited	Pattambi	Iron And Steel	Active	No Exceedence	GLens
22	Malabar Cements Ltd	Palakkad	Cement	Active	No Exceedence	ESA

### 16.2.2 In active

Action has been taken to make it active.

In active						
SL NO.	Site Name	City	Industry	Site Status	Exceedence	Vendor
1	RPC Paper Mills	Punalur	Pulp And Paper	Site Inactive	No Exceedence	SWAN
2	Hindustan Newsprint Ltd	Kottayam	Pulp And Paper	Site Inactive	No Exceedence	DNP
3	Brahmapuram Diesel Power Plant	Kakkanad	Power Plant	Site Inactive	No Exceedence	AxisNano
4	Cochin Special Economic Zone Authority	Cochin	CBMWTF	Site Inactive	No Exceedence	GLens
5	NTPC Limited	Alappuzha	Power Plant	Site Inactive	No Exceedence	Logic Ladder
6	KINFRA Small Industries Park	Mazhuvannoor	CETP	Site Inactive	No Exceedence	
7	Gramox Paper and Boards Ltd	Muvattupuzha	Pulp And Paper	Site Inactive	No Exceedence	AxisNano
8	Amrita Institute of Medical Sciences and Research Centre	Ernakulam	Public Location	Site Inactive	No Exceedence	AxisNano
9	P P S Steels Pvt Ltd	Kanjikode	Iron And Steel	Site Inactive	No Exceedence	GLens
10	Southern Ispat & Energy Ltd	Palakkad	Iron And Steel	Site Inactive	No Exceedence	
11	KINFRA Techno Industrial Park	Kakkanchery	CETP	Site Inactive	No Exceedence	AxisNano
12	KINFRA Textile Centre	Thaliparamba		Site	No	

In active						
SL NO.	Site Name	City	Industry	Site Status	Exceedence	Vendor
				Inactive	Exceedence	
13	Indian Naval Academy Sewage Treatment Plant	Payyanur	STP	Site Inactive	No Exceedence	ForbesMarshall

### 16.2.3 Partial

Partial Connected						
SL NO.	Site Name	City	Industry	Site Status	Exceedence	Vendor
1	KSPCB Eloor Station	Eloor	Public Location	Partial Connectivity	No Exceedence	GLens
2	Rubber Park India Private Limited	Ernakulam	CETP	Partial Connectivity	No Exceedence	AxisNano
3	The Kerala Minerals And Metals Ltd	Kollam	Iron And Steel	Partial Connectivity	No Exceedence	ESA
4	BPCL Kochi Refinery	Kochi	Oil Refinery	Partial Connectivity	Exceedence Detected	Chemtrols;ESA; Yokogawa
5	Hindustan Organic Chemicals Limited	Ernakulam	Petrochemicals	Partial Connectivity	No Exceedence	GLens;Vasthi
6	Apollo Tyres Limited	Kalamassery	Manufacturing	Partial Connectivity	No Exceedence	GLens;Yokogawa
7	KSPCB Ernakulam MG Road Station	Opp Seematti MG Road Cochin	Public Location	Partial Connectivity	No Exceedence	GLens
8	Indian Medical Association Goes Ecofriendly	Palakkad	CBMWTF	Partial Connectivity	Exceedence Detected	Vasthi

### 16.3 Air quality seminar

Kerala State Pollution Control Board conducted the Air quality seminar on 5th June 2019.

### 16.4 Electric vehicle policy

Electric vehicle policy was developed for the State. The first charging station for electric vehicle is in operation in the Secretariat.

### 16.5 Proposal for strengthening of the air quality stations

The proposal submitted by the Kerala State Pollution Control Board to the Central Pollution Control Board on strengthening of the air quality stations is as follows:



**16.6 Draft format for status of CAAQMS / NAMP Monitoring station under SPCB's /PCC's –reg.**

Sl. No.	Population as per census 2011	Name of the State	Number of Towns/cities	Name of Towns/cities	Manual ambient air quality monitoring stations		Continuous ambient air quality monitoring stations		Remarks
					Existing Stations	Required Stations	Existing Stations	Required Stations	
1.	1,00,000- <5,00,000	Kerala	5	Kozhikode	Commercial /Residential-2	1- Background	1-Commercial	1- Residential	<p>CAAQMS station is ready for inauguration at Thrissur.</p> <p>Setting up of CAAQMS stations at Palakkad and Alappuzha is included in Annual Plan 2021-22.</p> <p>Proposal submitted to CPCB vide letter no. PCB/HO/SEE-1/EC-PROJECTS/2019 dated 24.9.2020 for sanctioning fund for four numbers of CAAQMS from EC fund.</p> <p>Supply Order issued for setting up CAAQMS, one each at Kollam and Thrissur. Action initiated for setting up CAAQMS at Palakkad with financial support from industries. One CAAQMS will be installed in Alapuzha during 2019-20</p>
				Kollam	Commercial /Residential-2	1- Background	Nil	1- Residential (Proposed 2019-20)	
				Thrissur	Residential-1	1- Background 1- Residential / Commercial	Nil	1- Residential (Proposed 2019-20)	
				Alappuzha	Commercial /Residential-2	1- Background	Nil	1- Residential (Proposed 2019-20)	
				Palakad	Industrial-2	1- Background 2- Residential / Commercial	Nil	1- Residential (Proposed 2019-20)	
									Supply Order

2.	5,00,000- <10,00,000	Kerala	2	Thiruvananthapuram	Residential /Commercial-3 Industrial-1	1- Background	1- Traffic	1- Residential (proposed) 1- Commercial	Issued for setting Up one CAAQMS at Thiruvananthapuram with 50% fund from the CPCB under project setting up of CAAQMS in million plus cities and State and capitals.
				Kochi	Residential-5 Industrial-3	1- Background	1-Traffic 1Commercial 1-Industrial	1- Residential	CAAQMS installed at Eloor, MG Road and Vyttila

## **CHPATER XVII**

### **INDUSTRIALLY POLLUTED CLUSTERS (OA 1038/18)**

#### **17.1 Industrially Polluted clusters (OA 1038 of 2018)**

The order dated 13.12.2018 in O.A.No. 1038 of 2018 by the Hon'ble NGT is based on the CEPI score of Greater Cochin Area done in 2009. The CEPI assessment was done in 2009 by the Central Pollution Control Board (CPCB) in collaboration with IIT Delhi as part of their comprehensive environmental assessment of 88 industrial clusters in the Country.

Out of these 88 industrial clusters, 32 industrial clusters having CEPI score in between 60 and 70 were categorized as severely polluted area (SPA). Further, 43 industrial clusters in 16 states having CEPI score of 70 & above were identified as Critically Polluted Area(CPA). Greater Kochi Area (GKA) was identified in Kerala. The CEPI score for the area as reported by Central Pollution Control Board was 75.08, and the GKA subsequently termed as CPA.

During 2011, CPCB again estimated CEPI score as per the monitoring data of 2011 with same criteria pollutants as considered by IIT Delhi and the score was 57.39 and the moratorium imposed for developmental activities in the Greater Kochi Area as CPA was lifted vide office memorandum No. J- 11013/5/2010-1A II (I) dated 23.05.2011 by Ministry of Environment and Forest.

After lifting the moratorium, monitoring was conducted in the year 2013 by CPCB but not published. The CEPI score using the third party monitoring data was 45.29 in the year 2013.

While CPCB had conducted monitoring in 2018, the Board also had engaged an accredited agency as third party for the monitoring and the score obtained was 44.68 and comes under the category of OPA (Other Polluted Area) and however action was taken to prepare action plan.

The Chief Environmental Engineer, Regional Office, Ernakulam was instructed to take urgent action to finalize a time bound action plan with regard to the identified polluted industries clusters in coordination with KSIDC. Central PB requested some clarification and additional information regarding CEPI area (Greater Cochin) and instruction has been given on 20.10.2020 to Regional Office, Ernakulam to submit the required data to CPCB.

## CHAPTER XVIII

### MODEL PLANTS IN KERALA

#### 18.1 Model Solid Waste Management

##### 18.1.1 Door to Door Collection provided by the local bodies

Haritha Karma Sena was formed and they are engaged in door to door collection of the segregated waste. The members in the Harithakarma Sena are registered and they are provided with identity card, uniform.



*Haritha Karma Sena (Green Army)*

## Woman Empowerment



*Kudumbasree sanitation group collecting segregated waste from town*

### 18.1.2 Community Facility provided by local bodies

Local bodies provided community facilities namely aerobin, material collection facility and material recovery facility, swap shops. Photos of the some of the facilities provided are given below:



Figure 18.2 Attingal Municipality – Windrow Composting



Figure 18.3 Community Level Biogas plant



മാറ്റി സ്ഥാപിക്കാവുന്ന തുമ്പുർമുഴി എയ്റോബിക് ബിന്നുകൾ

Fig. 18.4 Thumboor muzhi Plants (Aero bins)



Fig. 18.5 Organic Waste Converter



Solid Waste  
Management  
Unit, Adat,  
Thrissur



Community  
Level Solid  
Waste  
Management  
Unit  
(Akathethara  
Palakkad Dist.)

**Fig. 18.6 Community level solid waste management unit**



RF, Perumbavur Municipality



Shredded Plastic at Adimaly Grama Panchayath



Plastic Shredding unit of Adimaly Grama Panchayath



Plastic shredding unit at Panamanna, Chittur Thathamangalam Municipality

**Fig. 18.7 Resource Recovery Facility**



## Material/Resource Recovery Facility (MRF/RRFs)



Fig. 18.8 Resource Recovery Facility

## Baling machine



Fig. 18.9 Resource Recovery Facility

## Shornur Municipality - Plastic Processing Unit



Fig. 18.10 Plastic Shredding unit in Shornur Municipality

## Clean City in Wayand :Sulthanbathery





### 18.1.3 Solid Waste Management in Techno Park, Thiruvananthapuram



**Fig. 18.11 Feeding arrangement in the biogas plant**



**Fig. 18.12 Biogas plant in TechnoPark**



**Fig. 18.13 Biobins in Techno Park**



**Fig. 18.14 Bio Bin**



**Fig. 18.15 Material Collection Facility at Technopark**

## **19.1 Model Sewage and septage plants**

### **18.2.1 Septage treatment plant at Willingdon island, Kochi, Kerala**

Kochi Corporation is having septage treatment plants at Brahmapuram and Willingdonisland, Kochi. The treatment plant consists of Upflow Anaerobic Sludge Blanket Reactor, Moving bed biofilm reactor, and clarifier. UASB reactor takes less space compared to other anaerobic reactors like Anaerobic baffle reactor and thus land cost can be reduced. UASB reactor is to be maintained properly and for that adequate maintenance cost is required.



**Fig.18.16 Septage treatment plant at Willingdon Island, Kochi, Kerala**



**Fig. 18.17 Moving Bed Bio Reactor in the Septage treatment plant, Willingdon Island**



**Fig.18.18 Septage collection tank**

### **18.2.2 DEWATS system in a slum area, Chathanad, Alappuzha, Kerala**

Swachh Survekshan 2020, the central government's annual survey on cleanliness under SBM, recognised Alappuzha Municipality as the best small city in 'Innovations and Best practices'. This achievement came to the town for its decentralised wastewater treatment system (DEWATS) implemented at Municipal Colony, Chathanad. This project is also notable for several other features not captured within this ranking - a collaboration between academia, government and civil society, a novel decentralised sanitation planning paradigm, and environmental justice for one of the most marginalised groups in Alappuzha.

DEWATS system was provided in a slum area, Chathanad in Alappuzha, Kerala. The system consists of Anaerobic baffle reactor, planted gravel filter. Waste water from the houses in the slum area is collected through pipe line and then it enters the anaerobic baffle reactor and then it is passed through planted gravel filter and treated sewage is discharged into drain.



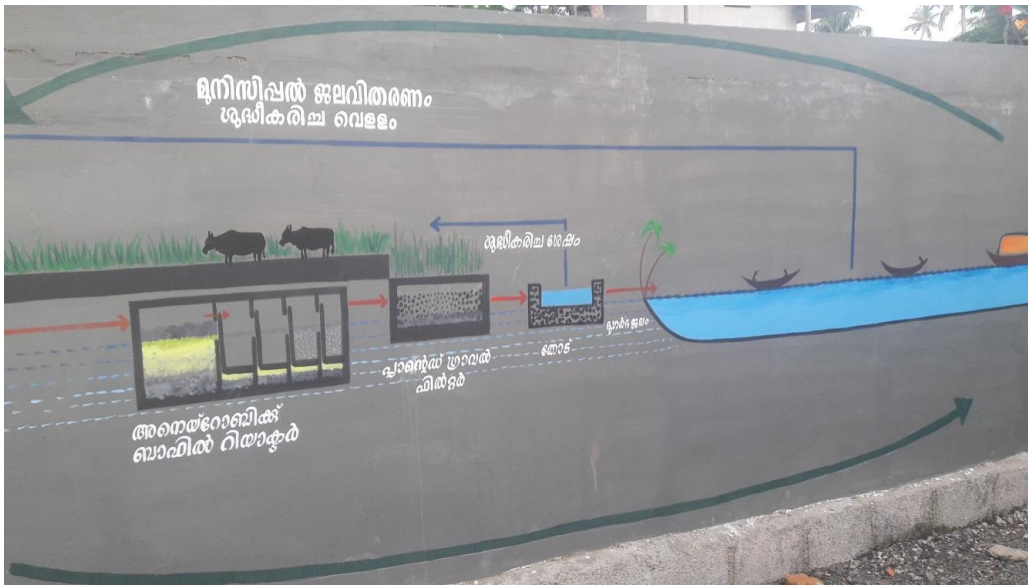


Fig.18.19 DEWATS system in a slum area at Chathanad, Alappuzha



Fig.18.20 Planted gravel filter in DEWATS system in the slum area at Chathanad



**Fig.18.21 Manholes in the pipe lines**

Along with Inspiration (an architecture firm from Kochi, and a member of CDD, i.e Consortium for DEWATS Dissemination) as a technical partner, CANALPY set out to tackle the issue. By mobilising finance through CSR from KMML (Kerala Metals and Minerals Limited) the goal of improved sanitation was divided into 3 parts:

- 1) Construction of individual toilets for each household
- 2) Designing and constructing a decentralized wastewater treatment system to treat black and grey water
- 3) Constructing an aerobic composting unit to deal with biodegradable waste

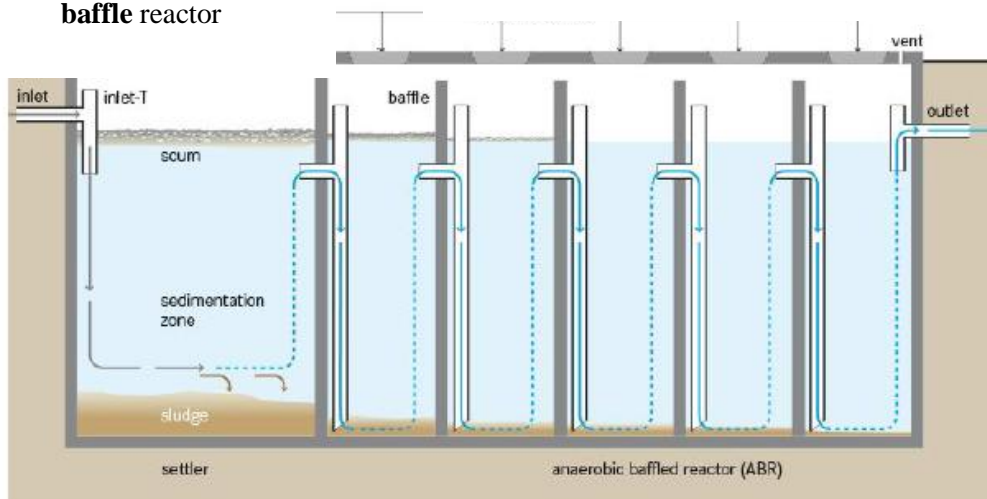
Since land constraints prevented construction of septic tanks under each toilet, the wastewater is brought to a decentralized system (sized appropriately) where it is treated through an anaerobic baffle reactor system. The final treatment occurs through a phytoremediation system after which it is let out to the chathanad canal.



**Fig.19.22 The anaerobic baffled reactor**



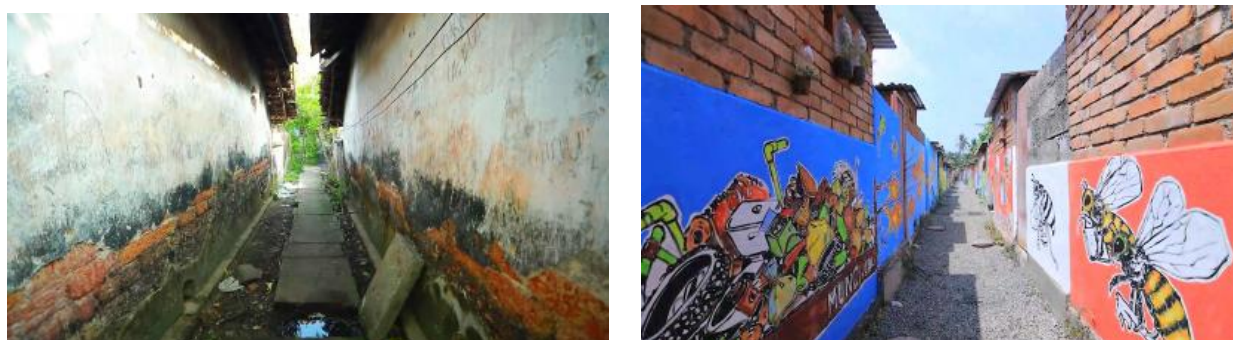
**Fig.19.23 The phytoremediation area**



**Fig.18.24 Section of the anaerobic baffled reactor**

The entire system is designed to be as low maintenance as possible, to avoid costs which might have to be borne by the community in the future. Almost entirely gravity fed, there is just one electric pump in the entire system. It also does not use any chemical or electrical methods to treat the wastewater. The other interventions included - converting the rundown public toilet into a reading room, constructing an aerobic composting unit for biodegradable waste, and beautification of the entire colony with paintings on the walls.

The transformation of the colony is quite remarkable. Two residents are now employed for maintenance of the system, and they take great joy and pride in their improved facilities. There is an implicit monitoring from the side of the residents to ensure that the colony and surroundings now stay clean.



**Fig.18.25 The same area before and after construction of DEWATS system in a slum area**



**Fig.18.26 The newly constructed aerobic unit and the refurbished public toilet**

### **18.2.3 Common Sewage treatment plant at Muttathara, Thiruvananthapuram, Kerala**

Thiruvananthapuram Municipal Corporation presently comprises an area of 141.74 sq. km of which mainly the core city area is covered by piped sewerage system aided by pumping stations. The common sewage treatment plant was commissioned in November 2013. Extended Aeration with Return Activated Sludge Process is used in STP. The installed capacity is 107 MLD and only 80 MLD is reaching the plant. Though the common sewage treatment plant is operated properly, there is escape of sewage into the water bodies through drains by bypass of sewage from inadequate sewage pumping stations, inadequate manholes and old pipelines in the old sewage network mainly blocks A and B.

The expansion of sewer network and rehabilitation of old sewer lines are still going on. The laying of sewer pipeline is a time consuming process, costly and creates problem to the public during construction activities. There would be overflow problems due to sewage in the houses especially in the low lying area. It is very difficult to find out the point of bypass of sewage from the sewer system. There is also provision for treating septage in this common sewage treatment plant and this facility can be availed through online system operated by Thiruvananthapuram Corporation. The construction cost and operation cost are high for common sewerage treatment plant. The cost of construction of sewerage system is also very high.



**Fig. 18.27 Location of Muttathara sewage treatment plant**

### **18.3 Rendering plants for chicken**

In Kerala, there are about rendering plants for treatment of chicken wastes generated in chicken stalls. The map showing the location of rendering plants is given in Fig. 18.23. In these plants, chicken waste is converted to meal for fish etc. In the plant established at Kozhikode, the main feature of this facility is the storage of chicken wastes in refrigerators in chicken stall and transportation of the same in refrigerated vehicle and thereby preventing the emanation of bad odour at chicken stall and during transportation. Chicken stall having agreement with the rendering plant shall only be issued consent from the Board. It is reported that Rs. 50,000 has been given by the company to the local body.

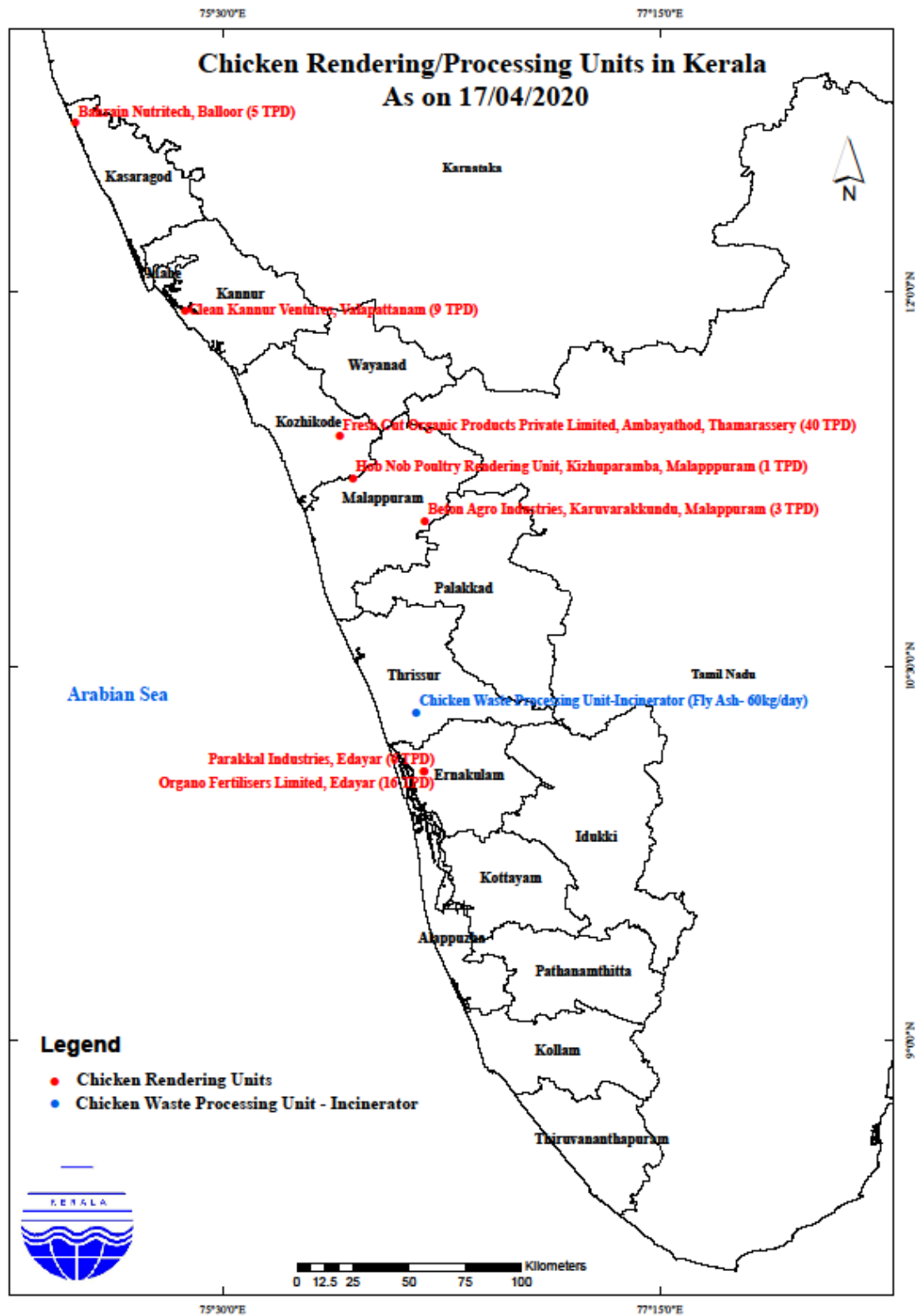


Fig. 18.28 Map of chicken rendering plants in Kerala

## 18.4 Bio-medical waste treatment

### 18.4.1 Common bio-medical waste treatment facility at Palakkad

Common bio-medical waste of 55.8 TPD treatment facilities is in operation in Palakkad. It consists of incinerators and autoclaves.



Fig. 18.29 Common Bio-medical waste treatment facility of IMAGE at Palakkad





**Fig. 18.30 Facilities provided at Common Bio-medical waste treatment facility of IMAGE at Palakkad**



#### **18.4.2 Collection and disposal of unused medicines from houses**

**Collection and disposal of unused medicines from houses** were initiated by Chemists and Druggist Association and Drugs Controller (PROUD programme) in Thiruvananthapuram Corporation. Around 200 bins were provided in front of medical shops in Thiruvananthapuram Corporation. The first load of collected waste of 5T has been flagged off from Thiruvananthapuram to biomedical waste treatment facility on 1-10-2018. Action is being taken to have this collection programme in other parts of the State. The scope for getting fund from manufacturers, producers and brand owners as per EPR is also looked into.

#### **18.5 Common Hazardous Waste Landfill at Ambalamedu**

Common Hazardous Landfill situated at Ambalamedu is operated by the Kerala Enviro Infrastructure Limited.



## **Tube light destroyer at HW land fill at Kerala Enviro Infrastructure Limited, Ambalamedu, Ernakulam**



### **18.6 E-wastes**

Clean Kerala Company is the company set up the Government. They are collecting plastic waste and electronic waste. Plastic waste is used for road tarring by local self government and PWD.

From the informal sector, 19 T of e-waste disposed to registered recyclers by Eco Friendly Solutions, Erattupetta, Kottayam on 9-10-2019 and 15-10-2019 to registered recyclers through PRO, RLG India who got approval from Central Pollution Control Board. They have also submitted the details namely item name, code, quantity and registered recycler to the Board.



**GOVERNMENT OF KERALA**  
**Abstract**

Environment Department – Blanket ban on single use plastic in the state with effect from 01.01.2020- orders issued.

