

GOVERNMENT OF KERALA

No.B2/195/2018/Envt.

Environment (B) Department
Thiruvananthapuram,
Dated: 26/03/2021

From
The Additional Chief Secretary to Government

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

Sir,
Sub:- Environment Department – on OA 606/2018 – submission of quarterly report
to NGT- reg.

I am to forward herewith the quarterly report 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,



SHARMILA.C
Joint Secretary

For Additional Chief 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 & 21.1.2021 in O.A
No 514/2019 and orders dated 30.01.2020 & 03.08.2020
in O.A. 442/2013(SZ)

Order dated 4.12.2019 in O. A. No. 247/2017

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**

28th February, 2021

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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

CHAPTER I

EXECUTIVE SUMMARY

In Kerala, 3.7 million tonnes of municipal solid wastes is generated annually. 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 inert. 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 2018, 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 off-ragile ecosystems.
- Undertake appropriate IE 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. A quarterly report is to be furnished by the Chief Secretary, every three months. First report shall be furnished by July 30, 2019. The Chief Secretary may personally monitor the progress at least once in a month, with all the District Magistrates.
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; seventh report on 7-12-2020. 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 Sectoral status study on solid waste management sponsored by the Water and Sanitation Project - South Asia (World Bank)

² 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>)

1.1 Statistics of Kerala's Sewage and Solid Waste

1	Total generated	Quantity of sewage in MLD			11449 (Urban 3521; Rural 7928)																		
		Total	1192*																				
		Urban	317																				
		Rural	875																				
2	Total capacity installed to treat in local bodies	In Urban Local Bodies <ul style="list-style-type: none"> • 12 common STPs for 124 MLD • 2 FSTPs for 0.2MLD • 1000 individual STPs for 69MLD (large and medium establishments) • Septic tank/soak pit/leach pit of 116MLD for remaining households 			6303																		
4	Total amount treated in local bodies	<ul style="list-style-type: none"> • 12 common STPs for 92 MLD • 2 FSTPs for 0.2MLD • 1000 individual STPs for 69MLD (large and medium establishments) • Septic tank/soak pit/leach pit of 116MLD for remaining households 			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)			2981 TPD (In the municipalities and panchayats , biodegradable waste are disposed in their premises by composting, but this quantity is yet to be reported by the municipalities)																		
6	Gap in treatment	<ul style="list-style-type: none"> • Projects for augmentation and implementation of facilities mainly for urban area for 124 MLD 			Projects for augmentation and implementation of WtE plant																		
6	Capacity under construction	<table border="1"> <thead> <tr> <th>Status</th> <th>Capacity (MLD)</th> <th>% of achievement</th> </tr> </thead> <tbody> <tr> <td>Achievement of sewage treatment</td> <td>35</td> <td>30</td> </tr> <tr> <td>Under construction</td> <td>8</td> <td>6.5</td> </tr> <tr> <td>Work awarded</td> <td>30.7</td> <td>25</td> </tr> <tr> <td>Tendering/DPR preparation/Technical sanction</td> <td>15.2</td> <