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**Environment (B) Department**

**G.O.(MS) No.6/2019/Envt.**

**Dated, Thiruvananthapuram: 27/11/2019**

Read: 1. G.O(Rt) No.134/2018/Envt dated 12.12.2018

2. Expert Technical Committee Report.

**ORDER**

The consumption of single use plastic items and its irresponsible usage in the State, especially plastic carry bags, straws, plastic papers, sheets used for food packaging in hotels are mostly ending up in streams, rivers, other water bodies and road sides making even recycling impossible and has reached an alarming state posing environmental as well as health hazards. Identifying the threat, many States in the country have already imposed ban on these items and Government of India is exhorting the State Government to control the usage of single use plastic items. In the above context and to identify the plastic items to be brought into the ambit of ban , an Expert Technical committee was constituted as per the GO read as first paper above and the committee submitted report to Government as per the 2<sup>nd</sup> paper read above. The Expert Technical Committee recommended complete ban on some items and partial ban on certain other items. The Technical Committee report clearly identified the benefits and success rate of plastic ban in the States of Maharashtra and Tamil Nadu where the consumption has been reduced by around 70% showing the positive impact of ban on these items.

2. Government have examined the matter in detail. Being convinced of the need for banning single use plastic in the State, Government hereby issues the following order:

3. Complete ban on single use plastic is imposed in the State with effect from 01.01.2020.

a) No person or company or entity or industry shall manufacture, transport, store, sale

or use of any plastic products classified as, one-time use or other chlorinated plastic products as mentioned in the table below, from 1<sup>st</sup> January, 2020, within the territory of the State of Kerala.

Sl. No.	Products
1	Plastic carry bags irrespective of thickness
2	Plastic sheets (sheet used as table spread), cling film
3	Plates, cups and decorative materials made of thermocol/Styrofoam
4	Single use plastic utensils like cups, plates, dishes, spoons, forks, straw, stirrer
5	Plastic –coated items like paper cups, plates, bowl, carry bags
6	Non woven bags, plastic flags, plastic bunting
7	Plastic water pouches, plastic juice packets
8	PET/PETE bottles of drinking water of capacities less than 300 ml.
9	Garbage bags (plastic)
10.	PVC flex materials
11	Plastic packets.

4. Plastic carry bags and other single use plastic products used for the following purposes shall be exempted:-

- i) Plastic products manufactured exclusively for the purpose of Export against any export order in a plastic industry.
- ii) Plastic products used for medical purposes and medical equipments.
- iii) Plastic products made from compostable plastic bearing a label 'compostable' and confirming to the Indian Standard IS or ISO 17088: 2008 titled as specification for "Compostable Plastic" as defined in the Plastic Waste (Management and Handling) Rules, 2016

5. All District Collectors, Sub Divisional Magistrates, Officers authorized by the Kerala State Pollution Control Board, Secretaries of all Local bodies and any other authority or officer authorized by the Central Government u/s 19 of the Environment (Protection) Act 1986, shall strictly monitor the implementation of these directions and file complaint before the appropriate judicial forum to take cognizance of the offense as per the provisions of the Environment (Protection) Act, 1986, in case of any contravention of any of these directions.

6. Any contravention of any of the provisions of these directions if found shall be

reported to the Sub Divisional Magistrate or Officer of the Kerala State Pollution Control Board in their respective jurisdictions. Any article manufactured, sold, transported, stored or used by any person, company, entity or industry if found in violation of these directions shall be seized forthwith and will be handed over to the Sub- Divisional Magistrates/Officer of the Kerala State Pollution Control Board, of the respective jurisdiction for taking appropriate action.

7. The Secretaries of all Local Self Government Institutions, Sub Divisional Magistrates and the authorized officers under Kerala State Pollution Control Board shall impose Rs. 10,000/- as fine to any manufacturer, shopkeeper, vendor, wholesaler, retailer, trader or any other persons who violates any of the provision of the above directions. If such person is found in violation of any of the above mentioned directions for the second time, it is a directed to impose a fine of Rs. 25,000. If the violation is found repeated by such person, the Secretaries of all the Local Self Government Institutions and the authorized officers under Kerala State Pollution Control Board are directed to impose a fine of Rs. 50,000/- and to issue closure order to such shop/manufacturer from carrying out any such activity thereafter in such premises.

8. Kerala State Beverages Corporation, KERAFED, MILMA, Kerala Water Authority are bound to comply with the principles of Extended Producers Responsibility with regard to the bottle and pouches sold through them which includes the payment towards taking the bottles and pouches back from the public.

9. MoEF vide notification dtd.08/04/2016 directed under Rule 11(i) of Solid Waste Management Rules 2016, that 5% of the plots in the industrial areas/parks should be set apart for waste recovery/recycling facility. This needs to be enforced in the State as well . For setting up such waste treatment plants, the land shall be provided at nominal cost.

10. Industrial units manufacturing biodegradable plastic bags shall be encouraged by Department of Industries in lieu of ban on the plastic bags.

11. Kerala State Pollution Control should take necessary steps to make the public aware of the Government Order.

(By order of the Governor)

**Dr. ASHA THOMAS IAS**

**ADDITIONAL CHIEF SECRETARY**

To

1. The Secretary, Ministry of Environment and Climate Change, Govt of India
2. All the District Collectors
3. All the Department Heads
4. All Heads of Public Sector Units /Autonomous bodies
5. The Secretary to Governor, Raj Bhavan, Thiruvananthapuram
6. The Secretary, Legislative Assembly, Thiruvananthapuram
7. The Secretary, Kerala Public Service Commission
8. The Registrar, Kerala Administrative Tribunal (including covering letter)
9. The Registrar, Kerala High Court, Ernakulam
10. The Registrar, Kerala Lokayuktha, Thiruvananthapuram
11. The Member Secretary, State Planning Board, Pattom, Thiruvananthapuram
12. The Secretary, State Information Commission, Thiruvananthapuram
13. The Registrar, Kerala/Calicut/CUSAT/Kannur/Mahatma Gandhi Universities
14. The Registrar, Kerala Agriculture University, Mannuthy, Thrissur
15. The Registrar, Sree Sankaracharya Sanskrit University, Kalady P.O, Ernakulam
16. The Registrar, Kerala University of Health and Allied Science, Thrissur – 680596
17. The Registrar, Kerala Veterinary & Animal Husbandry Science University, Pookode, Wayanad
18. The Registrar, Kerala University of Fisheries and Ocean Studies, Panangad, Kochi
19. The Member Secretary, Central Pollution Control Board
20. The Member Secretary, State Pollution Control Board
21. The Managing Director, Clean Kerala Company
22. Executive Director, Suchitwa Mission
23. CIPET (Institute of Plastic Technology), Kochi
24. Kerala Plastic Manufacturers Association
25. All Depts in Government Secretariat (to give direction to all institutions under their control)
26. General Administration (SC) Department
27. Stock File/Office Copy (Envvt.B2/198/2018-Envvt)

Copy to:-

1. Private Secretary to Chief Minister
2. Private Secretary to Chief Secretary
3. PA to Principal Secretary

Forwarded/By Order

Section Officer



GOVERNMENT OF KERALA  
Abstract

Environment Department – Blanket ban on single-use plastic (disposable plastic) in the State of Kerala w.e.f 1.1.2020 issued vide G.O(MS)6/2019/Env dt 27.11.2019- Modifications and detailed clarifications -Orders issued

=====  
Environment (B) Department

G.O.(Ms) No.7 / 2019/Envt.

Dated, Thiruvananthapuram: 17.12.2019

Read:

1. G.O(MS) 6/2019-Envt dt 27.11.2019
2. Notification Number S.O. 152 (E) dated 10.02.1988, issued by Govt. of India

ORDER

Right after the inception of Plastic Waste Management Rules , 2016 the State Government have imposed strict restriction on the use and sale of plastic carry bags less than 50 microns to facilitate collection and recycle of such plastic. State Government have already taken all possible steps with regard to setting up of facilities for collection, segregation and disposal of all kinds of wastes including Plastic Waste. But the uncontrolled and irresponsible usage of plastic have been posing environmental as well as health hazards. The plastic items are mostly ending up in rivers and water bodies making even recycling impossible. The ecological system and specifically the marine ecology are disturbed. The grim situation was never been more evident than the after flood situation in Kerala witnessing heap of plastic bottles/debris reaching shores from sea and lakes. The alarming situation has reached a level where the trans generational equality is threatened. The menace of plastic is also a well documented one and with the general sentiment against plastic, more than ten states have already banned the manufacture, storage, sale and use of single use (disposable) plastic items. Government of India is also exhorting State Governments to come up with innovative steps to minimize the use of Single use Plastic.

2. Numerous cases were being filed before the National Green Tribunal and High Court by many NGOs and individuals praying for direction to take steps to ban single use plastic. Especially in OA 606/2014 filed by Almitra Patel the NGT directed to phase out the use of PVC/flex items. A WPC 5636/2016 was filed by All Kerala River Protection Council on the same and the High Court have been specific directing State Government to consider steps to phase out plastic especially Single use (disposable plastic) items.

3. As per Section 23 of the Environment Protection Act 1986, the Central Government have issued a Notification No.S.O-152(E) dt 10.2.1988 delegating its powers to invoke the provisions of Section 5 of the Environment (Protection) Act, 1986 to all the State Governments including Kerala, whereby State Government is empowered to issue directions for the closure, prohibition, or regulation of any industry.

4. Despite continuous genuine attempts made by various NGOs, media houses, Municipal Corporations to create awareness and reduce and regulate the use of PVC products and one-time use of plastic products, all these products still tend to end up in various water bodies, rivers, drains and finally the oceans. The Local Self Government Department through the Suchitwa Mission, has been promoting Green Protocol for the last 5 years, which is a programme that stresses on the importance of discarding disposable plastic items and using eco friendly, reusable substitutes. This programme has been implemented in all the Government offices and in all Government functions. Special attention is also being given to implement it in private functions like weddings. State Government is now convinced that the strict implementation of Plastic Waste Management Rules, 2016 alone does not mitigate the menace of plastic and on realization of this grim situation have decided to consider to impose a complete ban on single use plastic items in the State invoking the power delegated and now vested with it as per the section (5) of the Environment Protection Act 1986. Government then appointed an Expert technical Committee as per G.O (RT) 134/2018/Envvt dt 12.12.2018 to list out the plastic items to be banned and to find substitutes for them. The Expert Technical committee submitted its report to the Government recommending partial ban on some items like PVC, flags and regulation in case of majority of items and to establish a return and earn scheme.

5. Government examined the whole matter in detail. Despite all its efforts, there is no respite to the uncontrolled usage of single use plastic. Many of the States have imposed complete as well as partial ban on single use plastic items. The ban is effective in the States where the ban is imposed and have been found to be successful. The report of the Expert Technical Committee was also considered. After detailed scrutiny of the orders/notifications issued in other States where the single use plastic ban is effective and successful, State Government decided vide G.O (MS)6/2019/Envvt dt 27.11.2019, to impose a complete ban on the manufacture, storage, transport and sale of following single use items in the State of Kerala wef 1.1.2020.

Sl. No.	Products
1	Plastic carry bags irrespective of thickness
2	Plastic sheets (sheet used as table spread), cling film
3	Plates, cups and decorative materials made of thermocol/ Styrofoam
4	Single use plastic utensils like cups, plates, dishes, spoons, forks, straw, stirrer
5	Plastic-coated items like paper cups, plates, bowl, carry bags
6	Non woven bags, plastic flags, plastic bunting
7	Plastic water pouches, plastic juice packets
8	PET/PETE bottles of drinking water of capacities less than 300 ml.
9	Garbage bags (plastic)
10.	PVC flex materials
11	Plastic packets.



6. Following the issuance of the order, industry associations have raised apprehensions and sought more clarity over the items listed for banning.

7. Government have examined the whole matter in detail and is hereby issuing a clarification to the Government Order, read as 1st paper above. State Government in exercise of the powers conferred by Section 5 of the Environment Protection Act 1986, (No 29 of 1986) as delegated under section 23 of the said Act by the Central Government vide Notification No S.O 152(E) , New Delhi dt 10.2.1988, hereby order as follows:

8. No person or company or entity or industry shall manufacture, transport, store or sell any of the plastic products classified as, single use (one-time use) or other chlorinated plastic products as mentioned in the table below within the territory of State of Kerala with effect from 1.1.2020

S. No.	Product	Remarks
1	Plastic carry bags irrespective of thickness	[No further remarks]
2	Plastic sheets (sheets used as table spread)	Cling film excluded
3	Plates, cups and decorative materials made of Styrofoam or Thermocol	[No further remarks]
4	Single-use plastic utensils like cups, plates, dishes, spoons, forks, straw, stirrer	Cups includes tumblers
5	Plastic-coated paper cups, plastic-coated paper plates, plastic-coated paper bowls, plastic-coated paper bags	[No further remarks]
6	Non woven bags, plastic flags, plastic bunting	[No further remarks]
7	Plastic water pouches, non-branded plastic juice packets	[No further remarks]
8	Plastic juice packets	Branded plastic juice packets will come under EPR regulations
9	PET/PETE bottles of drinking water of capacities less than 500 ml	This is applicable only for drinking water  Branded juice PET bottles of all sizes and drinking water PET bottles of 500ml and more will come under EPR regulations

10	Garbage bags (Plastic)	[No further remarks]
11	PVC flex materials	[No further remarks]
12	Plastic packets	Clarified in Para No. 10 below

9. It is reiterated that plastic carry bags and other single use plastic products used for the following purposes shall be exempted:-

- i) Plastic products manufactured exclusively for the purpose of Export against any export order in a plastic industry.
- ii) Plastic products used for medical purposes and medical equipment.
- iii) Plastic products made from compostable plastic bearing a label 'compostable' and confirming to the Indian Standard IS or ISO 17088: 2008 titled as specification for "Compostable Plastic" as defined in the Plastic Waste (Management and Handling) Rules, 2016

10. The use of plastic packets in retail outlets (including street vendors/hawkers) for packing fruits and vegetables is prohibited. It is clarified that this includes plastic packets used for pre-cut fish and meat as well as pre-weighed quantities of cereals/pulses/sugar/flour etc.

11. It is clarified that branded items/products are excluded from the ambit of the ban. With respect to these products, the manufacturers/producers are bound to comply with the Extended Producers Responsibility (EPR plan) submitted to the Kerala State Pollution Control Board. All the producers/retailers/importers are mandated to comply with the EPR guidelines. This includes the Kerala State Beverages Corporation, KERAFED, MILMA, Kerala Water Authority and other PSUs, whose products are sold with plastic packaging. The wastes generated thus has to be dealt as per the EPR plan and is to be channelized through the existing waste collection facilities set up by local bodies. In case of non compliance, strict actions will be taken as per Act/rules in this regard. A detailed guidelines regarding EPR will be issued separately.

12. Alternatives to the single-use plastics prohibited by this order, other than compostable plastics which have been allowed by the earlier GO, shall be examined and tested by the Kerala State Pollution Control Board (KSPCB) and recommendations made to Government.

*Explanation (1) - "Plastic" means any item mentioned in this order made out of PolyPropylene(PP) , non-woven Polypropylene, multi-layer-co-extruder polypropylene, Polyethylene(PE), Poly vinyl chloride (PVC), high and low density polyethylene(HDPE and LDPE), Poly Styrene(PS) which is also called thermocol, Polyamides(nylon), Polyethylene Terephthalate(PET), Polymethyl Methacrylate(PMM) and plastic microbeads and any other plastic microbeads and any other plastic defined as plastic under the Plastic Waste Management Rules, 2016*

(2) Carry bags will have the same meaning that is provided in the provisions of Plastic Waste Management Rules , 2016

By Order of the Governor  
VALSA V.  
ADDITIONAL SECRETARY


To

1. The Secretary, Ministry of Environment and Climate Change, Govt of India
2. All the District Collectors
3. All the Department Heads
4. All Heads of Public Sector Units /Autonomous bodies
5. The Secretary to Governor, Raj Bhavan, Thiruvananthapuram
6. The Secretary, Legislative Assembly, Thiruvananthapuram
7. The Secretary, Kerala Public Service Commission
8. The Registrar, Kerala Administrative Tribunal (including covering letter)
9. The Registrar, Kerala High Court, Ernakulam
10. The Registrar, Kerala Lokayuktha, Thiruvananthapuram
11. The Member Secretary, State Planning Board, Pattom, Thiruvananthapuram
12. The Secretary, State Information Commission, Thiruvananthapuram
13. The Registrar, Kerala/Calicut/CUSAT/Kannur/Mahatma Gandhi Universities
14. The Registrar, Kerala Agriculture University, Mannuthy, Thrissur
15. The Registrar, Sree Sankaracharya Sanskrit University, Kalady P.O, Ernakulam
16. The Registrar, Kerala University of Health and Allied Science, Thrissur – 680596
17. The Registrar, Kerala Veterinary & Animal Husbandry Science University, Pookode, Wayanad
18. The Registrar, Kerala University of Fisheries and Ocean Studies, Panangad, Kochi
19. The Member Secretary, Central Pollution Control Board
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21. The Managing Director, Clean Kerala Company
22. Executive Director, Suchitwa Mission
23. CIPET (Institute of Plastic Technology), Kochi
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25. All Depts in Government Secretariat (to give direction to all institutions under their control)
26. General Administration (SC) Department
27. Stock File/Office Copy (Envt.B2/198/2018-Envt)

Copy to:-

1. Private Secretary to Chief Minister
2. Private Secretary to Chief Secretary
3. PA to Principal Secretary

Forwarded/By Order

  
Section Officer



**GOVERNMENT OF KERALA**

**Abstract**

Environment Department-Blanket ban on single -use plastic (disposable plastic items) in the State of Kerala w.e.f 1.1.2020- Government Order (MS) NO 7/2019/Envt dt 17.12.2019-  
**Erratum**-Orders issued

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**ENVIRONMENT(B) DEPARTMENT**

**G.O.(Ms)No.8/2019/ENVT** Dated,Thiruvananthapuram, 19/12/2019

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Read. 1. G.O( Ms) No. 7/2019/Envt dt 17.12.2019

**ORDER**

As per the Government order order read above , it is ordered at para 10 that  
“ the use of plastic packets in retail outlets (including street vendors/hawkers) for packing fruits and vegetables is prohibited. It is clarified that this includes plastic packets used for pre-cut fish and meat as well as pre-weighed quantities of cereals /pulses/sugar/flour etc”.

2. The para 10 of the Government Order read above may be corrected and read as “ the use of plastic packets in retail outlets (including street vendors/hawkers) for packing fruits and vegetables is prohibited .It is clarified that this does not include plastic packets used for pre-cut fish and meat as well as pre-weighed quantities of cereals /pulses/sugar/flour etc”.

3.The G.O read above stands modified to the above extent only.

4.The above correction is effected only to the English version of the Government order read above .

(By order of the Governor)

**VALSA.V**

**ADDITIONAL SECRETARY**

To:

1. The Secretary, Ministry of Environment and Climate Change, Govt of India
2. All the District Collectors
3. All the Department Heads
4. All Heads of Public Sector Units /Autonomous bodies
5. The Secretary to Governor, Raj Bhavan, Thiruvananthapuram
6. The Secretary, Legislative Assembly, Thiruvananthapuram

7. The Secretary, Kerala Public Service Commission
8. The Registrar, Kerala Administrative Tribunal (including covering letter)
9. The Registrar, Kerala High Court, Ernakulam
10. The Registrar, Kerala Lokayuktha, Thiruvananthapuram
11. The Member Secretary, State Planning Board, Pattom, Thiruvananthapuram
12. The Secretary, State Information Commission, Thiruvananthapuram
13. The Registrar, Kerala/Calicut/CUSAT/Kannur/Mahatma Gandhi Universities
14. The Registrar, Kerala Agriculture University, Mannuthy, Thrissur
15. The Registrar, Sree Sankaracharya Sanskrit University, Kalady P.O, Ernakulam
16. The Registrar, Kerala University of Health and Allied Science, Thrissur – 680596
17. The Registrar, Kerala Veterinary & Animal Husbandry Science University, Pookode, Wayanad
18. The Registrar, Kerala University of Fisheries and Ocean Studies, Panangad, Kochi
19. The Member Secretary, Central Pollution Control Board
20. The Member Secretary, State Pollution Control Board
21. The Managing Director, Clean Kerala Company
22. Executive Director, Suchitwa Mission
23. CIPET (Institute of Plastic Technology), Kochi
24. Kerala Plastic Manufacturers Association
25. All Depts in Government Secretariat (to give direction to all institutions under their control)
26. General Administration (SC) Department
27. Stock File/Office Copy (Envf.B2/198/2018-Envf)

Copy to:-

1. Private Secretary to Chief Minister
2. Private Secretary to Chief Secretary
3. PA to Principal Secretary

Forwarded/By Order



Section Officer



**GOVERNMENT OF KERALA**

**Abstract**

Environment Department- Non natural fibre alternatives to banned Single use plastic items- Entrusting State Pollution Control Board for testing and notifying alternative materials - Orders issued

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**ENVIRONMENT (B) DEPARTMENT**

**G.O.(Rt)No.128/2019/ENVT Dated,Thiruvananthapuram, 31/12/2019**

Read 1 G.O(Ms)7/2019/Env dt 17.12.2019

2 G.O(Ms) 6/2019/Env dt 27.11.2019

**ORDER**

As per Government Order read as 2nd paper above, State Government have imposed a complete ban on the manufacture, storage, transport and sale of single -use plastic items in the State w.e.f 1.1.2020 , further modified and clarified the matter as per the Government Order read as 1st paper above. In furtherance to the decision of Government to ban single-use plastic items, there have been huge demand for alternative materials that can replace single use plastic. Many parties have also approached State Government with the claim to have discovered alternatives for the banned plastic, that are compostable as well as bio-degradable.

2. Government have examined the matter in detail. The veracity of the alternative materials have to be lab tested and verified before the material is brought to the market. Hence Government are pleased to entrust Kerala State Pollution Control Board for testing and notifying alternative materials that can substitute the banned single-use plastic items. Testing the suitability of the alternatives for single-use plastic items shall be done with the assistance of CSIR- National Institute for Interdisciplinary Science & Technology, Thiruvananthapuram.

(By order of the Governor)  
**VALSA.V**  
**ADDITIONAL SECRETARY**

To:

The Director, National Institute for Interdisciplinary Science and  
Technology , Council of Scientific and Industrial Research,  
Thiruvananthapuram

The Chairman, Kerala State Pollution Control Board

The Director, Department of Environment & Climate Change

The Director, Department of Urban affairs

The Director, Panchayath Department

All District Collectors

The Executive Director, Suchitwa Mission

The Managing Director, Clean Kerala Company ltd

Copy to :

ACS, Local Self Government Department

PA to Principal Secretary, Environment Department

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Section Officer



GOVERNMENT OF KERALA

Abstract

Environment Department- Ban of the use of Compostable carry bags-Alternative materials that can be used as a substitute for the banned single use plastic items - - Orders issued

ENVIRONMENT(B) DEPARTMENT

G.O.(Ms)No.2/2020/ENVT Dated,Thiruvananthapuram, 27/01/2020

Read 1 Press release dt 6.1.2020 of the Director, Department of Environment & Climate change

2 G.O(MS) No 7/2019/Env dt 17.12.2019

3 G.O (MS) No.6/2019/Env dt 27.11.2019

ORDER

Vide orders read as 2., 3. above, Govt have imposed a ban on the manufacture, storage, transport and sale of single use plastic items in the State of Kerala w.e.f 1.1.2020 and anyone found to be violating the Government Order will be fined up to Rs 50000/- and cancellation of license.

After the issuance of the above Orders, State Government received numerous representations about the use of carry bags and requesting to provide/list out alternative materials that can be used as a substitute for the banned single use plastic items. State Government had in GO cited 3. above, ordered that compostable materials having the specified standard can be used as a substitute for the banned plastic items. However it is noticed that fake compostable products resembling the original in texture and tint, and difficult to distinguish at first look, are flooding the markets negating the impact of the plastic ban and defeating the very intention of Government of ridding the State and water bodies of single use plastic.

State Government have examined the whole matter in detail. Cloth and paper carry bags had been used till recently in the State to buy goods and groceries. These serve as reasonable substitutes for the banned plastic carry bags. A number of micro and small scale units have now started production and supply of such plastic free carry bags. The public response to the ban has been overwhelming and they have started carrying their own bags to the market. Government therefore issued clarification vide reference 1. cited.

Government hereby issue the order further clarifying the banned items. It is recommended to use the following alternative non-plastic /eco-friendly materials as a substitute for the banned single use plastic items.



A	<b>Both Branded and Non-branded compostable alternatives/substitutes are banned for the following items</b>	Recommended non-plas tic substitutes
	<ol style="list-style-type: none"> <li>1. Carry bags irrespective of thickness, made of plastic</li> <li>2. Sheets made of plastic, for single-use spread on tables in function venues, spread on plates while serving food.</li> <li>3. Plates, cups and decorative materials made of styrofoam or Thermocol</li> <li>4. Single-use utensils like cups, plates, dishes, spoons, forks, straw, stirrer, made of plastic</li> <li>5. Non-woven bags, plastic flags, plastic bunting</li> <li>6. Plastic packets for packing fruits and vegetables</li> <li>7. Plastic drinking water pouches</li> <li>8. PET/PETE drinking water bottles less than 500 ml</li> </ol>	<p>Cloth, paper bags</p> <p>Paper spread</p> <p>Glass, ceramic, steel, cups, plates, paper and plant-based decorations</p> <p>Glass, ceramic, steel, wooden cups, plates, dishes, spoons, forks, straw, stirrer</p> <p>Cloth and paper bags, flags and bunting</p> <p>Paper and cloth bags</p> <p>Banned, no substitute</p>
B	<b>Banned items for which compostable substitutes can be used</b>	Recommended Compostable substitute

<p>1. Plastic-coated paper cups, plastic-coated paper plates, plastic-coated paper bowls, plastic-coated paper bags</p> <p>2. Garbage Bags, including for hospital use, made of plastic</p>	<p>Paper cups with PLA-coating, certified by CPCB and IS: 17088 compliant.</p> <p>Compostable plastic garbage bags, certified by CPCB and IS: 17088 compliant</p>
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Compostable materials should also adhere to the following guidelines -

1. The compostable plastic products shall have approval from Central Pollution Control Board (CPCB) and the certificate issued by CPCB shall be valid at the time of manufacture/sale/stocking/marketing of the product/s.
2. The compostable plastic materials shall bear details of the company that manufacture, agency that market, the material specification, date of manufacture, batch number, CPCB approval details with license number and validity etc, in the form of QR code.
3. The product shall bear the title '**this is a purely compostable plastic product**' written in both English and Malayalam.
4. The product shall dissolve in Dichloromethane (Methylene dichloride) and this shall be indicated in the packaging bag/cover/sheet material, as a preliminary test for identification. This shall be printed on the product as 'This product dissolve in

Dichloromethane (Methylene dichloride).

(By order of the Governor)  
**DR. USHA TITUS**  
**PRINCIPAL SECRETARY**

To:

1. The Secretary, Ministry of Environment and Climate Change, Govt of India
2. All the District Collectors
3. All the Department Heads
4. All Heads of Public Sector Units /Autonomous bodies
5. The Secretary to Governor, Raj Bhavan, Thiruvananthapuram
6. The Secretary, Legislative Assembly, Thiruvananthapuram
7. The Secretary, Kerala Public Service Commission
8. The Registrar, Kerala Administrative Tribunal (including covering letter)
9. The Registrar, Kerala High Court, Ernakulam
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12. The Secretary, State Information Commission, Thiruvananthapuram
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14. The Registrar, Kerala Agriculture University, Mannuthy, Thrissur
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16. The Registrar, Kerala University of Health and Allied Science, Thrissur –  
680596
17. The Registrar, Kerala Veterinary & Animal Husbandry Science University,

Pookode, Wayanad

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24. Kerala Plastic Manufacturers Association
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Copy to:-

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3. PA to Principal Secretary

Forwarded /By order

Section Officer



GOVERNMENT OF KERALA

Abstract

Environment Department- Ban on single use plastic items in the State w.e.f 1.1.2020 -further clarifications-Orders issued

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ENVIRONMENT(B) DEPARTMENT

G.O.(Ms)No.4/2020/ENVT Dated,Thiruvananthapuram, 16/02/2020

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- Read 1. G.O(MS) NO 111/2019/LSGD dt 29.8.2019  
2. G.O(MS) No 6/2019/Envt dt 27.11.2019  
3. G.O(MS) No 7/2019/Envt dt 17.12.2019  
4. G.O(RT) 128/2019/Envt dt 31.12.2019  
5. G.O(RT) No.6/2020/Envt dt 17.1.2020  
6 G.O(RT) 9/2020/Envt dt 23.1.2020  
7. G.O(MS) NO. 2/2020/Envt dt 27.01.2020

ORDER

1. State Government had imposed a blanket ban on sale, manufacture, transport and storage of single use plastic items in the State w.e.f. 1.1.2020 vide G.O read as 2nd paper above. It was also ordered that compostable/bio-degradable materials having specification as stipulated in the Plastic Waste Management Rules 2016 could be used as a replacement/substitute for the banned single use plastic. KSPCB was authorized vide GO read as 4th paper above to do tests and verify the degradability of the compostable product and submit recommendations to Government.

2. It is now noticed that large quantities of fake compostable carry bags are entering the market circumventing the plastic ban. The public and shop owners are generally unable to distinguish them, defeating the very intention of Government to get rid of plastic from the State. In the above context, State Government vide G.O read as 7th paper above have issued further clarification listing out the alternative materials that could be used as substitutes for banned single use plastic items. Accordingly carry bags whether made of compostable materials or other materials were banned and instead only cloth or paper bags are allowed to be used as carry bags.

3. In the case of hoardings, Government have already issued detailed order vide G.O read as 1st paper above banning the use of Flex/PVC materials and replacing them with Cloth or Poly Ethylene materials only. It was clearly mentioned in the order that plastic coated cloth cannot be used. But plastic coated cloth like polyester/nylon/korean cloth continue to be used for hoardings which cannot be allowed.

4. Meanwhile Government have been receiving numerous representations from various quarters seeking clarifications/suggestions/recommendations on the banned items. In

order to consider the various issues raised in these representations and to review the general situation after the plastic ban, a Task Force was constituted vide G.O read as 5th and 6th paper above. The Task force met on 28.1.2020 and 4.2.2020 and considered all the issues that were raised after the plastic ban.

5. Based on the decisions taken by the Task Force, Government hereby reiterate and issue further clarification/order as follows:

i) **There is a complete ban on carry bags even those made of compostable materials in the State and only cloth and paper bags free from plastic coating should be used as carry bags.**

ii) Plastic/plastic coated leaves used as plates are banned from the date of this order

iii) All product attached straws and other such items that are part of branded product packaging are exempted from the ban and they come under the purview of EPR.

iv) Plastic sapling bags are banned. It should be substituted with non plastic materials. For Grow bags, compostable materials can be used.

v) Garbage bags made of Compostable materials alone should be used for collecting/segregating biomedical waste.

vi) In the wake of fake compostable products entering the market, random checks shall be done on such products (products that are allowed to use compostable materials as per G.O(MS)No.2/2020/Env dt 27.01.2020) and the authenticity/biodegradability of the products shall be tested in the labs of NIIST, IIST and KSPCB authorized labs.

vii) Compostable products should bear the details of the company that manufacture it the agency that market it, the material specification, date of manufacture, batch no, CPCB approval details with license no. and validity etc in the form of QR code. The product shall bear the title 'this is a purely compostable product' written in English and Malayalam. The product should dissolve in Dichloromethane (Methylene dichloride) and this shall be indicated in the packaging as a preliminary test for identification.

viii) With regard to the hoardings and usage of alternative materials in place of banned Flex/PVC hoardings the following guidelines are issued

**1. The use of plastic coated cloth material for hoarding is strictly banned and only cloth (plastic free), paper (plastic free) and Poly Ethylene material should be used for hoardings as a substitute of flex/pvc hoardings. While printing, it should carry the logos 'recyclable, pvc free' expiry date, name of the printing unit and printing no. The details of the consumer must be registered in the shop. For banners carrying programme details, they shall be deemed to expire after the programme date and those banners/hoardings having no expiry date are deemed to expire after 30 days and will have to be removed by the installing agency.**

**2. All the printing units in the State should publicize that only compostable materials will be used for printing purpose and this must be exhibited.**

3. Those found to be violating the Government order will be liable to pay fine as specified in the G.O read as 1st and 2nd above, eventually leading to cancellation of license

(By order of the Governor)  
**DR. USHA TITUS**  
**PRINCIPAL SECRETARY**

To:

1. The Secretary, Ministry of Environment and Climate Change, Govt of India
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Copy to:-

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Section Officer



**STATUS REPORT ON SOLID WASTE MANAGEMENT AS ON Oct 2020 (Details submitted by localbodies)**

**A. Corporation**

<b>A.1. Segregation and Collection</b>									
<b>Name of District</b>		<b>Thiruvananthapuram</b>	<b>Kollam</b>	<b>Ernakulam</b>	<b>Thrissur</b>	<b>Kozhikode</b>	<b>Kannur</b>		
<b>Name of Corporation</b>		<b>Thiruvananthapuram (Model city)</b>	<b>Kollam</b>	<b>Kochi</b>	<b>Thrissur (Model city)</b>	<b>Kozhikode (Model city)</b>	<b>Kannur</b>		
Population (2011)		958000	397000	677000	317526	609000	356000		
No of Wards		100	55	74	55	75	55		
No of Household		2,72,820	88,332	1,67,935	86,604	1,39,507	68,059		
No of Establishment		18,882	9,825	18,706	15,250	30,120	11,887		
Total waste generated (TPD)		353.58	165 112.45	326	127	300	21		
Total bio waste generated (TPD)			69.9			195			
Total non bio waste generated (TPD)			42.56			105			
Total waste collected (TPD)				206	122.55	100	15		
Total waste treated (TPD)	Centralised units	Nil	Nil	206			15		
	decentralised units	152.23	14.5	9.7		254	6		
	Other	90		11		40			
Total waste treated (TPD)		242.23				294			
No of Household having segregation at source		Dry	2,18,150	56,803	1,13,306	18,000	82,500	43,210	
		Wet	2,18,150	Nil	1,13,307		22,550	43,210	
No of Establishment having segregation at source		Dry	16,723	1720	13,665	18,000	20,350	28,824	
		Wet	16,723	Nil	13,665		17,463	28,824	
D2D Collection	Households	Number	Dry	52,726	52809	1,50,730	75,000	69,355	43,210
			Wet	NIL	Nil	150730	716	50540	28824
		Percentage	Dry	19.4	59.8	89.8	86.6	49.72	63.5
			Wet			89.8	0.9	36.23	42.4
		Collection	Dry	Weekly once	monthly	Every 3	Once in month	Weekly	Monthly

<b>A.1. Segregation and Collection</b>										
<b>Name of District</b>			<b>Thiruvananthapuram</b>	<b>Kollam</b>	<b>Ernakulam</b>	<b>Thrissur</b>	<b>Kozhikode</b>	<b>Kannur</b>		
<b>Name of Corporation</b>			<b>Thiruvananthapuram (Model city)</b>	<b>Kollam</b>	<b>Kochi</b>	<b>Thrissur (Model city)</b>	<b>Kozhikode (Model city)</b>	<b>Kannur</b>		
	tion Frequency			once or twice	days		once			
		Wet	NIL	NIL	Daily	once in two days	Daily	Daily		
	Establishments	Number	Dry	17,382	4,800	11,175	10,000	23,580	10,613	
			Wet	17,382	NIL	11,175	2,500	20,650	7,517	
		Percentage	Dry	92.1	48.9	59.8	65.5	78.29	89.3	
			Wet	92.1		59.8	16.4	68.56	63.3	
	Collection Frequency	Dry	DAILY	WEEKLY ONCE	Daily	once in two days	Daily	Fortnightly		
		Wet	WEEKLY ONCE	NIL	Every 3 days	daily	Daily	Daily		
	No of collectors			25 SERVICE PROVIDERS	124 (HKS)	1200	145	645	44	
	No of vehicles used			54	2	84	48	18	7	
No. having source level treatment of wet waste in operation		Household	11,0341	2,206	15,466	716	13,603	23,318		
		Establishment	1,850	68	315	2,500	1,435	3,120		
Percentage having source level treatment of wet waste in operation		Household	40.44	2.5	9	1	9.75	34.3		
		Establishment	9.8	0.69	1.7	16.4	4.76	26.2		
No. disposing to centralised system		Household	NIL	NIL	150,730		Nil	Nil		
		Establishment	NIL	NIL	13,665	2000	8	Nil		
Percentage having disposal to centralised system		Household	NIL	0	89.7			0		
		Establishment	NIL	0	73	13.1		0		
No. existing		MCF	54	7	3	11	12	2		
		RRF	4	1	5	3	2	1		
No. needed		MCF	55	275	71	15		25		
		RRF	10	2	1	35		5		

<b>A.1. Segregation and Collection</b>							
<b>Name of District</b>		<b>Thiruvananthapuram</b>	<b>Kollam</b>	<b>Ernakulam</b>	<b>Thrissur</b>	<b>Kozhikode</b>	<b>Kannur</b>
<b>Name of Corporation</b>		<b>Thiruvananthapuram (Model city)</b>	<b>Kollam</b>	<b>Kochi</b>	<b>Thrissur (Model city)</b>	<b>Kozhikode (Model city)</b>	<b>Kannur</b>
Qty of dry waste given to	Registered recyclers for plastic			NIL			Nil
	Registered recycler for e-waste			NIL			Nil
	Registered recycler for domestic hazardous waste			NIL			Nil
	Recyclers for other wastes			NIL			Nil
	Clean Kerala Company	64.8		NIL			Nil
	Road tarring			84 tons till 2019			Nil
	Cement kiln			NIL			Nil
	Landfill			NIL			nil
	Others			1TPD sent for recycling			Nil
	Total						
ULBs in which sweeping is carried out twice or more in public areas				NA	NA	Yes	
User fee		Rs.7/kg for poultry waste rs.5/kg for commercial waste plan 100- collection of nonbiodegradable from households plan 200-providing kitchen bin and inoculam to households	60-750	100-300	Rs. 50 for non bio degradable. Rs 350 for biodegradable. Commerical establishment depends on the quantity of waste	Rs 60/- - Rs 150/-	Collecting
Remarks							Nil

### A.2. Centralised System

Name of District	Thiruvananthapuram	Kollam	Ernakulam	Thrissur	Kozhikode	Kannur
Name of Corporation	Thiruvananthapuram corporation	Kollam Corpn.	Kochi Corpn	Thrissur corpn.	Kozhikode	Kannur
Quantity of Waste generated (TPD) based on population	399	165	326	153	254	148
Quantity of Waste generated (TPD) as reported by localbodies	353.58	112.45	326	152.5 TPD	300	15
Quantity of Waste collected (TPD)		10.5	308	122.55 TPD	98	15
Quantity of Waste treated (TPD)	242.2 Dry: 54.5 TPD, Wet: 187.7 TPD	10.5	211	122.55 TPD	95	15
Quantity of Waste processed in Composting Sites (TPD)			211	16 TPD (OWC 8+4+4)	75	15
Quantity of Waste processed in bimethanation (TPD)	NIL	7.75	NIL	2 TPD	65	0
Quantity of Waste processed in waste to energy plants (TPD)	NIL	NIL	NIL	NIL	0	0
Quantity of Waste processed in Landfill (TPD)	NIL	NIL	97	Nil	0	0
Existing capacity of Waste Processing Facilities: (TPD)		20	250	103 TPD	100	0
Existing capacity of Waste Disposal Facilities: (TPD)		nil	100	103 TPD	100	0
Planned Capacity of Waste Processing Facilities (TPD)		16	300	48.37 TPD	100	0
Planned Capacity of Waste Disposal Facilities (TPD)		nil	300	48.37 TPD	100	0
Timeframe for installation of planned capacity of Waste Processing Facilities: (Months)		6	18	1 year	1 Year	0
Timeframe for installation of planned capacity of Waste Disposal Facilities: (Months)		6	18	1 year	8 Months	0
Number of Legacy waste dumpsites in the State/UTs and plan for their Remediation:		1 (Kureepuzha)	1(Kochi M.Corp)	1	1 Njeliyan Paramba	1

**A.3. Decentralised units namely pipe compost, kitchen bin, bio composter, biobin, pot bin, biogas plant.**

Name of District	Thiruvanthapuram	Kollam	Ernakulam	Thrissur	Kozhikode	Kannur
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Name of Corporation	Thiruvanthapuram	Kollam	Kochi	Thrissur	Kozhikode	Kannur
No of units supplied:	110,091	2,206	NIL	3,499	11,360	2,299
No of units working:	97,365	1,986	NIL	3,499	11,185	2,299
No of units not working:	12,726	220	NIL	nil	175	0
Reason for failure:	Improper usage by the beneficiaries	Due to improper usage	NA	nil		0
Total quantity of Waste treated through decentralised facilities (TPD) as reported by localbodies	88.9	14.5	9.7		100	10

### A.3.1 Details of Decentralised Facilities as reported by Localbodies

Name of District		Thiruvanthapuram	Kollam	Ernakulam	Thrissur	Kozhikode	Kannur
Name of Corporation		Thiruvanthapuram	Kollam	Kochi	Thrissur	Kozhikode	Kannur
pipe compost	Total no of units supplied	87000	578	NIL	2272	11360	1892
	No of units working	50000	462	NIL	2272	11165	1682
	No of units not working	37000	116	NIL	-	195	210
	Quantity of waste treated using pipe composting facilities (TPD)	43.5	1	NIL		5.125	9.5
Kitchen bin	Total no of units supplied	19000(15833+ Old Bin)	0	NIL	Nil		102
	No of units working	19000(15833+ Old Bin)	0	NIL	Nil		NA
	No of units not working	Nil	0	NIL	Nil		NA
	Quantity of waste treated using kitchen bin facilities (TPD)		0	NIL	nil		NA
Biogas plant (Household level)	Total no of units supplied	3982	1591	NIL	727	444	50
	No of units working	3892	1273	NIL	727	424	40
	No of units not working	2.39	318	NIL	-	20	10
	Quantity of waste treated using biogas plant (TPD)		2.5	NIL		1.726	0
Biogas plant (Community level)	Total no of units supplied	23	13	NIL	nil	3	1
	No of units working	18	13	NIL	nil	3	1
	No of units not working	5	0	NIL	nil	0	0
	Quantity of waste treated using biogas plant	18.4	5.6	NIL	nil	6	0.25

Name of District		Thiruvanthapuram	Kollam	Ernakulam	Thrissur	Kozhikode	Kannur
Name of Corporation		Thiruvanthapuram	Kollam	Kochi	Thrissur	Kozhikode	Kannur
	(TPD)						
Aerobins (Community level)	Total no of units supplied	55	13	NIL	nil	289	NIL
	No of units working	53	13	NIL	nil	289	NA
	No of units not working	2	0	NIL	nil	0	NA
	Quantity of waste treated using aerobins (TPD)	12	3.9	NIL	nil	0.528	NA
biocomposter, biobin, pot bin	Total no of units supplied	Bio Bin 109	720	NIL	450		NIL
	No of units working	109	720	NIL	450		NA
	No of units not working	Nil	0	NIL	-		NA
	Quantity of waste treated using these units (TPD)	15	1.5	NIL			NA
Others	Total no of units supplied	109	0	NIL	52655 Compost pit		1
	No of units working	109	0	NIL	52655		1
	No of units not working	109	0	NIL	-		0
	Quantity of waste treated using these units (TPD)		0	NIL			0.25

## B. Municipalities

### B.1. Municipalities in Thiruvananthapuram

#### B.1.1. Segregation and Collection

Name of District	Thiruvananthapuram			
	Attingal (Model Town)	Neyyattinkara	Nedumangad	Varkala
Population (2011)	37648	70850	60161	40048
No of Wards	31	44	39	33
No of Household	13,891	19,696	16,169	12,908

<b>B.1.1. Segregation and Collection</b>									
<b>Name of District</b>				<b>Thiruvananthapuram</b>					
<b>Name of Municipality</b>				<b>Attingal (Model Town)</b>	<b>Neyyattinkara</b>	<b>Nedumangad</b>	<b>Varkala</b>		
No of Establishment				1813	1,940	1,600	6,206		
No of Household having segregation at source		Dry		6,731	17,531		5,850		
		Wet		2433			0		
No of Establishment having segregation at source		Dry		974	1145		980		
		Wet		974			81		
Total waste generated (TPD)				17.2		19	15		
Total biodegradable waste generated				16		13	9		
Total non biodegradable waste generated				1.2		6	6		
Total waste collected (TPD)									
Total waste treated (TPD)		Centralised units							
		decentralised units							
		Other							
Total waste treated (TPD)									
<b>D2D Collection</b>	Households		Number		Dry	6731	9454	1000	5850
					Wet	2433	0		0
			Percentage		Dry	48.5	48	6.2	51
					Wet	17.6	0	0	0
	Collection Frequency		Dry	monthly	Twice in a month	15 days	1/month		
			Wet	daily	Nil	nil	0		
	Establishments		Number		Dry	974	355	1000	980
					Wet	974	0	nil	80
			Percentage		Dry	100	18.3	62.5	87.5
					Wet	100	0		7.2
	Collection Frequency		Dry	weekly twice	Once in a week	weekly	twice in a week		
			Wet	daily	Nil		daily		
	No of collectors				44	88	22	18	
	No of vehicles used				15 Push cart	2	2	3	

<b>B.1.1. Segregation and Collection</b>					
<b>Name of District</b>		<b>Thiruvananthapuram</b>			
<b>Name of Municipality</b>		<b>Attingal (Model Town)</b>	<b>Neyyattinkara</b>	<b>Nedumangad</b>	<b>Varkala</b>
		2 LCV			
No. having source level treatment of wet waste in operation	Household	412	14181	15000	4370
	Establishment	6(Community Level	213	1500	31
Percentage having source level treatment of wet waste in operation	Household	10	72		33.8
	Establishment		11		45
No. disposing to centralised system	Household	only one centralized plant	nil	200	0
	Establishment	only one centralized plant	nil	50	0
Percentage having disposal to centralised system	Household	90	0		0
	Establishment	90	0		0
No. existing	MCF	1	1	1	3
	RRF	1	0	1	1
No. needed	MCF	nil	3	1	2
	RRF	2	1	1	0
Qty of dry waste given to	Registered recyclers for plastic				
	Registered recycler for e-waste				
	Registered recycler for domestic hazardous waste				
	Recyclers for other wastes				
	Clean Kerala Company			0.5	
	Road tarring				800 kg
	Cement kiln				
	Landfill				
	Others				
	Total				



### B.1.1. Segregation and Collection

Name of District	Thiruvananthapuram			
Name of Municipality	Attingal (Model Town)	Neyyattinkara	Nedumangad	Varkala
User fee	Rs 50-150 house hold/monthly Rs 300-2000 shop/monthly		60-1600	100 - Dry waste
Remarks	User fee various depending on the quantity of waste collected	User fee collections started	User fee charged as per the type of plastic collected from establishments and house holds	Wet waste - 3/Kg (As per Kg)

### B.1.2. Centralised System

Name of District	Thiruvananthapuram			
Name of Corporation /Municipality /Panchayath	Attingal (Model Town)	Neyyattinkara	Nedumangad	Varkala
Quantity of Waste generated (TPD) based on population	17	30	25	17
Quantity of Waste generated (TPD)	17 TPD	24	3	8
Quantity of Waste collected (TPD)	16 TPD	3	1.5	4.8
Quantity of Waste treated (TPD)	16 TPD	2.25	1.5	4.8
Quantity of Waste processed in Composting Sites (TPD)	15	0	1	4.3
Quantity of Waste processed in biomethanation (TPD)	1.5	1	500 Kg	4.3
Quantity of Waste processed in waste to energy plants (TPD)		0	nil	0
Quantity of Waste processed in Landfill (TPD)		0	nil	0
Existing capacity of Waste Processing Facilities: (TPD)	16	1	1.5	5
Existing capacity of Waste Disposal Facilities: (TPD)	16	0.25	1.5	0

Name of District	Thiruvananthapuram			
Name of Corporation /Municipality /Panchayath	Attingal (Model Town)	Neyyattinkara	Nedumangad	Varkala
Planned Capacity of Waste Processing Facilities (TPD)	16	0.5	1.5	3
Planned Capacity of Waste Disposal Facilities (TPD)	16	0.5	1.5	0
Timeframe for installation of planned capacity of Waste Processing Facilities: (Months)	2007	3		5
Timeframe for installation of planned capacity of Waste Disposal Facilities: (Months)	commissioned months	3	6 months	0
Number of Legacy waste dumpsites in the State/UTs and plan for their Remediation:	1	NIL	nil	Nil

**B.1.3. Decentralised units namely pipe compost, kitchen bin, bio composter, biobin, pot bin, biogas plant.**

Name of District	Thiruvananthapuram			
Name of Municipality	Attingal (Model Town)	Neyyattinkara	Nedumangad	Varkala
No of units supplied:	410 house hold level 2 kitchen bio bin 6 community level bio gas plant	110	150 Biogas, 1548 Kitchen bin	Ring Compost : 500 Pipe compost 180 Compost pit- 82
No of units working:	410 portable bio gas plant 2 kitchen bio bin	104	150 Biogas, 1548 Kitchen bin	Ring Compost : 500 Pipe compost 180 Compost pit- 82
No of units not working:	2 bio gas plant	6	nil	
Reason for failure:	not proper maintain(O&M)	Inproper Handling	All are maintainig properly	
Total quantity of Waste treated through decentralised facilities (TPD) as reported by localbodies	1.7	1.5	0.074	5

**B.1.3.1 Details of Decentralised Facilities as reported by Localbodies**

Name of District	Thiruvanthapuram
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STATUS REPORT ON SOLID WASTE MANAGEMENT AS ON Oct 2020 (Details submitted by localbodies)

Name of Municipality		Attingal (Model Town)	Neyyattinkara	Nedumangad	Varkala
pipe compost	Total no of units supplied	NIL	-	2700	180
	No of units working	-	-	2700	180
	No of units not working	-	-		
	Quantity of waste treated using pipe composting facilities (TPD)		-		
Kitchen bin	Total no of units supplied	NIL	-	2617	
	No of units working	-	-	2617	
	No of units not working	-	-	nil	
	Quantity of waste treated using kitchen bin facilities (TPD)	-	-	3 Kg.	
Biogas plant (Household level)	Total no of units supplied	412	110	200	
	No of units working	407	104	163	
	No of units not working	5	6	37	
	Quantity of waste treated using biogas plant (TPD)	0.850 TPD	0.5	5 Kg. per day	
Biogas plant (Community level)	Total no of units supplied	412	NIL	37	
	No of units working	407	NIL	10	
	No of units not working	10	NIL	27	
	Quantity of waste treated using biogas plant (TPD)	0.850 TPO	NIL	66 Kg./day	
Aerobins (Community level)	Total no of units supplied	NIL	10		
	No of units working	-	10	nil	
	No of units not working	-	-		
	Quantity of waste treated using aerobins (TPD)	-	1		
biocomposter,	Total no of units supplied	NIL	-		

Name of District		Thiruvanthapuram			
Name of Municipality		Attingal (Model Town)	Neyyattinkara	Nedumangad	Varkala
biobin, pot bin	No of units working	-	-		
	No of units not working	-	-		
	Quantity of waste treated using these units (TPD)	-	-		
Others	Total no of units supplied	NIL	-	15 ring compost	Ring Compost : 500 Compost pit- 82
	No of units working	-	-		
	No of units not working	-	-		
	Quantity of waste treated using these units (TPD)	-	-		

## B.2. Municipalities in Kollam

### B.2.1. Segregation and Collection

Name of District		Kollam			
Name of Municipality		Karunagapally	Paravur (South)	Punalur (Model Town)	Kottarakara
Population (2011)		47483	36798	48648	31256
No of Wards		35	32	35	29
No of Household		14929	15069	13062	8393
No of Establishment		1700	2570	1232	3774
No of Household having segregation at source	Dry	4375	15069	3265.5 kg	5589
	Wet	0	15069	4571.7 kg	0
No of Establishment having segregation at source	Dry	350	2570	2525 kg	834
	Wet	45		527 kg	0
Total waste generated (TPD)		7	15	20	10.9
Total biodegradable waste generated		5.7			7.45
Total non biodegradable waste generated		1.3			3.45

<b>B.2.1. Segregation and Collection</b>							
<b>Name of District</b>			<b>Kollam</b>				
<b>Name of Municipality</b>			<b>Karunagapally</b>	<b>Paravur (South)</b>	<b>Punalur (Model Town)</b>	<b>Kottarakara</b>	
Total waste collected (TPD)							
Waste treated (TPD)	Centralised units					0.15	
	decentralised units					6.3	
	Other					0.28	
Total waste treated (TPD)			3.35			6.73	
D2D Collection	Households	Number	Dry	4375	15069	12954	5589
			Wet	0	Nil	Nil	0
		Percentage	Dry	29.4	100	99.2	66.6
			Wet	0			0
		Collection Frequency	Dry	15 days	weekly	4 days	5589
			Wet	0	nil	Nil	0
	Establishments	Number	Dry	350	2570	1230	756
			Wet	0	nil	Nil	0
		Percentage	Dry	20.6	100	99.9	20.1
			Wet	0			0
		Collection Frequency	Dry	15days	weekly	Daily	756
			Wet	0		Nil	0
No of collectors			35	32	127	58HKS	
No of vehicles used			3	1	3	1	
No. having source level treatment of wet waste in operation		Household	375		13062	5356	
		Establishment	225		1232	745	
Percentage having source level treatment of wet waste in operation		Household	25		100%	0	
		Establishment	22		100%	0	
No. disposing to centralised system		Household	0		Nil	0	
		Establishment	0		Nil	0	
Percentage having disposal to centralised system		Household	0		Nil	0	
		Establishment	0		Nil	0	
No. existing		MCF	1		200	2	
		RRF	1		1	1	
No. needed		MCF	1		0	29	
		RRF	1		0	1	

<b>B.2.1. Segregation and Collection</b>					
<b>Name of District</b>		<b>Kollam</b>			
<b>Name of Municipality</b>		<b>Karunagapally</b>	<b>Paravur (South)</b>	<b>Punalur (Model Town)</b>	<b>Kottarakara</b>
Qty of dry waste given to	Registered recyclers for plastic				
	Registered recycler for e-waste				0.45
	Registered recycler for domestic hazardous waste				0
	Recyclers for other wastes	0.03			0.02
	Clean Kerala Company	11.12 T			0.2
	Road tarring	1.415			0.03
	Cement kiln	0			0
	Landfill	2.4 T			0.12
	Others				0.25
	Total				1.07
User fee		Rs 50/month/household		Each house 30 Shop 100 Rs fee	
Remarks		Nil			Lack of suitable land for MCF

**B.2.2. Centralised System**

<b>Name of District</b>	<b>Kollam</b>		<b>Kollam</b>	<b>Kollam</b>
<b>Name of Municipality</b>	<b>Karunagapally</b>	<b>South Paravur</b>	<b>Punalur (Model Town)</b>	<b>Kottarakara</b>
Quantity of Waste generated (TPD) based on population	20	15	20	13
Quantity of Waste generated (TPD)	13	.250 TON (250 KG)	10.5	
Quantity of Waste collected (TPD)	7	.250 TON (250 KG)	10.5	
Quantity of Waste treated (TPD)	1	.250 TON (250 KG)	10.5	
Quantity of Waste processed in Composting Sites (TPD)	0	.250 TON	500 KG	
Quantity of Waste processed in biomethanation (TPD)	0	NIL	Nil	

Quantity of Waste processed in waste to energy plants (TPD)	0	NIL	Nil	
Quantity of Waste processed in Landfill (TPD)	0	NIL	Nil	
Existing capacity of Waste Processing Facilities: (TPD)	0.5	.250 TON	15 ton	
Existing capacity of Waste Disposal Facilities: (TPD)	1.5	.250 TON	10.5 ton	
Planned Capacity of Waste Processing Facilities (TPD)	Nil	NIL	Nil	
Planned Capacity of Waste Disposal Facilities (TPD)	0		Nil	
Timeframe for installation of planned capacity of Waste Processing Facilities: (Months)	0			
Timeframe for installation of planned capacity of Waste Disposal Facilities: (Months)				
Number of Legacy waste dumpsites in the State/UTs and plan for their Remediation:	nil		Nil	

**B.2.3. Decentralised units namely pipe compost, kitchen bin, bio composter, biobin, pot bin, biogas plant.**

Name of District	Kollam			
Name of Municipality	Karunagapally	Paravur (South)	Punalur	Kottarakara
No of units supplied:	Ring Compost - 1900 Biogas-27	75 biogas, 300 pipe compost	1250 Biogas, 5000 Pipe Compost,6500 Compost pit	Bucket Compost 485 Ring compost 522 Compost pit 4400 Biogas plant 360 Biobin -560
No of units working:	22	biogas 20	1250 Biogas, 5000 Pipe Compost,6500 Compost pit	

No of units not working:	5	biogas-55, pipe compost 300	Nil	
Reason for failure:	lack of maintenance	Smell and worms	All are maintaining properly	
Total quantity of Waste treated through decentralised facilities (TPD) as reported by localbodies	0	0.6	16.77	6.3

### B.2.3.1 Details of Decentralised Facilities as reported by Localbodies

Name of District		Kollam			
Name of Municipality		Karunagapally	Paravur (South)	Punalur (Model Town)	Kottarakara
pipe compost / Ring compost	Total no of units supplied	1900	300	5000	Not supplied
	No of units working	1900		5000	.
	No of units not working			Nil	
	Quantity of waste treated using pipe composting facilities (TPD)	2.85	0.3	10 TPD	
Kitchen bin/Bucket compost	Total no of units supplied		0		485
	No of units working		0		485
	No of units not working		0		
	Quantity of waste treated using kitchen bin facilities (TPD)		0		0.72
Biogas plant (Household level)	Total no of units supplied		75	1250	360
	No of units working		15	1250	360
	No of units not working		60	Nil	
	Quantity of waste treated using biogas plant (TPD)		0.22		0.54
Biogas plant (Community level)	Total no of units supplied		0		120
	No of units working		0		120
	No of units not working		0		



Name of District		Kollam			
Name of Municipality		Karunagapally	Paravur (South)	Punalur (Model Town)	Kottarakara
	Quantity of waste treated using biogas plant (TPD)		0		0.09
Aerobins (Community level)	Total no of units supplied		4 units	27	
	No of units working		4 units	27	
	No of units not working		0	Nil	
	Quantity of waste treated using aerobins (TPD)		0.38 ton	0.27 TPD	
biocomposter, biobin, pot bin	Total no of units supplied	250	0		560
	No of units working		0		560
	No of units not working		0		
	Quantity of waste treated using these units (TPD)	0.5	0		0.75
Others	Total no of units supplied		0	6000 (compost pit)	4400 Compost pit
	No of units working		0	6000	
	No of units not working		0	Nil	
	Quantity of waste treated using these units (TPD)		0	6 TPD	2.117

### B.3. Municipalities in Pathanamthitta

#### B.3.1. Segregation and Collection

Name of District	Pathanamthitta			
Name of Municipality	Adoor	Pathanamthitta	Thiruvalla	Pandalam
Population (2011)	29171	38002	52883	41604

**B.3.1. Segregation and Collection**

Name of District		Pathanamthitta					
Name of Municipality		Adoor	Pathanamthitta	Thiruvalla	Pandalam		
No of Wards		28	32	39	33		
No of Household		7911	12253	21099	12440		
No of Establishment		1860	2450	6756	1234		
No of Household having segregation at source	Dry	0	750	21099	7464		
	Wet	0	350		957		
No of Establishment having segregation at source	Dry	65	150	6756	7464		
	Wet	0	75		0		
Total waste generated (TPD)		8.75	4		3		
Total biodegradable waste generated			3		2.5		
Total non biodegradable waste generated			1		0.5		
Total waste collected (TPD)							
Total waste treated (TPD)	Centralised units	1			1.5		
	decentralised units		2				
	Other						
Total waste treated (TPD)		1	2				
D2D Collection	Households	Number	Dry	0	300	21099	7464
			Wet	0	0	-	0
		Percentage	Dry	0	2.5	100	60
			Wet	0	0		0
	Collection Frequency	Dry		weekly	once in a month	2 days per Week	
		Wet		0			
	Establishments	Number	Dry	65	150	6756	987
			Wet	0	150		130
		Percentage	Dry	3.5	6.2	100	74.5
			Wet	0	6.2	0	0
		Collection Frequency	Dry		daily	Weekly twice	Once in a week
	Wet			daily		Daily	
No of collectors		4	16+1 (1 agency)	55	83		

**B.3.1. Segregation and Collection**

Name of District		Pathanamthitta			
Name of Municipality		Adoor	Pathanamthitta	Thiruvalla	Pandalam
	No of vehicles used	1	2	3	2
No. having source level treatment of wet waste in operation	Household	1250 Pipe Compost, 250 Ring Compost	500	-	40
	Establishment		15	1140	5
Percentage having source level treatment of wet waste in operation	Household	0	Nil		0.32
	Establishment	65	Nil	90%	0.37
No. disposing to centralised system	Household		0		0
	Establishment		0		130
Percentage having disposal to centralised system	Household	0	0		0
	Establishment	65	0		2.56
No. existing	MCF	1	3	1	1
	RRF	0	1		1
No. needed	MCF	4	59	5	3
	RRF	0	4	1	0
Qty of dry waste given to	Registered recyclers for plastic	0	0		0
	Registered recycler for e-waste	0	0		0
	Registered recycler for domestic hazardous waste	0	0		0
	Recyclers for other wastes	0	0		0
	Clean Kerala Company	0	2		183.56 kg
	Road tarring	0	0		
	Cement kiln	0	0		
	Landfill	0	0		
Total					

**B.3.1. Segregation and Collection**

<b>B.3.1. Segregation and Collection</b>				
<b>Name of District</b>	<b>Pathanamthitta</b>			
<b>Name of Municipality</b>	<b>Adoor</b>	<b>Pathanamthitta</b>	<b>Thiruvalla</b>	<b>Pandalam</b>
User fee	75000/-per month	Household- Rs-60/- Per month Establishment-Asper quantity	House hold- Rs-60/- Per month Establishment-Asper quantity	50 Rs per Household
Remarks		Establishment waste collected through a pvt agency aproved by council		Fee Imposed on the basis of Quantity of Waste of waste in Establishment

**B.3.2. Centralised System**

<b>Name of District</b>	<b>Pathanamthitta</b>			
<b>Name of Municipality</b>	<b>Adoor</b>	<b>Pathanamthitta</b>	<b>Thiruvalla</b>	<b>Pandalam</b>
Quantity of Waste generated (TPD) based on population	12	16	22	17
Quantity of Waste generated (TPD)	10.96TPD	4		2
Quantity of Waste collected (TPD)	10.96TPD	3		1.5
Quantity of Waste treated (TPD)		1		1.5
Quantity of Waste processed in Composting Sites (TPD)	0.8TPD			
Quantity of Waste processed in biomethanation (TPD)				

Quantity of Waste processed in waste to energy plants (TPD)	Nil			
Quantity of Waste processed in Landfill (TPD)	Nil			1.5
Existing capacity of Waste Processing Facilities: (TPD)	10.96TPD			2
Existing capacity of Waste Disposal Facilities: (TPD)	10.96TPD			
Planned Capacity of Waste Processing Facilities (TPD)	18Months			
Planned Capacity of Waste Disposal Facilities (TPD)	18Months			
Timeframe for installation of planned capacity of Waste Processing Facilities: (Months)	18Months			
Timeframe for installation of planned capacity of Waste Disposal Facilities: (Months)	18Months			
Number of Legacy waste dumpsites in the State/UTs and plan for their Remediation:				

**B.3.3. Decentralised units namely pipe compost, kitchen bin, bio composter, biobin, pot bin, biogas plant.**

Name of District	Pathanamthitta
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Name of Municipality	Adoor	Pathanamthitta	Thiruvalla	Pandalam
No of units supplied:	1210, 8 Units, 9 Nos	Ring 350, Bio Bin 150, Bio Gas 250		40
No of units working:	1010, 3 Unit, 9 Nos	700		40
No of units not working:	200, 5 Unit, 9 Nos	50		0
Reason for failure:	Mismanagement from beneficiaries, construction not completed	lack of Proper maintenance		0
Total quantity of waste treated through decentralised facilities (TPD) as reported by localbodies				

### B.3.3.1 Details of Decentralised Facilities as reported by Localbodies

Name of District		Pathanamthitta			
Name of Municipality		Adoor	Pathanamthitta	Thiruvalla	Pandalam
pipe compost	Total no of units supplied	1210		4000	0
	No of units working	1010		2360	0
	No of units not working	200		1640	0
	Quantity of waste treated using pipe composting facilities (TPD)			492 TPD	0
Kitchen bin	Total no of units supplied	NIL		Nil	0
	No of units working	NIL		Nil	0
	No of units not working	NIL		Nil	0
	Quantity of waste treated using kitchen bin facilities (TPD)	NIL		Nil	0
Biogas plant (Household level)	Total no of units supplied	NIL		300	40
	No of units working	NIL		170	40
	No of units not working	NIL		130	0
	Quantity of waste treated using biogas plant (TPD)	NIL		39 ton	0
Biogas plant (Community level)	Total no of units supplied	NIL		Nil	0
	No of units working	NIL		Nil	0
	No of units not working	NIL		Nil	0
	Quantity of waste treated using biogas plant (TPD)	NIL		Nil	0

Name of District		Pathanamthitta			
Name of Municipality		Adoor	Pathanamthitta	Thiruvalla	Pandalam
Aerobins (Community level)	Total no of units supplied	Thumboor muzhi model Aerobic Compost Unit			0
	No of units working	6 Bins, 3 units		Nil	0
	No of units not working	NIL		Nil	0
	Quantity of waste treated using aerobins (TPD)	NIL		Nil	0
biocomposter, biobin, pot bin	Total no of units supplied	NIL		Nil	0
	No of units working	NIL		Nil	0
	No of units not working	NIL		Nil	0
	Quantity of waste treated using these units (TPD)	NIL		Nil	0
Others	Total no of units supplied	NIL		Nil	0
	No of units working	Ring compost-250		Nil	0
	No of units not working			Nil	0
	Quantity of waste treated using these units (TPD)			Nil	0

#### B.4. Municipalities in Alappuzha

##### B.4.1. Segregation and Collection

Name of District		Alappuzha					
Name of Municipality		Alappuzha	Chengannur	Cherthala	Kayamkulam	Mavelikara	Haripad
Population (2011)		174000	23456	45827	71376	26421	15588
No of Wards		52	27	35	44	28	29
No of Household		48000	9000	14913	17145	7365	9129
No of Establishment		9800	2000	2452	2250	1414	1423
No of Household having segregation at source	Dry	45231	1234	1050	9300	6345	8000
	Wet	45231	0		0	1240	0
No of Establishment having segregation at source	Dry	8054	678		1000	645	80
	Wet	8054	234	232	0	340	0
Total waste generated (TPD)		58	5	15	15	6.5	1.5
Total biodegradable waste generated		44		11		3.5	0.3

<b>B.4.1. Segregation and Collection</b>									
<b>Name of District</b>			<b>Alappuzha</b>						
<b>Name of Municipality</b>			<b>Alappuzha</b>	<b>Chengannur</b>	<b>Cherthala</b>	<b>Kayamkulam</b>	<b>Mavelikara</b>	<b>Haripad</b>	
Total non biodegradable waste generated			14		4		1.5	8.3	
Total waste collected (TPD)									
Total waste treated (TPD)	Centralised units		0	0	0	0	0	0	
	decentralised units		48	4	0		4	1.35	
	Other		10						
Total waste treated (TPD)			58	0.9	10		4	1.3	
D2D Collection	Households	Number	Dry	45000	1000	11000	5400	4487	8500
			Wet	45000	0	0	0	0	Nil
		Percentage	Dry	93.8	11.12	73.76	31	62.5	93.75
			Wet	93.8	0	0	0	0	
		Collection Frequency	Dry	MONTHLY	ONCE A MONTH	ONCE A MONTH	ONCE A MONTH	ONCE A MONTH	Monthly
			Wet	N A	0	0	Nil	ONCE A MONTH	----
	Establishments	Number	Dry	8054	500	128	1000	0	350
			Wet	6203		0	0	142	25
		Percentage	Dry	82.2	25	5.22	44.5	0	24.6
			Wet	63.3	0	0	0	10	1.76
		Collection Frequency	Dry	WEEKELY		DAILY	ONCE A MONTH	0	Monthly
			Wet	DAILY		0	Nil	DAILY	---
	No of collectors			76	25	35	9	6	30
	No of vehicles used			6	1	1	2	2	1
No. having source level treatment of wet waste in operation		Household	17200	0	NIL	2500	22		
		Establishment	102		NIL	90	0		
Percentage having source level treatment of wet waste in operation		Household	35		0	20	22		
		Establishment	1		0	4	0		
No. disposing to centralised		Household	0		NIL	80	0		



<b>B.4.1. Segregation and Collection</b>							
<b>Name of District</b>		<b>Alappuzha</b>					
<b>Name of Municipality</b>		<b>Alappuzha</b>	<b>Chengannur</b>	<b>Cherthala</b>	<b>Kayamkulam</b>	<b>Mavelikara</b>	<b>Haripad</b>
system	Establishment	0		NIL	0	0	
Percentage having disposal to centralised system	Household	0		0	0.4	0	
	Establishment	0		0	0	0	
No. existing	MCF	23	1	1	0	1	
	RRF	3	0	1	1	1	
No. needed	MCF	15	1	1	1	1	
	RRF	5	1	1	1	1	
Qty of dry waste given to	Registered recyclers for plastic	0	0	0		0	0
	Registered recycler for e-waste	0	0	0		0	0
	Registered recycler for domestic hazardous waste	0	0	0		0	0
	Recyclers for other wastes	0	0	0		0	0
	Clean Kerala Company	0	0	0		0	8.6
	Road tarring	1.5	0	0		0	1.5
	Cement kiln	0.05	0	0		7.8	0
	Landfill	0	0	0		0	0
	Others	0	3	0		0	0
	Total		1.505	3	0		1.5

<b>B.4.1. Segregation and Collection</b>						
<b>Name of District</b>	<b>Alappuzha</b>					
<b>Name of Municipality</b>	<b>Alappuzha</b>	<b>Chengannur</b>	<b>Cherthala</b>	<b>Kayamkulam</b>	<b>Mavelikara</b>	<b>Haripad</b>
User fee	House hold -Rs 40 per month (dry waste)	House hold- Rs-50/- Per month Establishment- rs 100,200,300 as per category	NIL		30	
Remarks	People bringing waste to their nearby aerobic compost unit and no user fee is charged by the ULB		Need one more mcf & rrf for proper functioning			

**B.4.2. Centralised System**

<b>Name of District</b>	<b>Alappuzha</b>					
<b>Name of Corporation /Municipality /Panchayath</b>	<b>Alappuzha</b>	<b>Chengannur</b>	<b>Cherthala</b>	<b>Kayamkulam</b>	<b>Mavelikara</b>	<b>Haripad</b>
Quantity of Waste generated (TPD) based on population	72	10	19	30	11	13
Quantity of Waste generated (TPD)	58/51.388/40		3	15	6.5	1.5
Quantity of Waste collected (TPD)	35/2/00/TPD	0.5	2	3	3.5	1
Quantity of Waste treated (TPD)		0.5	2	2.5	3	1
Quantity of Waste processed in Composting Sites (TPD)		0.4	1	2	1	1
Quantity of Waste processed in biomethanation (TPD)		0		1	0	Nil

Quantity of Waste processed in waste to energy plants (TPD)		0		0	0	Nil
Quantity of Waste processed in Landfill (TPD)		0		2	100	Nil
Existing capacity of Waste Processing Facilities: (TPD)		0.5	0.52	6 Aerobic Unit	4	Nil
Existing capacity of Waste Disposal Facilities: (TPD)		0.5		2 ton/Day	0.1	1.5
Planned Capacity of Waste Processing Facilities (TPD)		0.5		2	2.5	Nil
Planned Capacity of Waste Disposal Facilities (TPD)		0.5		0	0	0.03
Timeframe for installation of planned capacity of Waste Processing Facilities: (Months)	5 Months				1 Year	12 Months..
Timeframe for installation of planned capacity of Waste Disposal Facilities: (Months)	5	7		8	3	5
Number of Legacy waste dumpsites in the State/UTs and plan for their Remediation:	1		0			0

**B.4.3. Decentralised units namely pipe compost, kitchen bin, bio composter, biobin, pot bin, biogas plant.**

Name of District	Alappuzha					
	Alappuzha	Chengannur	Cherthala	Kayamkulam	Mavelikara	Haripad
No of units supplied:	17200	568	1050	2340	817	457
No of units working:	16400	568	958	2338	840	457
No of units not working:	800		92	650	27	0

Reason for failure:	Noproper handling		Not properly maintained	not properly manage	Lack of Maintanance by beneficieries	NA
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**B.4.3.1. Details of Decentralised Facilities as reported by Localbodies**

Name of District		Alappuzha					
Name of Municipality		Alappuzha	Chengannur	Cherthala	Kayamkulam	Mavelikara	Haripad
pipe compost	Total no of units supplied	0	NIL	Nil	1920	0	Nil
	No of units working	0	NIL	Nil		0	Nil
	No of units not working	0	NIL	Nil		0	NA
	Quantity of waste treated using pipe composting facilities (TPD)	0	NIL	Nil		0	NA
Kitchen bin	Total no of units supplied	9000	0	0		0	Nil
	No of units working	9000	0	0		0	NA
	No of units not working	0	0	0		0	NA
	Quantity of waste treated using kitchen bin facilities (TPD)	6	0	0		0	NA
Biogas plant (Household level)	Total no of units supplied	150	130	389	364	817	72
	No of units working	150	130	39	364	242	72
	No of units not working	0	0	350	364	575	0
	Quantity of waste treated using biogas plant (TPD)	1	.03TONE	100 KG		112 Kg	350 Kg
Biogas plant (Community level)	Total no of units supplied	0	0	0	6	0	Nil
	No of units working	0	0	0	6	0	NA
	No of units not working	0	0	0	6	0	NA
	Quantity of waste treated using biogas plant (TPD)	0	0	0	6	0	NA
Aerobins (Community)	Total no of units supplied	32	2	26	Nil	4	Nil
	No of units working	32	2	26		4	NA

Name of District		Alappuzha					
Name of Municipality		Alappuzha	Chengannur	Cherthala	Kayamkulam	Mavelikara	Haripad
level)	No of units not working	0	2	0		0	NA
	Quantity of waste treated using aerobins (TPD)	37	.04TONE	2 TON/ UNIT		126 Kg	NA
biocomposter, biobin, pot bin	Total no of units supplied	0	703	1750 UNIT BIOBIN		0	Nil
	No of units working	0	703	0		0	NA
	No of units not working	0	0	0		0	NA
	Quantity of waste treated using these units (TPD)	0	0.05	0	Nil	0	NA
Others	Total no of units supplied	0	Nil	Nil	Nil	0	Nil
	No of units working	0	Nil	Nil		0	NA
	No of units not working	0	Nil	Nil		0	NA
	Quantity of waste treated using these units (TPD)	0	Nil	Nil	Nil		NA

### B.5. Municipalities in Kottayam

#### B.5.1. Segregation and Collection

Name of District		Kottayam					
Name of Municipality		Changanassery	Ettumanoor	Erattupetta	Kottayam	Pala	Vaikom
Population (2011)		127987	26423	29675	136812	123000	23234
No of Wards		37	35	28	52	26	26
No of Household		16606	110129	7686	48273	5280	7843
No of Establishment		3000	1807	1282	6568	1900	1782
No of Household having segregation at source	Dry	16000	10964	23	8	4500	0
	Wet	16000	10964	11	24	250	0

<b>B.5.1. Segregation and Collection</b>									
<b>Name of District</b>				<b>Kottayam</b>					
<b>Name of Municipality</b>				<b>Changanassery</b>	<b>Ettumanoor</b>	<b>Erattupetta</b>	<b>Kottayam</b>	<b>Pala</b>	<b>Vaikom</b>
No of Establishment having segregation at source		Dry		2800	1801	6	14		0
		Wet		2000		2	6		0
Total waste generated (TPD)				15	5	6	30	4.2	
Total biodegradable waste generated									
Total non biodegradable waste generated									
Total waste collected (TPD)				2	4.5	4	6	4.2	
Total waste treated (TPD)	Centralised units								
	decentralised units								
	Other								
Total waste treated (TPD)				2	4.5	2.5	3	4.2	
D2D Collection	Households	Number	Dry	404	10964	4212	8	1815	0
			Wet			1866	24	0	0
		Percentage	Dry	2.5	10	54.9	0.1	34.4	0
			Wet	0	0	24.3	0.1	0	0
		Collection Frequency	Dry	monthly	monthly	Monthly	2 TIMES IN A MONTH	Weekly	0
			Wet		0	Monthly	0	Nil	0
	Establishments	Number	Dry	Nil	1027	22	14	94	0
			Wet	Nil	0	26	6	0	0
		Percentage	Dry		56.9	1.8	0.3	5	0
			Wet		0	2.1	0.1	0	0
		Collection Frequency	Dry	Nil	Monthly	daily	0	weekly	once in month
			Wet	Nil	0	daily	3 TON PER DAY	Nil	daily
No of collectors				Haritha Karma Sena	56	62	104	14	64
No of vehicles used					1	2	13	2	1

<b>B.5.1. Segregation and Collection</b>							
<b>Name of District</b>		<b>Kottayam</b>					
<b>Name of Municipality</b>		<b>Changanassery</b>	<b>Ettumanoor</b>	<b>Erattupetta</b>	<b>Kottayam</b>	<b>Pala</b>	<b>Vaikom</b>
No. having source level treatment of wet waste in operation	Household	2600	10964	5432	48273	5162	0
	Establishment	70	118		Not started	250	0
Percentage having source level treatment of wet waste in operation	Household	18%	100%	68		5162	0
	Establishment	2.2	100%			250	0
No. disposing to centralised system	Household	1200	Nil	0	0	1815	0
	Establishment	Nil	80	0	0	94	0
Percentage having disposal to centralised system	Household	8%	0			0	0
	Establishment	0	67%			0	0
No. existing	MCF	1	1	1	1	1	1
	RRF	1	1	1	1	0	0
No. needed	MCF	28	35	7	15		0
	RRF	28	1	1	15		0
Qty of dry waste given to	Registered recyclers for plastic						
	Registered recycler for e-waste						
	Registered recycler for domestic hazardous waste						
	Recyclers for other wastes						
	Clean Kerala Company						
	Road tarring						
	Cement kiln						
	Landfill						
	Others						
Total							
User fee		100 Rs per houses	50 for HH 150 for Establishments		61 including cess	60, 120	0

<b>B.5.1. Segregation and Collection</b>						
<b>Name of District</b>	<b>Kottayam</b>					
<b>Name of Municipality</b>	<b>Changanassery</b>	<b>Ettumanoor</b>	<b>Erattupetta</b>	<b>Kottayam</b>	<b>Pala</b>	<b>Vaikom</b>
Remarks					60(for houses) 120(establishments)	0

**B.5.2. Centralised System**

<b>Name of District</b>	<b>Kottayam</b>					
<b>Name of Municipality</b>	<b>Changanassery</b>	<b>Ettumanoor</b>	<b>Erattupetta</b>	<b>Kottayam</b>	<b>Pala</b>	<b>Vaikom</b>
Quantity of Waste generated (TPD) based on population	54	11	13	57	52	10
Quantity of Waste generated (TPD)	15 Tone/day	5	6 ton/day	30 ton	4.2 ton	1.5
Quantity of Waste collected (TPD)	2 tone/day	4.5	4 ton/day	6 ton	4.2 ton	1.5
Quantity of Waste treated (TPD)	2 tone/day	4.5	2.5 ton/day	3 ton/day	4.2 ton	1
Quantity of Waste processed in Composting Sites (TPD)	2 tone	0.5	2.5 ton/day	yes	4.2 ton	0
Quantity of Waste processed in biomethanation (TPD)	Nil	0	nil	0	0	0
Quantity of Waste processed in waste to energy plants (TPD)	Nil	0	nil	0	0	0
Quantity of Waste processed in Landfill (TPD)	Nil	0	nil	0	0	0
Existing capacity of Waste Processing Facilities: (TPD)	2	4.5	24 unit aerobic bin	62 unit aerobic bin\0	pipe compost	0
Existing capacity of Waste Disposal Facilities: (TPD)	2 Tone/day	4.5	10 ton/day	0	0	0



Name of District	Kottayam					
Name of Municipality	Changanassery	Ettumanoor	Erattupetta	Kottayam	Pala	Vaikom
Planned Capacity of Waste Processing Facilities (TPD)	9 TPD	10	0	0	0	0
Planned Capacity of Waste Disposal Facilities (TPD)	100 tone	10	0	0	0	0
Timeframe for installation of planned capacity of Waste Processing Facilities: (Months)	3 months	1	0	0	0	0
Timeframe for installation of planned capacity of Waste Disposal Facilities: (Months)	1 years	3	0	0	0	0
Number of Legacy waste dumpsites in the State/UTs and plan for their Remediation:	one	NA		0	0	0

**B.5.3. Decentralised units namely pipe compost, kitchen bin, bio composter, biobin, pot bin, biogas plant.**

Name of District	Kottayam					
Name of Municipality	Changanassery	Ettumanoor	Erattupetta	Kottayam	Pala	Vaikom
No of units supplied:		6580		1479	5162	125
No of units working:		6548		1479	4500	65
No of units not working:		38			662	0
Reason for failure:	8800 Ring compost 1800 Biobin unit included in 2019- 20 project and is under process	Mishandling	750 biobin included in 2019-20 project and will supply from march 2020		Not properly manage.	

**B.5.3.1. Details of Decentralised Facilities as reported by Localbodies**

Name of District		Kottayam					
Name of Municipality		Changanassery	Ettumanoor	Erattupetta	Kottayam	Pala	Vaikom
pipe compost	Total no of units supplied	0		Nil	429	5162	Nil
	No of units working	0		Nil	429	4500	Nil
	No of units not working			Nil		662	Nil
	Quantity of waste treated using pipe composting facilities (TPD)			Nil	0.7	6.75	Nil
Kitchen bin/ Bucket Compost	Total no of units supplied	250		Nil	Nil		Nil
	No of units working	250		Nil	Nil		Nil
	No of units not working			Nil	Nil		Nil
	Quantity of waste treated using kitchen bin and bucket compost facilities (TPD)	2		Nil	Nil		Nil
Biogas plant (Household level)	Total no of units supplied	0		Nil	1320	1	135
	No of units working	0		Nil	1320	1	135
	No of units not working	0		Nil		..	0
	Quantity of waste treated using biogas plant (TPD)	-		Nil	980kg	5kg.	Nil
Biogas plant (Community level)	Total no of units supplied			Nil	62	1	Nil
	No of units working			Nil	52	1	Nil
	No of units not working			Nil	10	..	Nil
	Quantity of waste treated using biogas plant (TPD)			Nil	Nil		Nil
Aerobins (Community level)	Total no of units supplied	36bins		28	Nil		18
	No of units working	36		28	Nil		0
	No of units not working	0		0	Nil		18
	Quantity of waste treated using aerobins (TPD)	2 tons		300 Kg	Nil	50kg.	0
biocomposter,	Total no of units supplied	250		Nil	Nil		0

Name of District		Kottayam					
Name of Municipality		Changanassery	Ettumanoor	Erattupetta	Kottayam	Pala	Vaikom
biobin, pot bin	No of units working	250		Nil	Nil		0
	No of units not working	0		Nil	Nil		0
	Quantity of waste treated using these units (TPD)	2		Nil	Nil		0
Others	Total no of units supplied	-		Nil	Nil		Nil
	No of units working	-		Nil	Nil		Nil
	No of units not working	-		Nil	Nil		Nil
	Quantity of waste treated using these units (TPD)	-		Nil	Nil		Nil

## B.6. Municipalities in Idukki

### B.6.1. Segregation and Collection

Name of District		Idukki	
Name of Municipality		Thodupuzha	Kattapana
Population (2011)		52045	42646
No of Wards		35	34
No of Household		12604	10419
No of Establishment		3108	2500
No of Household having segregation at source	Dry	10000	7815

<b>B.6.1. Segregation and Collection</b>					
<b>Name of District</b>			<b>Idukki</b>		
<b>Name of Municipality</b>			<b>Thodupuzha</b>	<b>Kattapana</b>	
			Wet	10000	7815
No of Establishment having segregation at source			Dry	2500	2000
			Wet	2200	820
Total waste generated (TPD)			15	12	
Total biodegradable waste generated					
Total non biodegradable waste generated					
Total waste collected (TPD)			5.5	3.24	
Total waste treated (TPD)	Centralised units		1	0	
	decentralised units				
	Other				
Total waste treated (TPD)			5	3.24	
D2D Collection	Households	Number	Dry	11466	7815
			Wet	0	4800
		Percentage	Dry	91	75.1
			Wet	0	46.1
		Collection Frequency	Dry	Weekly	Monthly
			Wet	Nil	nil
	Establishments	Number	Dry	2500	2000
			Wet	80	80
		Percentage	Dry	80.5	80
			Wet	2.6	23.2
Collection Frequency		Dry	Daily	Daily	

<b>B.6.1. Segregation and Collection</b>				
<b>Name of District</b>			<b>Idukki</b>	
<b>Name of Municipality</b>			<b>Thodupuzha</b>	<b>Kattapana</b>
		<b>Wet</b>	<b>Daily</b>	<b>Daily</b>
	No of collectors		75	82
	No of vehicles used		3	2
No. having source level treatment of wet waste in operation	Household		10000	7815
	Establishment		2500	2000
Percentage having source level treatment of wet waste in operation	Household		80	80
	Establishment		80	80
No. disposing to centralised system	Household		0	0
	Establishment		0	0
Percentage having disposal to centralised system	Household		0	0
	Establishment		0	0
No. existing	MCF		2	1
	RRF		1	1
No. needed	MCF		4	2
	RRF		2	0
Qty of dry waste given to (TPD)	Registered recyclers for plastic		0	0
	Registered recycler for e-waste		0	0
	Registered recycler for domestic hazardous waste		0	0
	Recyclers for other wastes		0	0
	Clean Kerala Company		1.28	0
	Road tarring		900 kg	0
	Cement kiln		0	0
	Landfill		0	0
	Others		0	1
	Total			

<b>B.6.1. Segregation and Collection</b>		
<b>Name of District</b>	<b>Idukki</b>	
<b>Name of Municipality</b>	<b>Thodupuzha</b>	<b>Kattapana</b>
User fee	30	20
Remarks	0	

### **B.6.2. Centralised System**

<b>Name of District</b>	<b>Idukki</b>	<b>Idukki</b>
<b>Name of Municipality</b>	<b>Thodupuzha Municipality</b>	<b>Kattappa Municipality</b>
Quantity of Waste generated (TPD) based on population	22	18
Quantity of Waste generated (TPD)	10	4.98
Quantity of Waste collected (TPD)	5.5	3.24
Quantity of Waste treated (TPD)	5	3.24
Quantity of Waste processed in Composting Sites (TPD)	0	3
Quantity of Waste processed in biometanation (TPD)	0	0
Quantity of Waste processed in waste to energy plants (TPD)	1	0
Quantity of Waste processed in Landfill (TPD)	3	0
Existing capacity of Waste Processing Facilities: (TPD)	5	5

<b>Name of District</b>	<b>Idukki</b>	<b>Idukki</b>
<b>Name of Municipality</b>	<b>Thodupuzha Municipality</b>	<b>Kattappa Municipality</b>
Existing capacity of Waste Disposal Facilities: (TPD)	4	4
Planned Capacity of Waste Processing Facilities (TPD)	10	10
Planned Capacity of Waste Disposal Facilities (TPD)	10	10
Timeframe for installation of planned capacity of Waste Processing Facilities: (Months)	18	12
Timeframe for installation of planned capacity of Waste Disposal Facilities: (Months)	18	12
Number of Legacy waste dumpsites in the State/UTs and plan for their Remediation:	0	1

**B.6.3. Decentralised units namely pipe compost, kitchen bin, bio composter, biobin, pot bin, biogas plant**

<b>Name of District</b>	<b>Idukki</b>	
	<b>Thodupuzha</b>	<b>Kattapana</b>
No of units supplied:	1300	1325
No of units working:	1300	1325
No of units not working:	0	0

<b>Name of District</b>	<b>Idukki</b>	
<b>Name of Municipality</b>	<b>Thodupuzha</b>	<b>Kattapana</b>
Reason for failure:	Nil	nil

**B.6.3.1. Details of Decentralised Facilities as reported by Localbodies**

<b>Name of District</b>		<b>Idukki</b>	
<b>Name of Municipality</b>		<b>Thodupuzha</b>	<b>Kattapana</b>
pipe compost	Total no of units supplied	69	
	No of units working	69	
	No of units not working	Nil	
	Quantity of waste treated using pipe composting facilities (TPD)	10 k g	
Kitchen bin / Bucket compost	Total no of units supplied	69	328
	No of units working	69	328
	No of units not working	Nil	
	Quantity of waste treated using kitchen bin facilities (TPD)	10 kg	1.3
Biogas plant (Household level)	Total no of units supplied	928	25
	No of units working	928	25
	No of units not working	nil	
	Quantity of waste treated using biogas plant (TPD)	500 kg	0.25
Biogas plant (Community level)	Total no of units supplied	2	
	No of units working	2	
	No of units not working	nil	
	Quantity of waste treated using biogas plant (TPD)	1000 k g	
Aerobins (Community level)	Total no of units supplied	Nil	
	No of units working	Nil	
	No of units not working	Nil	



Name of District		Idukki	
Name of Municipality		Thodupuzha	Kattapana
	Quantity of waste treated using aerobins (TPD)	0	
biocomposter, biobin, pot bin	Total no of units supplied	34	
	No of units working	34	
	No of units not working	34	
	Quantity of waste treated using these units (TPD)	9 k g	
Others	Total no of units supplied	nil	
	No of units working	nil	
	No of units not working	nil	
	Quantity of waste treated using these units (TPD)	nil	

### B.7. Municipalities in Ernakulam

#### B.7.1. Segregation and Collection

Name of District		Ernakulam						
Name of Municipality		Aluva	Angamaly	Eloor	Koothattukulam	Kalamassery	Kothamangalam	Muvattupuzha
Population (2011)		24110	33465	31468	17942	71038	114574	30397
No of Wards		26	30	31	25	42	31	28
No of Household		5372	8421	10307	4832	27924	12000	7414
No of Establishment		2372	2500	1015	1072	3360	2950	
No of Household having segregation at source	Dry	5372	8421	10307	5	11800	1075	1800
	Wet	5372	4500	10307	5	11800	source level management	source level management
No of Establishment having segregation at source	Dry	2372	2500	925	5	1345	600	200
	Wet	2372	2500	155	195	1345	800	250
Total waste generated (TPD)		8.97	11	14	1	17	14	15
Total biodegradable waste generated		7.17	10			16	7.7	10

<b>B.7.1. Segregation and Collection</b>										
<b>Name of District</b>				<b>Ernakulam</b>						
<b>Name of Municipality</b>				<b>Aluva</b>	<b>Angamaly</b>	<b>Eloor</b>	<b>Koothattukulam</b>	<b>Kalamassery</b>	<b>Kothamangalam</b>	<b>Muvattupuzha</b>
Total non biodegradable waste generated				1.79	1			1	6.3	5
Total waste collected (TPD)										
Total waste treated (TPD)	Centralised units			4	1		1		1.5	
	decentralised units			3.128	7				5	
	Other				2					
Total waste treated (TPD)					10				6.5	
D2D Collection	Households	Number	Dry	5200	7500	Harithakar masena	nil	11800	450	500
			Wet	1351	0	Source level management		11800	source level management	source level management
		Percentage	Dry	96	89			42.3	3.8	6.8
			Wet	25	0		0	42.3		
		Collection Frequency	Dry	monthly	0	Monthly		weekly	MONTHLY	monthly
			Wet	daily	0	not collected		alternate days	NOT COLLECTED	not collected
	Establishments	Number	Dry	520	0	925		1345	300	200
			Wet	150	25	155		1345	240	250
		Percentage	Dry	23.5	0	91.2	0	40.1	10.2	
			Wet	6.8	1	15.3	0	40.1	8.2	
		Collection Frequency	Dry	weekly	0	monthly		twice in a week	MONTHLY	monthly
			Wet	daily	daily	not collected		daily	MONTHLY	monthly
No of collectors						81	0	19	2	49
No of vehicles used						2	0	4	1	auto 17,tipper lorry 4

B.7.1. Segregation and Collection								
Name of District		Ernakulam						
Name of Municipality		Aluva	Angamaly	Eloor	Koothattukulam	Kalamassery	Kothamangalam	Muvattupuzha
No. having source level treatment of wet waste in operation	Household	1673	3500	598	18	nil	1800	2000
	Establishment	80	2500	30	12	130	collected by harithakarmasena	collected by haritha karmasena
Percentage having source level treatment of wet waste in operation	Household	80	42	85	-	0	95	90
	Establishment	80	80	80	-	4	95	90
No. disposing to centralised system	Household	0	NIL	Nil	-	11800	1	1
	Establishment	0	NIL	Nil	-	1345	1	1
Percentage having disposal to centralised system	Household	0	NA	NA	-	40	100	100
	Establishment	0	NA	NA	-	40	100	100
No. existing	MCF	nil	NIL	1	Nil	1	1	1
	RRF	1	NIL	0	Nil	1	1	0
No. needed	MCF	3	5	5	6	2	11	2
	RRF	0	1	1	1	2	0	1
Qty of dry waste given to	Registered recyclers for plastic	0.083	1			0	0	
	Registered recycler for e-waste	0.8	0			0	0	
	Registered recycler for domestic hazardous waste	0.5	0			0	0	
	Recyclers for other wastes	0	0			0	0	
	Clean Kerala Company	0.208	0			0	Linkage with clean kerala	
	Road tarring	0	0			0	0	
	Cement kiln	0.0038	0			0	0	
	Landfill	0	0			0	0	
Others		0			0	0		

<b>B.7.1. Segregation and Collection</b>								
<b>Name of District</b>		<b>Ernakulam</b>						
<b>Name of Municipality</b>		<b>Aluva</b>	<b>Angamaly</b>	<b>Eloor</b>	<b>Koothattukulam</b>	<b>Kalamassery</b>	<b>Kothamangalam</b>	<b>Muvattupuzha</b>
	Total		1			0	6.3	
	User fee	50	Rs.50	50 Rs.	-	Rs.100/month/house, Rs.5/kg for wet, Rs10/kg for dry waste for hotel and others	Rs. 50/house and Rs. 80 - 100/shops	50
	Remarks				-			

**B.7.3. Centralised System**

<b>Name of District</b>	<b>Ernakulam</b>						
<b>Name of Corporation /Municipality /Panchayath</b>	<b>Aluva</b>	<b>Angamaly</b>	<b>Eloor</b>	<b>Koothattukulam</b>	<b>Kalamassery</b>	<b>Kothamangalam</b>	<b>Muvattupuzha</b>
Quantity of Waste generated (TPD) based on population	10	14	14	8	30	48	13
Quantity of Waste generated (TPD)	10	10	10	0.6	14	5	5
Quantity of Waste collected (TPD)	8	1	2		14	5	5
Quantity of Waste treated (TPD)	8	0	2		14	5	3
Quantity of Waste processed in Composting Sites (TPD)	nil	nil	1		Nil	nil	3
Quantity of Waste processed in biomethanation (TPD)	nil	nil	1		Nil	nil	Nil
Quantity of Waste processed in waste to energy plants (TPD)	nil	nil	Nil		Nil	nil	Nil
Quantity of Waste processed in Landfill	nil	nil	Nil		Nil	nil	Nil

(TPD)							
Existing capacity of Waste Processing Facilities: (TPD)	nil	nil	15 TPD (5 Unit)		Nil	5	3
Existing capacity of Waste Disposal Facilities: (TPD)	nil	nil	15 TPD (5 Unit)		Nil	NA	Nil
Planned Capacity of Waste Processing Facilities (TPD)	nil	nil	NA		Na	nil	Nil
Planned Capacity of Waste Disposal Facilities (TPD)	nil	nil	Na		NA	6 months	Nil
Timeframe for installation of planned capacity of Waste Processing Facilities: (Months)	na	na	Na		NA	nil	Nil
Timeframe for installation of planned capacity of Waste Disposal Facilities: (Months)	na	na	Na		NA	6 months	Nil
Number of Legacy waste dumpsites in the State/UTs and plan for their Remediation:	nill	na	NA		NA	NA	Yes

**B.7.3. Decentralised units namely pipe compost, kitchen bin, bio composter, biobin, pot bin, biogas plant**

Name of District	Ernakulam						
	Aluva	Angamaly	Eloor	Koothattukulam	Kalamassery	Kothamangalam	Muvattupuzha
No of units supplied:	1543	2038	598	Nil	Nil	7602	1224
No of units working:	1543	2038	326	Nil	Nil		1000
No of units not working:	0		272	Nil	Nil		224

Reason for failure:	na		Flood	Not established	Nil	nil	flood
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**B.7.3.1. Details of Decentralised Facilities as reported by Localbodies**

Name of District		Ernakulam						
Name of Municipality		Aluva	Angamaly	Eloor	Koothattukulam	Kalamassery	Kothamangalam	Muvattupuzha
pipe compost	Total no of units supplied	43	1500				nil	1175
	No of units working	43	1500					
	No of units not working	NIL						
	Quantity of waste treated using pipe composting facilities (TPD)	0.055	2					
Kitchen bin	Total no of units supplied	10					10000	24
	No of units working	10					10000	
	No of units not working	NIL					0	
	Quantity of waste treated using kitchen bin facilities (TPD)	NIL					0	2kg/day
Biogas plant (Household level)	Total no of units supplied	234	338				202	15
	No of units working	234					202	15
	No of units not working						0	0
	Quantity of waste treated using biogas plant (TPD)	1.17	1				1	
Biogas plant (Community level)	Total no of units supplied	NIL					0	
	No of units working	NIL					0	
	No of units not working	NIL					0	
	Quantity of waste treated using biogas plant (TPD)	NIL					0	
Aerobins (Community level)	Total no of units supplied	10					0	50
	No of units working	10					0	
	No of units not working						0	
	Quantity of waste treated using aerobins (TPD)	0.05					0	

Name of District		Ernakulam						
Name of Municipality		Aluva	Angamaly	Eloor	Koothattukulam	Kalamassery	Kothamangalam	Muvattupuzha
biocomposter, biobin, pot bin	Total no of units supplied	1060	200				0	
	No of units working						0	
	No of units not working						0	
	Quantity of waste treated using these units (TPD)	1.59	0.1				0	
Others	Total no of units supplied	206 Compost pit					6000 Compost pit	
	No of units working	206						
	No of units not working	NIL						
	Quantity of waste treated using these units (TPD)	0.263					3	

## B.7. Municipalities in Ernakulam

### B.7.1. Segregation and Collection

Name of District		Ernakulam					
Name of Municipality		North Paravur	Maradu	Perumbavoor	Piravam	Thrikkakkara	Thripunithura
Population (2011)		31503	44704	28110	27229	77319	92522
No of Wards		29	33	27	27	43	49
No of Household		8964	53305	10495	8905	31230	29495
No of Establishment		2500	1475	3364	1155	958	3400
No of Household having segregation at source	Dry	6089		10388	8905	31230	25690
	Wet	source level management		3364	NIL	31230	26730
No of Establishment having segregation at source	Dry	1975		5860	1155	68	2920
	Wet	200		0	0	0	2860
Total waste generated (TPD)		14	15.84	9.5	5.84	6	6
Total biodegradable waste generated		8	0	6.5	2.64	2.5	4.5

<b>B.7.1. Segregation and Collection</b>									
<b>Name of District</b>			<b>Ernakulam</b>						
<b>Name of Municipality</b>			<b>North Paravur</b>	<b>Maradu</b>	<b>Perumbavoor</b>	<b>Piravam</b>	<b>Thrikkakkara</b>	<b>Thripunithura</b>	
Total non biodegradable waste generated			6	0	3	3.2	3.5	1.5	
Total waste collected (TPD)			3.12		3.2	0.4	4	4.5	
Total waste treated (TPD)	Centralised units		3		0	0.25	0	1	
	decentralised units		5			2.39	0	0	
	Other		0			3.2	0	0	
Total waste treated (TPD)			8			5.84			
D2D Collection	Households	Number	Dry	6089	6500	0	3621	31230	25690
			Wet	source level management	source level management	0	0	31230	26730
		Percentage	Dry	68	12.2	0	40.7	100	87.1
			Wet			0	0	100	90.7
		Collection Frequency	Dry	monthly	monthly	Twicw in a month	monthly	daily	Daily
			Wet	not collected	not collected	0	0	daily	Daily
	Establishments	Number	Dry	1975	100	0	545	680	2920
			Wet	200	200	0	0	278	2860
		Percentage	Dry	79	6.8	0	47.2	71	85.9
			Wet	8	13.6	0	0	29.1	84.2
		Collection Frequency	Dry	monthly	monthly	0	daily	daily	Daily
			Wet	not collected	not collected	0	0	daily	Daily
	No of collectors					185	66	12	64
	No of vehicles used					5	0	1	2
No. having source level treatment of wet waste in operation		Household	1800	20	1671	8905	31	26730	
		Establishment	collected by the municipality	not collected	96	32	0	2860	
Percentage having source level treatment of wet waste in operation		Household	100	70	0	100%	0.50%	40%	
		Establishment	100	80	0	100%	0	65%	



<b>B.7.1. Segregation and Collection</b>							
<b>Name of District</b>		<b>Ernakulam</b>					
<b>Name of Municipality</b>		<b>North Paravur</b>	<b>Maradu</b>	<b>Perumbavoor</b>	<b>Piravam</b>	<b>Thrikkakkara</b>	<b>Thripunithura</b>
No. disposing to centralised system	Household	29	1		3621	0	450
	Establishment	1	1		545	0	Nil
Percentage having disposal to centralised system	Household	100	65		40%	nil	Nil
	Establishment	100	70		47%	nil	Nil
No. existing	MCF	1	4	1	1	nil	1
	RRF	1	1	1	1	nil	Nil
No. needed	MCF	10	29	3	5	43	48
	RRF	3	1	1	2	1	49
Qty of dry waste given to	Registered recyclers for plastic	0	0	0	0	0	0
	Registered recycler for e-waste	0	0		0	0	0
	Registered recycler for domestic hazardous waste	0	0		0	0	0
	Recyclers for other wastes	0	0		0	0	0
	Clean Kerala Company	0	0		Linkage with clean kerala	0	0
	Road tarring	2 KM Road taring	0		0	0	0
	Cement kiln	0	0		0	0	0
	Landfill	0	0		0	0	0
	Others	1.5	0		0	0	0
	<b>Total</b>	1.5	0		3.2	0	0
User fee		50 per house	30 per house, 100 Establishment	Rs.30/- for houses and rupess 50/- for shops/month	Yes.	130 /- per house	3.50/kg

<b>B.7.1. Segregation and Collection</b>						
<b>Name of District</b>	<b>Ernakulam</b>					
<b>Name of Municipality</b>	<b>North Paravur</b>	<b>Maradu</b>	<b>Perumbavoor</b>	<b>Piravam</b>	<b>Thrikkakkara</b>	<b>Thripunithura</b>
Remarks	in institution rs 100			Varies in commercial area . Rs. 50/- per month from Household		

**B.7.2. Centralised System**

<b>Name of District</b>	<b>Ernakulam</b>					
<b>Name of Corporation /Municipality /Panchayath</b>	<b>North paravur</b>	<b>Maradu</b>	<b>Perumbavoor</b>	<b>Piravom</b>	<b>Thrikkakara</b>	<b>Tripunithura</b>
Quantity of Waste generated (TPD) based on population	14	19	12	12	33	39
Quantity of Waste generated (TPD)	12.27	nil	10	1.54	5 TON	5 tonne
Quantity of Waste collected (TPD)	3.12	nil	3.2	0.4	4 TON	4.50 tonne
Quantity of Waste treated (TPD)	3.120/day	nil	2	0.4	Treated at Brahmapuram Plant	Composting at Brahmapuram Plant (Ownership Kochi Corporation)
Quantity of Waste processed in Composting Sites (TPD)	3.12	nil	2	0.8	NIL	Nil
Quantity of Waste processed in biometanation (TPD)	na	nil	0	0	NIL	Nil
Quantity of Waste processed in waste to energy plants (TPD)	na	nil	0	0.34	NIL	Nil
Quantity of Waste processed in Landfill (TPD)	na	nil	1.2	0	NIL	NA

Name of District	Ernakulam					
Name of Corporation /Municipality /Panchayath	North paravur	Maradu	Perumbavoor	Piravom	Thrikkakara	Tripunithura
Existing capacity of Waste Processing Facilities: (TPD)	3.41	Nil	2	1 TPD	NIL	NA
Existing capacity of Waste Disposal Facilities: (TPD)	na	Nil	2	1 TPD	NIL	NA
Planned Capacity of Waste Processing Facilities (TPD)	3.41	Nil	2	2	3 TON	NA
Planned Capacity of Waste Disposal Facilities (TPD)	3.41		2	2	NA	NA
Timeframe for installation of planned capacity of Waste Processing Facilities: (Months)	na	Nil	6	12	NA	NA
Timeframe for installation of planned capacity of Waste Disposal Facilities: (Months)	na	Nil	6	12	NA	NA
Number of Legacy waste dumpsites in the State/UTs and plan for their Remediation:	yes	Na	NA	0	NA	NA

**B.7.3. Decentralised units namely pipe compost, kitchen bin, bio composter, biobin, pot bin, biogas plant**

Name of District	Ernakulam					
Name of /Municipality	North Paravur	Maradu	Perumbavoor	Piravam	Thrikkakkara	Thripunithura
No of units supplied:	1800	900		5664	31	13741

Name of District	Ernakulam					
	North Paravur	Maradu	Perumbavoor	Piravam	Thrikkakkara	Thripunithura
No of units working:	1500	450	Biogas plant-140, Pot compost -895, Ring compost-616		31 BIOGAS	13741
No of units not working:	300	450	21		0	Nil
Reason for failure:	flood	not working	Lack of Maintenance by beneficiaries		nil	Nil

**B.7.3.1. Details of Decentralised Facilities as reported by Localbodies**

Name of District		Ernakulam					
Name of Municipality		North paravur	Maradu	Perumbavoor	Piravom	Thrikkakara	Tripunithura
pipe compost	Total no of units supplied	1800		1654	874	0	9410
	No of units working	50		580	821	0	7620
	No of units not working	affected flood		1074	53	0	1790
	Quantity of waste treated using pipe composting facilities (TPD)	0.36		0.174	0.6 TPD	0	0
Kitchen bin/ Bucket compost	Total no of units supplied	120		0	0	0	26
	No of units working			0	0	0	8
	No of units not working			0	0	0	18

Name of District		Ernakulam					
Name of Municipality		North paravur	Maradu	Perumbavoor	Piravom	Thrikkakara	Tripunithura
	Quantity of waste treated using kitchen bin facilities (TPD)	0.024		0	0	0	0.1
Biogas plant (Household level)	Total no of units supplied	22		161	159	31	1300
	No of units working	5		161	159	31	1300
	No of units not working	affected flood and repairing stage		0	0	0	0
	Quantity of waste treated using biogas plant (TPD)	4kg		0.08	0.34 TPD	0.002	1.00 Tonne
Biogas plant (Community level)	Total no of units supplied	0		1	0	0	3
	No of units working	0		1	0	0	3
	No of units not working	0		0	0	0	0
	Quantity of waste treated using biogas plant (TPD)	0		0.5	0	0	1.10 Tonne
Aerobins (Community level)	Total no of units supplied	0		2	0	0	4
	No of units working	0		2	0	0	1
	No of units not working	0		0	0	0	3
	Quantity of waste treated using aerobins (TPD)	0		1	0	0	0.13
biocomposter, biobin, pot bin	Total no of units supplied	0		898	134	0	2497
	No of units working	0		898	134	0	1210
	No of units not working	0		0	0	0	1287
	Quantity of waste treated using these units (TPD)	0		0.5	0.2 TPD	0	0.74

Name of District		Ernakulam					
Name of Municipality		North paravur	Maradu	Perumbavoor	Piravom	Thrikkakara	Tripunithura
Others	Total no of units supplied	0		650	4500 Compost pit	0	0
	No of units working	0		650	0	0	0
	No of units not working	0		0	0	0	0
	Quantity of waste treated using these units (TPD)	0		0.325	1	0	0

### B.8. Municipalities in Thrissur

#### B.8.1. Segregation and Collection

Name of District		Thrissur						
Name of Municipality		Chalakkudy	Chavakkad	Guruvayoor	Irinjalakuda	Kodungallur	Kunnamkulam (Model Town)	Vadakkanchery
Population (2011)		49525	39098	70012	62532	94883	54071	15674
No of Wards		36	32	43	41	44	37	41
No of Household		14850	9947	18000	15933	19492	13156	17536
No of Establishment		2682	1483	2683	2898	2846	3351	4844
No of Household having segregation at source	Dry	14850		18000	7563	14896	13156	17536
	Wet			18000	7563	14896		17536
No of Establishment having segregation at source	Dry	1620		2683	2500	2846		4844
	Wet			2683	150	2846		4844
Total waste generated (TPD)		19.81			25.6	29.32	16.22	20
Total bio waste generated (TPD)		10.01			18.6	14	12.17	12
Total non bio waste generated (TPD)		9.8			7	15.32	4.05	8

<b>B.8.1. Segregation and Collection</b>										
<b>Name of District</b>			<b>Thrissur</b>							
<b>Name of Municipality</b>			<b>Chalakkudy</b>	<b>Chavakkad</b>	<b>Guruvayoor</b>	<b>Irinjalakuda</b>	<b>Kodungallur</b>	<b>Kunnamkulam (Model Town)</b>	<b>Vadakkanchery</b>	
Total waste collected (TPD)			15	1	4	5.5	3	3.197	2.5	
Total waste treated (TPD)	Centralised units		2			5		3.6	1.5	
	decentralised units		1.7			0.6		8.29	1.7	
	Other							0.28		
Total waste treated (TPD)			3.7			5.6		12.17		
D2D Collection	Households	Number	Dry	14850	3600	4400	7667	14896	13156	6000
			Wet		NIL	880	1200	0	0	Nil
		Percentage	Dry	100	36.2	24.5	48.13	76.5	100	34.3
			Wet	0		4.9	7.6	0	0	
		Collection Frequency	Dry	monthly	once in a month	monthly	monthly	weekly	monthly	1/month
			Wet		nil	alternative days	alternative days	source reduction method	nil	Nil
	Establishments	Number	Dry	1620	756	2683	2500	1412	3148	4844
			Wet	115	nil	193	150	0	148	100
		Percentage	Dry	60.5	51	100	86.3	49.7	100	100
			Wet	4.3		7.2	5.2	0	4.7	2.1
		Collection Frequency	Dry	1620	once in a week	weekly	weekly		weekly	1/month
			Wet	115	nil	daily	daily		Daily	All working days
	No of collectors			54	31	58	130	84	56	40
	No of vehicles used			3	2	6	7	2	5	2
No. having source level treatment of wet waste in operation		Household	1	1082 Municipality is taken action to disribute 2600 kitchen	13000	4600	6200	9500	17536	

<b>B.8.1. Segregation and Collection</b>								
<b>Name of District</b>		<b>Thrissur</b>						
<b>Name of Municipality</b>		<b>Chalakkudy</b>	<b>Chavakkad</b>	<b>Guruvayoor</b>	<b>Irinjalakuda</b>	<b>Kodungallur</b>	<b>Kunnamkulam (Model Town)</b>	<b>Vadakkanchery</b>
			bins and 500 Bio - gas plant to promote source level treatment of wet waste at house hold level. The project received technical sanction and its ready to implement with in two weeks					
	Establishment	548	6	2400	1400	1350	13	4744
Percentage having source level treatment of wet waste in operation	Household		11%	72	28.87	32%	72.2	100%
	Establishment		0.40%	89	48.31	47		97.90%
No. disposing to centralised system	Household	0	nil	600	7563	0	0	0
	Establishment	1620	nil	90	2500	0	50	100
Percentage having disposal to centralised system	Household		N.A	3.2	47.47	0		0
	Establishment		N.A	3.3	86.26	75%		2.1
No. existing	MCF	1	1	1	2	Temporary MCF	1	2
	RRF	1	1	1	1	under construction	1	1
No. needed	MCF	2	1	10	2	10	37	3
	RRF	1	1	2	1	3	1	1



B.8.1. Segregation and Collection								
Name of District		Thrissur						
Name of Municipality		Chalakkudy	Chavakkad	Guruvayoor	Irinjalakuda	Kodungallur	Kunnamkulam (Model Town)	Vadakkanchery
Qty of dry waste given to	Registered recyclers for plastic	0.8					0.817	
	Registered recycler for e-waste						0.779	
	Registered recycler for domestic hazardous waste						0.11	
	Recyclers for other wastes						0.957	
	Clean Kerala Company				1		0.179	linkage with clean kerala
	Road tarring						0.098	0.36
	Cement kiln						0	NA
	Landfill						0	NA
	Others						0	
	Total	0.8				1		2.94
User fee		30/household ,100/establishment	Rs.60/- per month/Home	dry waste house hold 50/month .wet waste 200/month.dry waste establishment 100/sack .wet waste 5/kg	Rs.60/- per month/Home	House 50/Rs /month establishments 100/month	House 60 Rs/month and establishments 100-200s / month	House 60Rs/month, Estsblishments 100-500 Rs/month
Remarks							Door to door collection Facility of dry waste provide at 100%. But due to unwillingness of certain households.	

<b>B.8.1. Segregation and Collection</b>							
<b>Name of District</b>	<b>Thrissur</b>						
<b>Name of Municipality</b>	<b>Chalakkudy</b>	<b>Chavakkad</b>	<b>Guruvayoor</b>	<b>Irinjalakuda</b>	<b>Kodungallur</b>	<b>Kunnamkulam (Model Town)</b>	<b>Vadakkanchery</b>
						Full collection of dry waste could not be done.	

### B.8.3. Centralised System

<b>Name of District</b>	<b>Thrissur</b>						
<b>Name of Municipality</b>	<b>Chalakkudy</b>	<b>Chavakkad</b>	<b>Guruvayoor</b>	<b>Irinjalakuda</b>	<b>Kodungallur</b>	<b>Kunnamkulam</b>	<b>Vadakkanchery</b>
Quantity of Waste generated (TPD) based on population	21	17	29	26	40	23	22.68
Quantity of Waste generated (TPD)	15	0.8 to 1 TPD	18	25.8	4.72 TPD	15	22.68
Quantity of Waste collected (TPD)	15	0.8 to 1 TPD	4	5.5	3TPD	3.197 TPD	2.5
Quantity of Waste treated (TPD)	15	0.5 to 0.8 TPD	4	1.5	Nil	3.197 TPD	2.5
Quantity of Waste processed in Composting Sites (TPD)	3	0.5 to 1 TPD	2.75	0	Nil	3.197 TPD	2
Quantity of Waste processed in biomethanation (TPD)	nil	Nil	0	0.6	Nil		2
Quantity of Waste processed in waste to energy plants (TPD)	nil	Nil	0	0	Nil		2
Quantity of Waste processed in Landfill (TPD)	0.5	Nil	0	0.4	nil		0
Existing capacity of Waste Processing Facilities: (TPD)	6	0.5 to 1	4	0.6	10TPD	5 TPD-Dry waste	2TPD
Existing capacity of Waste Disposal Facilities: (TPD)	0.5	0.5 to 1 TPD	4	5	9TPD		2TPD

Name of District	Thrissur						
Name of Municipality	Chalakkudy	Chavakkad	Guruvayoor	Irinjalakuda	Kodungallur	Kunnamkulam	Vadakkanchery
Planned Capacity of Waste Processing Facilities (TPD)	1	0.5 to 1	5	10	22TPD		2TPD
Planned Capacity of Waste Disposal Facilities (TPD)	0.5	12	5	5	5TPD		
Timeframe for installation of planned capacity of Waste Processing Facilities: (Months)	12	NA	2yrs	4	24 Months	NA	
Timeframe for installation of planned capacity of Waste Disposal Facilities: (Months)	12	NA	2yrs	4	24 months	100%	
Number of Legacy waste dumpsites in the State/UTs and plan for their Remediation:		1	1	1	1	0	

**B.8.3. Decentralised units namely pipe compost, kitchen bin, bio composter, biobin, pot bin, biogas plant**

Name of District	Thrissur						
Name of /Municipality	Chalakkudy	Chavakkad	Guruvayoor	Irinjalakuda	Kodungallur	Kunnamkulam	Vadakkanchery
No of units supplied:	2		bio gas 294,pot bin 500	4600	3450 PIPE COMPOST		219
No of units working:	2	1082	bio gas 290,pot bin 490	4590	2860	Biogas plant - 196, Biobin - 4226	217
No of units not working:		NA	bio gas 4,pot bin 10		590	Nil	2
Reason for failure:		NA	lack of awareness	mis handling	Mishanling	NA	technical error

**B.8.3.1. Details of Decentralised Facilities as reported by Localbodies**

Name of District		Thrissur						
Name of Municipality		Chalakkudy	Chavakkad	Guruvayoor	Irinjalakuda	Kodungallur	Kunnamkulam	Vadakkanchery
pipe compost	Total no of units supplied	0	0			2713	Nil	Nil
	No of units working	0	0			2511		
	No of units not working	0	0			220		
	Quantity of waste treated using pipe composting facilities (TPD)	0	0			6-7 tone		
Kitchen bin	Total no of units supplied	0	2600		900	nil		Nil
	No of units working	0	2600		900			
	No of units not working	0	0		0			
	Quantity of waste treated using kitchen bin facilities (TPD)	0	3.9 TPD		1.35 TPD			
Biogas plant (Househ old level)	Total no of units supplied	0	100	294	400	412	196	219
	No of units working	0	95	290	356	378	196	219
	No of units not working	0	5	4	44	34		
	Quantity of waste treated using biogas plant (TPD)	0	0.38 TPD	290	5.34	1.9 TDP		
Biogas plant (Commu nity level)	Total no of units supplied	0	0	0		16	Nil	Nil
	No of units working	0	0	0		16	0	
	No of units not working	0	0	0		0	0	
	Quantity of waste treated using biogas plant (TPD)	0	0	0		1TPD	0	
Aerobins (Commu nity level)	Total no of units supplied	0	TS obtained for 36 bins in 7 places and	3	7	NIL	3(school level)	Nil

Name of District		Thrissur						
Name of Municipality		Chalakkudy	Chavakkad	Guruvayoor	Irinjalakuda	Kodungallur	Kunnamkulam	Vadakkanchery
			agreement executed with IRTC					
	No of units working	0		0	7	NIL	3	
	No of units not working	0		3	0	NIL	0	
	Quantity of waste treated using aerobins (TPD)	0		3.5 TON	1 TPD	NIL		
biocomposter, biobin, pot bin	Total no of units supplied	0	0	500		NIL	4850	Nil
	No of units working	0	0	490			4835	
	No of units not working	0	0	10			15	
	Quantity of waste treated using these units (TPD)	0	0	490				
Others	Total no of units supplied	0	0		1800	NIL		Nil
	No of units working	0	0		1800			
	No of units not working	0	0		0			
	Quantity of waste treated using these units (TPD)	0	0		2.7			

## B.9. Municipalities in Palakkad

### B.9.1. Segregation and Collection

Name of District			Palakkad							
Name of Corporation/Municipality/Panchayath			Cheruplassery	Chitttur-Thattamangalam	Mannarkadu	Ottapalam	Palakkad	Pattambi	Shornur	
Population (2011)			30730	33000	39463	53792	131000	28632	43533	
No of Wards			33	29	29	36	52		33	
No of Household			8892	10956	8718	12484	30530	5286	10407	
No of Establishment			1634	1210	1434	2030	7200	1600	1468	
No of Household having segregation at source		Dry	5320	5656	8718	7200	16850	0	10407	
		Wet	5320	1235	1434	0	2200	0	400	
No of Establishment having segregation at source		Dry	1260	140	8718	1020	761	0	1200	
		Wet	1260	112	Nil	0	nil	0	0	
Total waste generated (TPD)			11.5	9.7	2.6	1.4	42	11		
Total biodegradable waste generated			3.5					7.44		
Total non biodegradable waste generated			8					4.07		
Total waste collected (TPD)				3	2	0.980	18	0.5	1.5	
Total waste treated (TPD)		Centralised units								
		decentralised units								
		Other								
Total waste treated (TPD)				2.85	2	0.980	15		1.5	
D2D Collection	Households	Number	Dry	5320	5656	One day/month	7200	16850	0	10407
			Wet	Nil	1235	0	0	2200	0	400
		Percentage	Dry	59.9	51.7		57.7	55.2	0	100
			Wet		11.3	0	0	7.21	0	3.9
		Collection Frequency	Dry	Monthly one	4 Time per month	one day/Month	twice in a month	Weekly once	0	Fortnight

**B.9.1. Segregation and Collection**

Name of District			Palakkad							
Name of Corporation/Municipality/Panchayath			Cheruplassery	Chitttur-Thattamangalam	Mannarkadu	Ottapalam	Palakkad	Pattambi	Shornur	
Establishments		Wet	Nil	14 Time per month	0	0	weekly Twice	0	Daily	
	Number	Dry	1260	140	1200	1020	761	0	1200	
		Wet	Nil	1235	0	0	Nil	0	0	
	Percentage	Dry	77.2	11.6	83.7	50.3	10.6	0	91.8	
		Wet		102.1	0	0		0	0	
	Collection Frequency	Dry	Daily/Weekly	4 Times per month	Weekly	twice in a month	Weekly Once	0	Once in a week	
		Wet	Nil	25 Times per month	0	0	Nil	0	na	
	No of collectors			22 HKS	56 Nos	58	56	156	20	65
No of vehicles used			2	5 Nos	Nil	2	52	1	2	
No. having source level treatment of wet waste in operation	Household		1230	1242	8565	5400	4650	0	2902	
	Establishment		46	NIL	1434	400	20	0	136	
Percentage having source level treatment of wet waste in operation	Household		9%	15%	55%		11%	0	0	
	Establishment		2.50%	NIL	20%		0.30%	0	0	
No. disposing to centralised system	Household		Nil	NIL	0	210	490	0	0	
	Establishment		Nil	NIL	0	60	Nil	0	0	
Percentage having disposal to centralised system	Household		Nil	NIL	0		1.20%	0	0	
	Establishment		Nil	NIL	0		0	0	0	
No. existing	MCF		1 Temperory	7 Nos	1	1	7	1	1	

**B.9.1. Segregation and Collection**

Name of District		Palakkad						
Name of Corporation/Municipality/Panchayath		Cheruplassery	Chitttur-Thattamangalam	Mannarkadu	Ottapalam	Palakkad	Pattambi	Shornur
	RRF	Under Construction	1 Nos	Under Construction	1	1	1	1
No. needed	MCF	6	9 Nos	4	12	18	1	0
	RRF	0	1 Nos	1	0	0	1	0
User fee		House hold 30establishment 50	50/100/250	Household 25 to 30pm Establishment 50/Week	40	House Hold Dry waste-100 Wet waste-150 Establishment -300	ESTABLISHMENT 10/DAY.5 /DAY	Household 50/- pm Establishment 150 to 300/- pm
Remarks			collected userfess in Rs.50 /- per house and Rs.100 / 250 per establishment				AMOUNT I	na



### B.9.2. Centralised System

Name of District	Palakkad						
Name of Corporation /Municipality /Panchayath	Cheruplassery	Chitttur-Thattamangalam	Mannarkadu	Ottapalam	Palakkad	Pattambi	Shornur
Quantity of Waste generated (TPD) based on population	13	14	17	23	55	12	19
Quantity of Waste generated (TPD)	8	9.7 Ton	2.6	1.4ton	42	3TPD	1.5
Quantity of Waste collected (TPD)	6	3 Ton	2	0.980ton	18	500KG	1.5
Quantity of Waste treated (TPD)	5	2.85 Ton	2	0.980ton	15	50KG	1.5
Quantity of Waste processed in Composting Sites (TPD)	NIL	2.85 Ton	Nil	880 ton	8	NA	NIL
Quantity of Waste processed in biomethanation (TPD)	NIL		Nil	0	15	NA	NIL
Quantity of Waste processed in waste to energy plants (TPD)	NIL	NIL	Nil	0	nil	NA	NIL
Quantity of Waste processed in Landfill (TPD)	NIL	NIL	Nil	0	Nil	NA	NIL
Existing capacity of Waste Processing Facilities: (TPD)	5 NON BIO DEGRADABLE	4 Ton	2	1 ton	18	NA	3
Existing capacity of Waste Disposal Facilities: (TPD)		2.85 Ton	2	0	18	NA	3
Planned Capacity of Waste Processing Facilities (TPD)		2.85 Ton	2	1 ton	0.5 ton	NA	3
Planned Capacity of Waste Disposal Facilities (TPD)		2.85 Ton	2	NA	10 ton	NA	3

Name of District	Palakkad						
Name of Corporation /Municipality /Panchayath	Cheruplassery	Chitttur-Thattamangalam	Mannarkadu	Ottapalam	Palakkad	Pattambi	Shornur
Timeframe for installation of planned capacity of Waste Processing Facilities: (Months)		NA	12 Months	1 MONTH	2 ton	NA	3
Timeframe for installation of planned capacity of Waste Disposal Facilities: (Months)		NA	12 Months	1 MONTH	24 Months	NA	3
Number of Legacy waste dumpsites in the State/UTs and plan for their Remediation:		NA	NA	3	24 Month	NA	NA

**B.9.3. Decentralised units namely pipe compost, kitchen bin, bio composter, biobin, pot bin, biogas plant**

Name of District	Palakkad						
Name of Municipality	Cheruplassery	Chitttur-Thattamangalam	Mannarkadu	Ottapalam	Palakkad	Pattambi	Shornur
No of units supplied:	bio bin - 33	1537		4426	4550	1800	2902
No of units working:	bio bin - 33	998	55	4426	2650	0	2092
No of units not working:	nil	539	Nil	0	1900	0	0
Reason for failure:	nil	not avalabilty of inaculam and techical error	NA	NA	Foul Smell & Insects	0	na

**B.9.3.1. Details of Decentralised Facilities as reported by Localbodies**

Name of District		Palakkad						
Name of Municipality		Cheruplassery	Chittur-Thattamangalam	Mannarkadu	Ottapalam	Palakkad	Pattambi	Shornur
pipe compost	Total no of units supplied	110	NIL	40		2500	Nil	
	No of units working	110	NIL	40		2500	NIL	
	No of units not working	0	NIL	0		NIL	NIL	
	Quantity of waste treated using pipe composting facilities (TPD)	50 Kg	NIL	75 Kg.		3200	NIL	nil
Kitchen bin	Total no of units supplied	0	NIL	Nil		NIL	Nil	nil
	No of units working	0	NIL	N.A		NIL	NIL	nil
	No of units not working	0	NIL	N.A		NIL	NIL	nil
	Quantity of waste treated using kitchen bin facilities (TPD)	0	NIL	N.A		NIL	NIL	135
Biogas plant (Household level)	Total no of units supplied	0	42	20		NIL	69	120
	No of units working	0	42	20		NIL	NIL	120
	No of units not working	0	NIL	0		NIL	NIL	0
	Quantity of waste treated using biogas plant (TPD)	0	250	125 Kg		NIL		
Biogas plant (Community level)	Total no of units supplied	0	NIL	Nil		1	Nil	nil
	No of units working	0	NIL	Nil		NIL	NIL	nil
	No of units not working	0	NIL	N.A		1	NIL	nil
	Quantity of waste treated using biogas plant (TPD)	0	NIL	N.A		500KG/DAY	NIL	nil

Name of District		Palakkad						
Name of Municipality		Cheruplassery	Chitttur-Thattamangalam	Mannarkadu	Ottapalam	Palakkad	Pattambi	Shornur
Aerobins (Community level)	Total no of units supplied	0	NIL	Nil		NIL	Nil	
	No of units working	0	NIL			NIL	NIL	
	No of units not working	0	NIL			NIL	NIL	
	Quantity of waste treated using aerobins (TPD)	0	NIL			NIL	NIL	
biocomposter, biobin, pot bin	Total no of units supplied	37	NIL	315		NIL	Nil	
	No of units working	37	NIL			NIL	NIL	
	No of units not working	0	NIL			NIL	NIL	
	Quantity of waste treated using these units (TPD)	60 kg	NIL	475 Kg./day		NIL	NIL	
Others	Total no of units supplied	0	Bucket-1300, Ring-395	Nil		RING COMPOST-60	NIL	
	No of units working		Bucket-1300, Ring-395			60	NIL	
	No of units not working					NIL	NIL	
	Quantity of waste treated using these units (TPD)					24Kg/day	NIL	

### B.10. Municipalities in Malappuram

B.10.1. Segregation and Collection									
Name of District			Malappuram						
Name of Municipality			Kondotty	Kottakkal	Malappuram	Manjeri	Nilambur	Parappanangadi	
Population (2011)			28794	44382	101000	97104	46366	35243	
No of Wards			40	32	40	50	33	45	
No of Household			11807	11080	18889	19386	13685	18256	
No of Establishment			1700	2020	3246	4809	1800	1155	
No of Household having segregation at source		Dry	600	9600	15112	9886	5135	8358	
		Wet	8000		0	2115	0	7250	
No of Establishment having segregation at source		Dry	1000	1500	876		1750	615	
		Wet	100		0			527	
D2D Collection	Households	Number	Dry	9400	1480	15112	180 Ton	0	8358
			Wet	590		0	NIL	0	7250
		Percentage	Dry	79.7	13.4	80.1		0	45.8
			Wet	5	0	0		0	39.8
		Collection Frequency	Dry	Quarterly		Once in a month	One time in Month	monthly	
			Wet	Daily		-		Nil	
	Establishments	Number	Dry	200	520	876	2100	Nil	615
			Wet	Nil		0		21	527
		Percentage	Dry	11.8	25.8	27	43.7		53.3
			Wet		0	0	0	1.2	45.7
		Collection Frequency	Dry	quarterly		Once in a week	Daily	weekly	
			Wet			-	NIL	Nil	
No of collectors			160	15	24	16	29	90	

<b>B.10.1. Segregation and Collection</b>							
<b>Name of District</b>		<b>Malappuram</b>					
<b>Name of Municipality</b>		<b>Kondotty</b>	<b>Kottakkal</b>	<b>Malappuram</b>	<b>Manjeri</b>	<b>Nilambur</b>	<b>Parappanangadi</b>
	No of vehicles used	1 Owned and 1 Hired	1	2	2	1	1
No. having source level treatment of wet waste in operation	Household	8000	Nil	17735		33	
	Establishment	100	Nil	876		Nil	40
Percentage having source level treatment of wet waste in operation	Household	67%		93			70
	Establishment	1%		27			
No. disposing to centralised system	Household			Nil	1	Nil	3750
	Establishment			75	1	Nil	337
Percentage having disposal to centralised system	Household	nil	Nil	Nil			20.54
	Establishment	nil	Nil	2.3			29.17
No. existing	MCF	1	1	3	3	Temporary	1
	RRF	nil	1	1	0	Nil	1
No. needed	MCF	2	30	4	2	3	4
	RRF	1	2	1	1	1	1
User fee		Yes, Collecting	House Hold- 50, Establishme nt - 100	HH- 30/- per month Estmnt- 50/- per week	300/-	60	Rs 30 (House) RS 100(Shop)
Remarks			User fee based on openlyQuant ity of waste		The user free Charged in kg base		

**B.10.2. Centralised System**

<b>Name of District</b>	<b>Malappuram</b>					
<b>Name of Municipality</b>	<b>Kondotty</b>	<b>Kottakkal</b>	<b>Malappuram</b>	<b>Manjeri</b>	<b>Nilambur</b>	<b>Parappanangadi</b>
Quantity of Waste generated (TPD) based on population	12	18	43	41	20	15
Quantity of Waste generated (TPD)	0.12 TPD(non bio degradable)		3.23		3 1/2 TPD	2
Quantity of Waste collected (TPD)	0.12 TPD(non biodegradable)		2.2		2 TPD	1
Quantity of Waste treated (TPD)	0.12 TPD		2.2		1 1/2 TPD	1
Quantity of Waste processed in Composting Sites (TPD)	nil		Nil		1 1/2 TPD	
Quantity of Waste processed in biomethanation (TPD)	nil		Nil		Nil	
Quantity of Waste processed in waste to energy plants (TPD)	nil		Nil		Nil	
Quantity of Waste processed in Landfill (TPD)	nil		Nil		Nil	
Existing capacity of Waste Processing Facilities: (TPD)	0.12 TPD		Nil		1 TPD	1
Existing capacity of Waste Disposal Facilities: (TPD)	na		Nil		0.5 TPD	1
Planned Capacity of Waste Processing Facilities (TPD)	na		Nil		1	50
Planned Capacity of Waste Disposal Facilities (TPD)					1.5	3
Timeframe for installation of planned capacity of Waste Processing Facilities: (Months)	6 months				4	1 year
Timeframe for installation of planned capacity of Waste Disposal Facilities: (Months)	6 months				4	2 year
Number of Legacy waste dumpsites in the State/UTs and plan for their Remediation:	NA				0	Nil

**B.10.3. Decentralised units namely pipe compost, kitchen bin, bio composter, biobin, pot bin, biogas plant**

Name of District	Malappuram					
Name of Municipality	Kondotty	Kottakkal	Malappuram	Manjeri	Nilambur	Parappanangadi
No of units supplied:	Pipe Composting-600 Ring Compost-183 Biogas Plant-18	NIL	31BIOGAS			biogas - 13, kitchenbin-75
No of units working:	801		1061		33	kitchen bin -73
No of units not working	nil		Nil		NA	biogas 13
Reason for failure:	NA	NA			NA	

**B.10.3.1. Details of Decentralised Facilities as reported by Localbodies**

Name of District		Malappuram					
Name of Municipality		Kondotty	Kottakkal	Malappuram	Manjeri	Nilambur	Parappanangadi
pipe compost	Total no of units supplied	600	240	519	3792	321	150
	No of units working	420	240	475	2844	135	150
	No of units not working	180	0	44	948	186	0
	Quantity of waste treated using pipe composting facilities (TPD)	125	0.4	0.475	2.8 ton	0.33	0.25
Kitchen bin	Total no of units supplied	Nil	0	0	0	NIL	73
	No of units working	NA	0	0	0	NIL	73
	No of units not working	NA	0	0	0	NIL	0



Name of District		Malappuram					
Name of Municipality		Kondotty	Kottakkal	Malappuram	Manjeri	Nilambur	Parappanangadi
	Quantity of waste treated using kitchen bin facilities (TPD)	NA	0	0	0		0.25
Biogas plant (Household level)	Total no of units supplied	NA	20	220	0	104	13
	No of units working	18	20	201	0	71	10
	No of units not working	Nil	0	19	0	33	3
	Quantity of waste treated using biogas plant (TPD)	45 Kg/day	80	1.1	0	0.18	0.3
Biogas plant (Community level)	Total no of units supplied	Nil	0	0	0	NIL	0
	No of units working	Na	0	0	0	NIL	0
	No of units not working	Na	0	0	0	NIL	0
	Quantity of waste treated using biogas plant (TPD)	Na	0	0	0	NIL	0
Aerobins (Community level)	Total no of units supplied	Na	0	0	0	NIL	0
	No of units working	Na	0	0	0	NIL	0
	No of units not working	Na	0	0	0	NIL	0
	Quantity of waste treated using aerobins (TPD)	Na	0	0	0		0
biocomposter, biobin, pot bin	Total no of units supplied	Nil	150	322	0	75	250
	No of units working	Na	150	274	0	75	250
	No of units not working	Na	0	48	0	NIL	0
	Quantity of waste treated using these units (TPD)	Na	0.5	0.51	0	0.19	0.25

Name of District		Malappuram					
Name of Municipality		Kondotty	Kottakkal	Malappuram	Manjeri	Nilambur	Parappanangadi
Others	Total no of units supplied	123 Ring Compost	0	0	0	NIL	1000
	No of units working	123	0	0	0	NIL	1000
	No of units not working	Nil	0	0	0	NIL	0
	Quantity of waste treated using these units (TPD)	50 Kg/day	0	0	0	NIL	1

### B.10. Municipalities in Malappuram

#### B.3.1. Segregation and Collection

Name of District		Malappuram							
Name of Corporation/Municipality/Panchayath		Perinthalmanna	Ponnani	Thanoor	Thiroorangadi	Tirur	Valanchery		
Population (2011)		49723	90491	44973	56632	56058	35795		
No of Wards		34	51	44	39	38	33		
No of Household		16242	16394	15400	13146	12769	7651		
No of Establishment		3202	2540	1500	2000	8412	1224		
No of Household having segregation at source		Dry	6242	11475	8490	5500	12769	NA	
		Wet	0	11475	0	0	12769	NA	
No of Establishment having segregation at source		Dry	1102	1778	150	500	8412	No	
		Wet	193	1778	0	0	8412	No	
D2D Collection	Households	Number	Dry	6242	11475	8490	5500	12769	
			Wet	0	0	0	0	0	
		Percentage	Dry	38.5	70	55.2	41.9	100	0
			Wet	0	0	0	0	0	0
		Collection Frequency	Dry	Monthly	monthly	once in month	once in every three months	twice in one month	Once in a month

**B.3.1. Segregation and Collection**

Name of District			Malappuram						
Name of Corporation/Municipality/Panchayath			Perinthalmanna	Ponnani	Thanoor	Thiroorangadi	Tirur	Valanchery	
Establishments	Number	Wet	Nil	Nil	0	Nil	0		
		Dry	1102	1778	150	500	8412	Nil	
	Percentage	Wet	193	0	0	0	0	Nil	
		Dry	34.5	70	10	25	100		
	Collection Frequency	Wet	6.1	0	0	0	0		
		Dry		Twice/month	once in week		twice in one month	Nil	
		Wet	Daily	nil	0	Nil	0	Nil	
	No of collectors			52	49	0	28	38	13
	No of vehicles used			6	1	1	1	2	Nil
	No. having source level treatment of wet waste in operation	Household		1310	13115	8000	1912	12769	20%
Establishment			32	1905	1000	10	8412	Nil	
Percentage having source level treatment of wet waste in operation	Household			80	52		100	Nil	
	Establishment			75	67		100	Nil	
No. disposing to centralised system	Household		Nil	Nil	0	Nil	nil	Nil	
	Establishment		Nil	2	0	Nil	nil	Nil	
Percentage having disposal to centralised system	Household		0	0	0	Nil	0	Nil	
	Establishment		0	near to 0	0	Nil	0	Nil	
No. existing	MCF		1	8	1	1	1	1	
	RRF		1	1	1	0	1	Nil	
No. needed	MCF		2	10	4	4	1	3	
	RRF		0	0	1	1	15	1	

### B.3.1. Segregation and Collection

B.3.1. Segregation and Collection						
Name of District	Malappuram					
Name of Corporation/Municipality/Panchayath	Perinthalmanna	Ponnani	Thanoor	Thiroorangadi	Tirur	Valanchery
User fee	50per House	50 per house	50 per house hold 100 per establish ment	Rs 50/- per Household and Rs 100/- per establishment (for each 50kg bag)	Rs 50/- per house hold	Rs 50/- per house hold
Remarks						

### B.10.2. Centralised System

Name of District	Malappuram					
Name of Municipality	Peinthalmanna	Ponnani	Thanoor	Thiroorangadi	Tirur	Valanchery
Quantity of Waste generated (TPD) based on population	21	38	19	24	24	15
Quantity of Waste generated (TPD)	10	6	12.38	17 TPD	8	6 ton per day
Quantity of Waste collected (TPD)	6	2	0.3	0.5	1	3
Quantity of Waste treated (TPD)	6	2	0	0	1	2.5
Quantity of Waste processed in Composting Sites (TPD)	6	2	0	0	0.75	0.3
Quantity of Waste processed in biomethanation (TPD)	Nil	0	0	0	nil	NA
Quantity of Waste processed in waste to energy plants (TPD)	Nil	0	0	0	nil	NA
Quantity of Waste processed in Landfill (TPD)	Nil	0	0	0	0.25	NA
Existing capacity of Waste Processing Facilities: (TPD)	7	2	0	0	2	0.2

Existing capacity of Waste Disposal Facilities: (TPD)	Nil	2	0	0	0.25	Nil
Planned Capacity of Waste Processing Facilities (TPD)	11	6	0	0	2	Nil
Planned Capacity of Waste Disposal Facilities (TPD)	Nil	0	0	0	2	Nil
Timeframe for installation of planned capacity of Waste Processing Facilities: (Months)	3	6 months	12	12	6	On Processing
Timeframe for installation of planned capacity of Waste Disposal Facilities: (Months)	3	0	12	6	6	Nil
Number of Legacy waste dumpsites in the State/UTs and plan for their Remediation:	Nil	0	0	0	1	Nil

**B.10.3. Decentralised units namely pipe compost, kitchen bin, bio composter, biobin, pot bin, biogas plant**

Name of District	Malappuram					
Name of Corporation/Municipality/Panchayath	Peinthalmanna	Ponnani	Thanoor	Thiroorangadi	Tirur	Valanchery
No of units supplied:	472	1302		1912	468	230
No of units working:	0	1302	56	800	468	230
No of units not working	0	0	0	1112	.	
Reason for failure:	NA	NA	NA	improper handling	.	NA

**B.10.3.1. Details of Decentralised Facilities as reported by Localbodies**

Name of District		Malappuram					
Name of Municipality		Peinthalmanna	Ponnani	Thanoor	Thiroorangadi	Tirur	Valanchery
pipe compost	Total no of units supplied		364	Nil	1912	453	Nil
	No of units working		364	Nil	1850	230	Nil
	No of units not working		0	Nil	62	223	Nil
	Quantity of waste treated using pipe composting		0.546	Nil	2.86	0.21	Nil

Name of District		Malappuram					
Name of Municipality		Peinthalmanna	Ponnani	Thanoor	Thiroorangadi	Tirur	Valanchery
	facilities (TPD)						
Kitchen bin	Total no of units supplied		nil	Nil	NIL	2769	Nil
	No of units working		nil	Nil	NIL	1480	Nil
	No of units not working		nil	Nil	NIL	1289	Nil
	Quantity of waste treated using kitchen bin facilities (TPD)		nil	Nil	NIL	1.2	Nil
Biogas plant (Household level)	Total no of units supplied		22	Nil	NIL	468	28
	No of units working		22	Nil	NIL	462	28
	No of units not working		0	Nil	NIL	6	Nil
	Quantity of waste treated using biogas plant (TPD)		0.11	Nil	NIL	0.58	50 Kg/ day
Biogas plant (Community level)	Total no of units supplied		nil	Nil	NIL	nil	Nil
	No of units working		nil	Nil	NIL		Nil
	No of units not working		nil	Nil	NIL		Nil
	Quantity of waste treated using biogas plant (TPD)		nil	Nil	NIL		Nil
Aerobins (Community level)	Total no of units supplied		1	Nil	NIL	nil	Nil
	No of units working		1	Nil	NIL		Nil
	No of units not working		0	Nil	NIL		Nil
	Quantity of waste treated using aerobins (TPD)		0.2	Nil	NIL		Nil
biocomposter, biobin, pot bin	Total no of units supplied		686	Nil	NIL		Nil
	No of units working		686	Nil	NIL		Nil
	No of units not working		0	Nil	NIL		Nil
	Quantity of waste treated using these units (TPD)		1	Nil	NIL		Nil
Others	Total no of units supplied		235(bucket compost)	67(Ring Compost)	NIL		Nil
	No of units working		235	67	NIL		Nil

Name of District		Malappuram					
Name of Municipality		Peinthalmanna	Ponnani	Thanoor	Thiroorangadi	Tirur	Valanchery
	No of units not working		0	Nil	NIL		Nil
	Quantity of waste treated using these units (TPD)		0.35	0.134	NIL		Nil

### B.11. Municipalities in Kozhikode

#### B.11.1. Segregation and Collection

Name of District		Kozhikode								
Name of Corporation		Faroke	Koduvally	Koyilandy	Mukkam	Payyoli	Ramanattukara	Vadakara		
Population (2011)		32122	48678	71873	40670	23576	35937	75295		
No of Wards		38	36	44	33	36	31	47		
No of Household		14562	10623	17086	8134	13800	7755	18000		
No of Establishment		1750	1292	2860	2022	1400	1546	5938		
No of Household having segregation at source	Dry	6500	5300	10241	7315	6900	nil	16000		
	Wet	6500	310	12040	Nil	10400	Nil	nil		
No of Establishment having segregation at source	Dry	59	2520	1950	1836	840	NIL	4000		
	Wet	12	0	2100	Nil	1220	nil	nil		
D2D Collection	Households	Number	Dry	6500	3200	10200	7315	Nil	16000	
			Wet	6500	-	NIL	nil	Nil	nil	
		Percentage	Dry	44.7	30.13	59.7	90			88.9
			Wet	44.7				0		
	Collection Frequency	Dry	Once in a month	per month	Monthly	Monthly		nil	13500	
		Wet	not collecting	-	NIL	nil		nil	nil	
Establish	Number	Dry	59	23	225	1836	1100	5938	5938	

<b>B.11.1. Segregation and Collection</b>										
<b>Name of District</b>			<b>Kozhikode</b>							
<b>Name of Corporation</b>			<b>Faroke</b>	<b>Koduvally</b>	<b>Koyilandy</b>	<b>Mukkam</b>	<b>Payyoli</b>	<b>Ramanattukara</b>	<b>Vadakara</b>	
	ments	Wet	12	0	225	nil		nil	nil	
		Percentage	Dry	3.4	1.8	7.9	90.9	78.58	100	100
	Collection Frequency	Wet	0.7		7.9		0			
		Dry	once in a week	-	Daily	monthly		Nil	4000	
	No of collectors	Wet	daily	-	Daily	nil		Nil	nil	
				18	72 (Haritha Karma Sena)	100	38		Nil	63
No of vehicles used			1	one (on contract)	1	1		Nil	3	
No. having source level treatment of wet waste in operation	Household		6500	-	4200	237		Nil	8890	
	Establishment		8	-	8	11		Nil	600	
Percentage having source level treatment of wet waste in operation	Household		44.7		24.6	3	0		49.4	
	Establishment		0.5		0.3	0.6	0		10.2	
No. disposing to centralised system	Household		0	0	0	nil		Nil	50unit	
	Establishment		0	0	1050	nil		Nil	20unit	
Percentage having disposal to centralised system	Household		0	0	0		0			
	Establishment		0	0	36.8		0			
No. existing	MCF		1	1	2	1		1	13	
	RRF		under construction	0	1	nil		nil	2	
No. needed	MCF		2	2	3	1		mini MCF need for 31 wards	34	
	RRF		1	1	1	1		nil	1	



<b>B.11.1. Segregation and Collection</b>							
<b>Name of District</b>	<b>Kozhikode</b>						
<b>Name of Corporation</b>	<b>Faroke</b>	<b>Koduvally</b>	<b>Koyilandy</b>	<b>Mukkam</b>	<b>Payyoli</b>	<b>Ramanattukara</b>	<b>Vadakara</b>
User fee	Rs 30/month/house, Rs 50/week/shop	Rs.50/ house Rs.100/Establishment	Rs50/house- Rs.100/establishment and may vary as per weight	50		Rs50 for Housed and 100/- for shopes	50/month
Remarks	Only Nonbiodegradable waste is collecting by door to door collection	Only dry waste D2D collection. Wet waste at source level treatment. Daily 600 Kg wet waste collecting from Town street by 8 Sanitary workers.					

**B.11.2. Centralised System**

<b>Name of District</b>	<b>Kozhikode</b>						
<b>Name of Municipality</b>	<b>Faroke</b>	<b>Koduvally</b>	<b>Koyilandy</b>	<b>Mukkam</b>	<b>Payyoli</b>	<b>Ramanattukara</b>	<b>Vadakara</b>
Quantity of Waste generated (TPD) based on population	14	21	30	17	10	15	32
Quantity of Waste generated (TPD)	4	4.8	10			nil	19.93
Quantity of Waste collected (TPD)	0.5	0.6	2.5			nil	11.95
Quantity of Waste treated (TPD)	0.5	0.6	2.5			nil	11.95

Quantity of Waste processed in Composting Sites (TPD)	0.05	0.6	2			nil	Nil
Quantity of Waste processed in biomethanation (TPD)	0	-	0		nil	nil	Nil
Quantity of Waste processed in waste to energy plants (TPD)	0	-	0		nil	nil	Nil
Quantity of Waste processed in Landfill (TPD)	nil	-	0		nil	nil	0.95
Existing capacity of Waste Processing Facilities: (TPD)	0	-	2		nil	nil	nil
Existing capacity of Waste Disposal Facilities: (TPD)	0	- (2 Acre land)	2.5		nil	nil	2
Planned Capacity of Waste Processing Facilities (TPD)	0	-	3		nil	nil	5
Planned Capacity of Waste Disposal Facilities (TPD)	0	-	nil		nil	nil	5
Timeframe for installation of planned capacity of Waste Processing Facilities: (Months)	2020March	-	2020March		nil	nil	NIL
Timeframe for installation of planned capacity of Waste Disposal Facilities: (Months)	2020 March	-	na		nil	nil	NIL
Number of Legacy waste dumpsites in the State/UTs and plan for their Remediation:	Nil	Nil	nil		nil	nil	NIL

**B.11.3. Decentralised units namely pipe compost, kitchen bin, bio composter, biobin, pot bin, biogas plant**

Name of District	Kozhikode						
	Faroke	Koduvally	Koyilandy	Mukkam	Payyoli	Ramanattukara	Vadakara
Name of Corporation/Municipality/Panchayath							

Name of District	Kozhikode						
Name of Corporation/Municipality/Panchayath	Faroke	Koduvally	Koyilandy	Mukkam	Payyoli	Ramanattukara	Vadakara
No of units supplied:	4550		4100		0		8840
No of units working:	1550	-	4055			nil	5000
No of units not working:	3000 pipe compost	-				nil	3840
Reason for failure:	lack of awairness	-	improper maintainance			nil	improper maintainance

**B.11.3.1. Details of Decentralised Facilities as reported by Localbodies**

Name of District	Kozhikode							
Name of Municipality	Faroke	Koduvally	Koyilandy	Mukkam	Payyoli	Ramanattukara	Vadakara	
pipe compost	Total no of units supplied	4500		1125		750	Nil	3000
	No of units working	1500		1087		100	Nil	520
	No of units not working	3000		38		650	Nil	2480
	Quantity of waste treated using pipe composting facilities (TPD)	1.5 tpd		1.5tpd		Nil	Nil	1.25
Kitchen	Total no of units supplied			61		500	Nil	Nil

Name of District		Kozhikode						
Name of Municipality		Faroke	Koduvally	Koyilandy	Mukkam	Payyoli	Ramanattukara	Vadakara
bin	No of units working			61		300	Nil	Nil
	No of units not working	no		0		200	Nil	Nil
	Quantity of waste treated using kitchen bin facilities (TPD)			120kg/day		Nil	Nil	Nil
Biogas plant (Household level)	Total no of units supplied	50		250		Nil	Nil	100
	No of units working	50		225		Nil	Nil	75
	No of units not working	0		25		Nil	Nil	25
	Quantity of waste treated using biogas plant (TPD)	75 kg		1/tpd		Nil	Nil	75
Biogas plant (Community level)	Total no of units supplied			1		Nil	Nil	Nil
	No of units working			0		Nil	Nil	Nil
	No of units not working			1		Nil	Nil	Nil
	Quantity of waste treated using biogas plant (TPD)			0		Nil	Nil	Nil
Aerobins (Community level)	Total no of units supplied			35		Nil	Nil	18
	No of units working	1		27		Nil	Nil	18
	No of units not working	50 kg/day		8		Nil	Nil	Nil
	Quantity of waste treated using aerobins (TPD)			500kg/day		Nil	Nil	2
biocomposter, biobin,	Total no of units supplied	nil		3090		Nil	Nil	49
	No of units working			3090		Nil	Nil	49

Name of District		Kozhikode						
Name of Municipality		Faroke	Koduvally	Koyilandy	Mukkam	Payyoli	Ramanattukara	Vadakara
pot bin	No of units not working			0		Nil	Nil	Nil
	Quantity of waste treated using these units (TPD)			3tpd		Nil	Nil	1
Others	Total no of units supplied	nil		1485		Nil	Nil	1065
	No of units working			1485		Nil	Nil	1020
	No of units not working			0		Nil	Nil	45
	Quantity of waste treated using these units (TPD)			1.5tpd		Nil	Nil	2.5

## B.12. Municipalities in Wayanad

B.12.1. Segregation and Collection			
Name of District	Wayanad		
Name of Municipality	Kalpetta	Mananthavady	Sulthanbathery
Population (2011)	31580	34663	23333
No of Wards	28	36	35
No of Household	7519	12538	15889
No of Establishment	2100	1724	2200

<b>B.12.1. Segregation and Collection</b>						
<b>Name of District</b>			<b>Wayanad</b>			
<b>Name of Municipality</b>			<b>Kalpetta</b>	<b>Mananthavady</b>	<b>Sulthanbathery</b>	
No of Household having segregation at source		Dry	1998	4970		
		Wet	0	0		
No of Establishment having segregation at source		Dry	1710	812		
		Wet	0	0		
D2D Collection	Households	Number	Dry	1998	4970	waste to energy SWM plant under construction
			Wet	0	0	waste to energy SWM plant under construction
		Percentage	Dry	26.6	39.7	
			Wet	0	0	
		Collection Frequency	Dry	weekly	Once in a Month	waste to energy SWM plant under construction
			Wet	0	0	Not still started
	Establishments	Number	Dry	1710	812	Not still started
			Wet	0	0	Not still started
		Percentage	Dry	81.5	47.1	
			Wet	0	0	
		Collection Frequency	Dry	daily	Once in a Month	Not still started
			Wet	0		Not still started
	No of collectors			32	26	23
	No of vehicles used			4	1	1
No. having source level treatment of wet waste in operation		Household	nil	Nil	Nil	
		Establishment	7	22	Nil	
Percentage having source level treatment of wet waste in operation		Household				
		Establishment	0.4	1.3		
No. disposing to centralised system		Household	nil	nil	Nil	
		Establishment	nil	nil	Nil	

<b>B.12.1. Segregation and Collection</b>				
<b>Name of District</b>		<b>Wayanad</b>		
<b>Name of Municipality</b>		<b>Kalpetta</b>	<b>Mananthavady</b>	<b>Sulthanbathery</b>
Percentage having disposal to centralised system	Household			
	Establishment			
No. existing	MCF	1	1	1
	RRF	1	0	0
No. needed	MCF	1	15	1
	RRF	1	1	1
User fee		Rs 50 per month from household and Rs 100 to 2000 from establishments according to the quantity of waste	RS 50 to 250 FOR SHOPES Rs. 30 for houses	waste to energy plant under construction
Remarks				

**B.12.2. Centralised System**

<b>Name of District</b>	<b>Wayanad</b>		
<b>Name of Municipality</b>	<b>Kalpetta</b>	<b>Mananthavady</b>	<b>Sulthanbathery</b>

STATUS REPORT ON SOLID WASTE MANAGEMENT AS ON Oct 2020 (Details submitted by localbodies)

Quantity of Waste generated (TPD) based on population	14	15	10
Quantity of Waste generated (TPD)	8tpd	0.5 ton	13.66
Quantity of Waste collected (TPD)	6tpd	0.5 ton	2.74
Quantity of Waste treated (TPD)	4tpd	0.5 ton	10.92
Quantity of Waste processed in Composting Sites (TPD)	0	NA	10.92
Quantity of Waste processed in biomethanation (TPD)	0		Nil
Quantity of Waste processed in waste to energy plants (TPD)	0	NA	Nil . Plant under construction
Quantity of Waste processed in Landfill (TPD)	4tpd	NA	Nil
Existing capacity of Waste Processing Facilities: (TPD)	na	NA	
Existing capacity of Waste Disposal Facilities: (TPD)	3tpd	NA	
Planned Capacity of Waste Processing Facilities (TPD)	na	NA	5
Planned Capacity of Waste Disposal Facilities (TPD)	3tpd	NA	5
Timeframe for installation of planned capacity of Waste Processing Facilities: (Months)	NA	NA	6
Timeframe for installation of planned capacity of Waste Disposal Facilities: (Months)	NA		6
Percentage of Urban Local Bodies (ULBs)/ Village Panchayats (VPs) Covered	80		20
Timeframe for covering all the ULBs/VPs (Months)	12 MONTHS		6
Number of Legacy waste dumpsites in the State/UTs and plan for their Remediation:	NIL		Nil



**B.12.3. Decentralised units namely pipe compost, kitchen bin, bio composter, biobin, pot bin, biogas plant**

Name of District	Wayanad		
Name of Municipality	Kalpetta	Mananthavady	Sulthanbathery
No of units supplied:		1061	Nil
No of units working:		0	Nil
No of units not working:		0	Nil
Reason for failure:		Implementing Stage	Waste to energy plant under construction

**B.12.3.1 Details of Decentralised Facilities as reported by Localbodies**

Name of District		Wayanad		
Name of Municipality		Kalpetta	Kalpetta	Kalpetta
pipe compost	Total no of units supplied	Nil	NIL	NIL
	No of units working	Nil	NIL	NIL
	No of units not working	Nil	NIL	NIL
	Quantity of waste treated using pipe composting facilities (TPD)	Nil		NIL
Kitchen bin	Total no of units supplied	Nil	-	NIL
	No of units working	Nil	-	NIL
	No of units not working	Nil	-	NIL
	Quantity of waste treated using kitchen bin facilities (TPD)	Nil		NIL
Biogas plant (Household level)	Total no of units supplied	Nil	Project ongoing	NIL
	No of units working	Nil	Project ongoing	NIL
	No of units not working	Nil	Project ongoing	NIL
	Quantity of waste treated using biogas plant (TPD)	Nil		NIL
Biogas plant (Community level)	Total no of units supplied			NIL
	No of units working			NIL
	No of units not working			NIL
	Quantity of waste treated using biogas plant			NIL

Name of District		Wayanad		
Name of Municipality		Kalpetta	Kalpetta	Kalpetta
	(TPD)			
Aerobins (Community level)	Total no of units supplied		NIL	NIL
	No of units working	Nil	NIL	NIL
	No of units not working	Nil	NIL	NIL
	Quantity of waste treated using aerobins (TPD)	Nil		NIL
biocomposter, biobin, pot bin	Total no of units supplied	Nil	Project ongoing	NIL
	No of units working	Nil	Project ongoing	NIL
	No of units not working	Nil	Project ongoing	NIL
	Quantity of waste treated using these units (TPD)	Nil		NIL
Others	Total no of units supplied	Nil	NIL	NIL
	No of units working	Nil	NIL	NIL
	No of units not working	Nil	NIL	NIL
	Quantity of waste treated using these units (TPD)	NIL		NIL

### B.13. Municipalities in Kannur

#### B.13.1. Segregation and Collection

Name of District		Kannur							
Name of Municipality	Anthoor	Panoor	Koothuparambu	Iritty	Mattanur	Payyanur	Sreekantapuram	Thalassery	Thaliparambu
Population (2011)	36290	17438	29619	40369	47078	72111	17630	92558	72465
No of Wards	28	40	28	33	35	44	30	52	34
No of Household	8460	14148	9015	8484	9796	17061	8627	24317	10300
No of Establishment	944	1948	2200	1856	1783	3345	795	8256	4100
No of Household having segregation at source	Dry	8460	7285	9015	8323	13600	8627	24317	9000
	Wet	NIL	Nil	nil	NIL	0	795	0	Nil
No of Establishment	Dry	ONCE	1900	1980	1214	2300		6000	450

**B.13.1. Segregation and Collection**

Name of District		Kannur											
Name of Municipality		Anthoor	Panoor	Koothuparambu	Iritty	Mattanur	Payyanur	Sreekantapuram	Thalassery	Thaliparambu			
having segregation at source		A MONTH											
	Wet	NIL	Nil	167	227				800	400			
D2D Collection	Households	Number	Dry	944	7285	9015	8323	8100	13600	8627	18000	9000	
			Wet	NIL	Nil	nil	NIL	NIL	0	Nil	0	Nil	
		Percentage	Dry	11.2	51.5	100	98.2	82.7	79.8	100	74.1	87.4	
			Wet						0		0		
		Collection Frequency	Dry	ONCE A MONTH	once in month	once in month	monthly	MONTHLY	Monthly	Monthly	Monthly	weekly	Monthly
			Wet	NIL	nil	nil	NA	NA	0	Nil	na		
	Establishments	Number	Dry		500	1980	1214	1650	2300	700	0	450	
			Wet		nil	167	227	1400	0	Nil Source Reducion	0	400	
		Percentage	Dry	0	25.7	90	65.5	92.6	68.8	88.1	0	11	
			Wet	0		7.6	12.3	78.6	0		0	9.8	
		Collection Frequency	Dry		weekly	daily	Weekly	DAILY	Weekly	100%	not collecting	Monthly	
			Wet		nil	daily	DAILY	DAILY	0	Nil	not collecting	Daily, Weekly	
No of collectors		28	40	64	39	52	44	30	97	34			
No of vehicles used		1	1	2	1	1	4	1	1	4			

**B.13.1. Segregation and Collection**

Name of District		Kannur								
Name of Municipality		Anthoor	Panoor	Koothuparambu	Iritty	Mattanur	Payyanur	Sreekantapuram	Thalassery	Thaliparambu
No. having source level treatment of wet waste in operation	Household	8460	Nil	3334	8484	5420	4835 unit	8627	18000	4800
	Establishment	944	Nil	72	147	560	1600	795	800	60
Percentage having source level treatment of wet waste in operation	Household	100		37	100	55.4		100	74.1	46.7
	Establishment	100		3.3	8	31.5	47.9	100	9.7	1.5
No. disposing to centralised system	Household	8460	nil	5000	NIL	NIL	Nil	Nil	nil	Nil
	Establishment	944	nil	2052	227	1100	1745	Nil	nil	Nil
Percentage having disposal to centralised system	Household	100		55.5						
	Establishment	100		93.3	12.3	61.7	52.2			
No. existing	MCF	1	nil	1	1	1	1	1	1	1
	RRF	1	nil	nil	NIL	2	1	0	nil	1
No. needed	MCF	NIL	40	7(one for every four ward)	33	NIL	5	1	3	1
	RRF	NIL	3	1	1	NIL	20	1	3	1
User fee		RS. 30 FOR HOUSES RS 50 FOR	Rs.30 for House Rs.50 for Shope	Rs 40 for every household per month	HOUSE 30 Establishment (Quantity based)	30 FOR PLASTIC FROM HOUSE		30 Rs from each registration house/Month	Rs 30 for each house	50Rs from Households 100 to 750 from Establishments

**B.13.1. Segregation and Collection**

<b>B.13.1. Segregation and Collection</b>									
<b>Name of District</b>	<b>Kannur</b>								
<b>Name of Municipality</b>	Anthoor	Panoor	Koothuparambu	Iritty	Mattanur	Payyanur	Sreekantapuram	Thalassery	Thaliparambu
	SHOPE S								
Remarks			Municipality has fixed a collection fee of Rs 40 per month for a house hold and Rs 100 from an establishment for plastic collection but people are reluctant to pay the amount regularly.				MCF the Kavumbai recycling unit temperarly close due to strike	existing MCF is insufficient to store plastic waste collected by Haritha karmasena	

**B.13.2. Centralised System**

Name of District	Kannur								
Name of Municipality	Anthoor	Panoor	Koothuparambu	Iritty	Mattanur	Payyanur	Sreekantapuram	Thalassery	Thaliparambu
Quantity of Waste generated (TPD) based on population	16	8	13	17	20	30	8	39	31
Quantity of Waste generated (TPD)			3.5	10		15 MT	3 MT	5T/D	15
Quantity of Waste collected (TPD)			2	2.5		6MT	1.5 MT	1T/D	5
Quantity of Waste treated (TPD)			1.5	2.25		6MT	1.5 MT	1T/D	5
Quantity of Waste processed in Composting Sites (TPD)			1	2		6 MT		1T/D	2
Quantity of Waste processed in bimethanation (TPD)			Nil	0			Nil	0	Nil
Quantity of Waste processed in waste to energy plants (TPD)			Nil	0			Nil	0	Nil
Quantity of Waste processed in Landfill (TPD)			Nil	0			Nil	0	Nil
Existing capacity of Waste Processing Facilities: (TPD)			1.5	4			0.5 MT	1T/D	5
Existing capacity of Waste Disposal Facilities: (TPD)			1.5	4				1T/D	5
Planned Capacity of Waste Processing Facilities (TPD)			2	5		2 years	Collected waste by Harithakarmasena	1T/D	10
Planned Capacity of Waste Disposal Facilities (TPD)			2	5			From Houses and dispose to MCF Unit	10	
Timeframe for installation of planned capacity of Waste			24 months	12				As per DPR	

Name of District	Kannur								
Name of Municipality	Anthoor	Panoor	Koothuparambu	Iritty	Mattanur	Payyanur	Sreekantapuram	Thalassery	Thaliparambu
Processing Facilities: (Months)									
Timeframe for installation of planned capacity of Waste Disposal Facilities: (Months)			24 months	15				As per DPR	
Number of Legacy waste dumpsites in the State/UTs and plan for their Remediation:			Nil	NA		“		NA	NA

**B.13.3. Decentralised units namely pipe compost, kitchen bin, bio composter, biobin, pot bin, biogas plant**

Name of District	Kannur								
Name of /Municipality	Anthoor	Panoor	Koothuparambu	Iritty	Mattanur	Payyanur	Sreekantapuram	Thalassery	Thaliparambu
No of units supplied:	33	1200 (Ring compost, KichenBin)		341 (Ring Compost)	5236			6661	4800
No of units working:	3471	1200	3014	341	5236	4835	NA	6661	4800
No of units not working:	NIL	0	320	0	NIL	Nil	NA	0	Nil
Reason for failure:	NIL	NA	Mismanagement of units and lack of awareness among the people.	NA	NA	NA	Lack of sufficient fund	na	NA

**B.13.3.1. Details of Decentralised Facilities as reported by Localbodies**

Name of District		Kannur								
Name of Municipality		Anthoor	Panoor	Koothuparambu	Iritty	Mattanur	Payyanur	Sreekantapuram	Thalassery	Thaliparambu
pipe compost	Total no of units supplied	NIL		2774			1750	Nil	5200	
	No of units working	NA		2651			1750	Nil	5200	
	No of units not working	NA		123			Nil	Nil	Nil	
	Quantity of waste treated using pipe composting facilities (TPD)	NA		1 TPD			Nil	Nil	0.5 - 1 Kg/day	
Kitchen bin	Total no of units supplied	NIL		0	NIL		Nil	Nil	Nil	
	No of units working	NIL		0	NIL		Nil	Nil	Nil	
	No of units not working	NIL		0	NIL		Nil	Nil	Nil	
	Quantity of waste treated using kitchen bin facilities (TPD)	NIL		Nil	NIL		645	Nil	Nil	
Biogas plant (Household level)	Total no of units supplied	179		22			645	Nil	218	
	No of units working	179		22			-	Nil	218	
	No of units not working	0		0			-	Nil	Nil	
	Quantity of waste treated using biogas plant (TPD)			100 Kg			-	Nil	4 - 7.5 Kg/day	
Biogas plant (Community level)	Total no of units supplied	NIL		72			-	Nil	3	
	No of units working	NIL		65			-	Nil	Nil	
	No of units not working	NIL		7			-	Nil	3	
	Quantity of waste treated using biogas	NIL		400 Kg			-	Nil	Nil	



Name of District		Kannur								
Name of Municipality		Anthoor	Panoor	Koothuparambu	Iritty	Mattanur	Payyanur	Sreekantapuram	Thalassery	Thaliparambu
	plant (TPD)									
Aerobins (Community level)	Total no of units supplied	NIL		0	NIL		-	Nil	1	
	No of units working	NIL		0	NIL		-	Nil	1	
	No of units not working	NIL		0	NIL		-	Nil	Nil	
	Quantity of waste treated using aerobins (TPD)	NIL		0	NIL		-	Nil	600 Kg/day	
biocomposter, biobin, pot bin	Total no of units supplied	NIL		538	NIL		-	Nil	Bin - 229 Pot - 115	
	No of units working	NIL		538	NIL		-	Nil	Bin - 229 Pot - 115	
	No of units not working	NIL		0	NIL		-	Nil	Nil	
	Quantity of waste treated using these units (TPD)	NIL		5 TPD	NIL		-	Nil	1.5 to 2 Kg/day	
Others	Total no of units supplied	5186		0			2440	Ring Compost-300	Ring Compost - 58	
	No of units working	5186		0			2440	300	58	
	No of units not working	0		0			-	0	Nil	
	Quantity of waste treated using these units (TPD)			0			-	0.5TPD	0.5 to 1 Kg/day	

### B.14. Municipalities in Kasargod

#### B.14.1. Segregation and Collection

Name of District		Kasaragod				
Name of Municipality		Kanhangad	Kasaragod	Nileshwaram		
Population (2011)		73536	131000	40802		
No of Wards		43	38	32		
No of Household		21000	14835	11921		
No of Establishment		3680	9930	1502		
No of Household having segregation at source		Dry	21000	12685	11921	
		Wet	21000	12685	11921	
No of Establishment having segregation at source		Dry	1250	6218	1502	
		Wet	2430	6218	1502	
D2D Collection	Households	Number	Dry	21000	12685	9517
			Wet		0	
		Percentage	Dry	100	85.5	79.9
			Wet	0	0	0
	Collection Frequency	Dry	Monthly	monthly	daily	
		Wet		0		
	Establishments	Number	Dry	800	3150	901
			Wet	600	0	
		Percentage	Dry	22	31.8	60
			Wet	16	0	0
		Collection Frequency	Dry	Daily	weekly	daily
			Wet	Daily	0	
No of collectors			36	17	30	
No of vehicles used			3	3	2	
No. having source level treatment of wet waste in operation		Household	21000	9654	193	
		Establishment	2430	368	38	

<b>B.14.1. Segregation and Collection</b>				
<b>Name of District</b>		<b>Kasaragod</b>		
<b>Name of Municipality</b>		<b>Kanhangad</b>	<b>Kasaragod</b>	<b>Nileshwaram</b>
Percentage having source level treatment of wet waste in operation	Household	100	65.1	1.7
	Establishment	66	3.8	2.6
No. disposing to centralised system	Household	NIL	nil	nil
	Establishment	3	8	nil
Percentage having disposal to centralised system	Household			
	Establishment	0.1	0.1	
No. existing	MCF	2	4	1
	RRF	1	1	1
No. needed	MCF	0	38	3
	RRF	0	2	Nil
User fee		Rs.50 from household Rs 200-10,000 from establishments	house hold 50, establishments 100	Approximately- 75000
Remarks				Household- Rs.30/m, Shops -small-50/m, Big-100/m

**B.14.2. Centralised System**

<b>Name of District</b>		<b>Kasaragod</b>		
<b>Name of Municipality</b>		<b>Kanhangad</b>	<b>Kasaragod</b>	<b>Nileshwaram</b>
Quantity of Waste generated (TPD) based on population		45	55	17
Quantity of Waste generated (TPD)		45	11 mt	

Name of District	Kasaragod		
Name of Municipality	Kanhangad	Kasaragod	Nileshwaram
Quantity of Waste collected (TPD)	0.7	3mt	
Quantity of Waste treated (TPD)	0.5	3 mt	
Quantity of Waste processed in Composting Sites (TPD)	0.5	2.5	
Quantity of Waste processed in biomethanation (TPD)	NIL.	2.5	
Quantity of Waste processed in waste to energy plants (TPD)	NIL.	0	
Quantity of Waste processed in Landfill (TPD)	NIL.	0	
Existing capacity of Waste Processing Facilities: (TPD)	5	3	
Existing capacity of Waste Disposal Facilities: (TPD)		3	
Planned Capacity of Waste Processing Facilities (TPD)		5	
Planned Capacity of Waste Disposal Facilities (TPD)		5	
Timeframe for installation of planned capacity of Waste Processing Facilities: (Months)			
Timeframe for installation of planned capacity of Waste Disposal Facilities: (Months)			
Number of Legacy waste dumpsites in the State/UTs and plan for their Remediation:	NA		

**B.14.3. Decentralised units namely pipe compost, kitchen bin, bio composter, biobin, pot bin, biogas plant**

Name of District	Kasaragod		
Name of Municipality	Kanhangad	Kasaragod	Nileshwaram

No of units supplied:	1300	768	2942
No of units working:	1300	768	2942
No of units not working:	NIL	0	nil
Reason for failure:	NA	na	na

**B.14.3.1 Details of Decentralised Facilities as reported by Localbodies**

Name of District		Kasaragod		
		Kanhangad	Kasaragod	Nileshwaram
Name of Municipality				
pipe compost	Total no of units supplied	893	768	2840
	No of units working	893	768	2840
	No of units not working	0	0	--
	Quantity of waste treated using pipe composting facilities (TPD)	1.33	2.3 ton	2.1 TPD
Kitchen bin	Total no of units supplied	0	Nil	0
	No of units working	0	Nil	-
	No of units not working	0	Nil	-
	Quantity of waste treated using kitchen bin facilities (TPD)	0	Nil	-
Biogas plant (Household level)	Total no of units supplied	156	Nil	64
	No of units working	156	Nil	64
	No of units not working	0	Nil	-
	Quantity of waste treated using biogas plant (TPD)	0.6	Nil	0.5TPD
Biogas plant (Community level)	Total no of units supplied	0	Nil	-
	No of units working	0	Nil	-
	No of units not working	0	Nil	-

Name of District		Kasaragod		
Name of Municipality		Kanhangad	Kasaragod	Nileshwaram
	Quantity of waste treated using biogas plant (TPD)	0	Nil	-
Aerobins (Community level)	Total no of units supplied	5	Nil	
	No of units working	5	Nil	
	No of units not working	0	Nil	
	Quantity of waste treated using aerobins (TPD)	0.25	Nil	
biocomposter, biobin, pot bin	Total no of units supplied	0	Nil	
	No of units working	0	Nil	
	No of units not working	0	Nil	
	Quantity of waste treated using these units (TPD)	0	Nil	
Others	Total no of units supplied	21	Nil	172
	No of units working	21	Nil	172
	No of units not working	0	Nil	
	Quantity of waste treated using these units (TPD)	0.04	Nil	0.5TPD

# **PROPOSAL FOR IMPLEMENTATION OF RULE 17(1) OF THE SOLID WASTE MANAGEMENT RULES, 2016 BY PRODUCERS, BRAND OWNERS, MANUFACTURERS AND IMPORTERS**

## **Background**

Solid Wastes Management Rules, 2016 in Rule 17(1) states that all manufacturers of disposable products such as tin, glass, plastics packaging etc or brand owners who introduce such products in the market shall provide necessary financial assistance to local authorities for establishment of waste management system. Rule 17(2) states that all such brand owners who sell or market their product in such packaging material which are non-biodegradable shall put in place a system to collect back packaging waste generated due to their production. Though four years was over, there is no compliance of these rules by the brand owners, producers, manufacturers and importers. Majority brand owners are not taking back waste packaging from Kerala and some brand owners have made some arrangements through PROs, the information on quantity of packaging taken back have not been furnished to Kerala State Pollution Control Board. Hence the Kerala State Pollution Control Board is unable to furnish the said details to Hon'ble National Green Tribunal and to Central Pollution Control Board through statutory annual reports under Solid Waste Management Rules, 2016 and Plastic Waste Management rules, 2016

As per Solid Waste Management Rules, 2016, scientific collection, transport, treatment and disposal of solid waste is to be implemented in the State. But there is failure in the implementation especially of door- to-door collection mechanism due to paucity of funds for giving wages to waste collectors. Door-to- door collection can be implemented by local authorities and village panchayaths census towns and urban agglomeration effectively by giving wages to waste collectors through user fee as well as EPR fund.

## **Objectives**

The financial assistance by brand owners/producers/manufacturers/importers can be remitted in the EPR fund and this fund can be utilized for meeting to the extent possible cost of door-to-door collection.

## Methodology

- 1) Separate fund under Rule 17 of the Solid Waste Management Rules (EPR fund) is to be created from the fee paid by brand owners/producers/manufacturers/importers who introduce disposable products and packaging in the market.
- 2) The disposable products/packagings coming under the purview of EPR and its rate are given below. The rate for packaging except for Large dimension packages is fixed on weight basis. Large dimension packages are charged on volume basis as collector costs would correspond more closely with volume for materials of low bulk density.

### 3 ) EPR fee for brandowner/importer/ manufacturer/Producer of disposable products and packaging

Material	Quantity produced (from Sl.No.6)	Quantity transferred by producer to Brandowners / Exporters	Quantity collected by Return Deposit Scheme	Qty. collected through own arrangement - Brand specific	Qty. collected by own arrangement (brand neutral)	Quantity assessed for EPR fee	Rate of EPR fee		EPR fee to be deposited
	a	b	c	d	e	f = a-b-c-d-0.25e	g		h = 1000* g*f
Aluminium / tin (in MT)							₹ 10.00	/kg	
Compostable plastic (MT)	aerobic						₹ 10.00	/kg	
Compostable plastic (MT)	aerobic & anaerobic						₹ 5.00	/kg	
Paper (MT)							₹ 10.00	/kg	
Plastic (MT)							₹ 10.00	/kg	
Glass (MT)							₹ 10.00	/kg	
Large dimension packaging (m <sup>3</sup> )*							₹ 100.00	/m <sup>3</sup>	



**4) Estimation of quantity of disposable product / packaging manufactured or introduced into Kerala**

	Name of disposable product / bottle / bag / packaging	Size	Number of units	kg/unit		Total quantity
Aluminium / tin						
Plastic						
Compostable Plastic						
Aerobic						
Aerobic+Anaerobic						
Glass						
Paper						

\*Large Dimension packaging boxes and associated dividers/moulded EPS/ cushioning\*\*

Sl.no.	Length m	Width m	Height m	Volume m <sup>3</sup>	No. of units	Total vol m <sup>3</sup>

\*\* Large dimension box/carton paperboard with or without light weight, styrofoam packaging/blister packaging/bubble packaging/cushioning/dividers

5) The amount to be remitted is based on the quantity of packaging proposed to be introduced in the State of Kerala in a year. A self-affidavit is to be given in advance regarding the quantity of products, and packaging. The deviation exceeding the declared quantity in the affidavit by 25% shall be reported by the applicant by the end of that financial year. If any deviation observed thereafter from the self-declaration given is observed, the registration stands cancelled.

6) At least 1% of the application will be counter checked with GST department for ensuring the correctness of information provided through self-affidavit by the manufacturer/producer/brand owner/importer.

7) For branded items, brand owners are to remit fee based on the quantity of packaging entered into the State. For non-branded items, manufacturer/importer/producer are to remit the fee.

8) The responsibility of the manufacturer/producer/brandowner/importer will be over by remitting fee in the EPR fund. With regard to disposable/plastic products and packaging also, the responsibility of the manufacturer/producer/brand owner/importer as per the Plastic Waste Management Rules is discharged by payment of EPR fee. The responsibility of collection, treatment and disposal shall entirely lie with the local body.

- 9) The EPR fee will be collected through online application. The format of online application and EPR registration form are attached as Format 1 and 2. The fund will be maintained by the Pollution Control Board.
- 10) The sharing of EPR fund is based on the successful providing of door- to- door collection by the local authority. The success is examined based on the statutory annual reports submitted by the local bodies under the Solid Waste Management Rules, 2016 and Plastic Waste Management Rules, 2016 and also based on the field verification by the Kerala State Pollution Control Board.
- 11) The list of unsuccessful local bodies will be transferred to the Director, Urban Affairs Directorate and to the Director, Panchaayth Directorate for not giving theEPR share to them.
- 12) The amount will be transferred to the Director, Urban Affairs Directorate and to the Director, Panchayath Directorate for transferring fund to the successful local bodies.
- 13) 5% of the fund will be set apart as operation charges of Kerala State Pollution Control Board namely creation and maintenance of online application for EPR fund, auditing, and salary for staff deployed for implementation, monitoring and enforcement of SWM and PWM 2016.
- 14 )The details regarding the applications received, EPR registration given, amount collected, amount transferred to local bodies, status of door-to door collection, status of waste management by local bodies etc., will be displayed on EPR online portal.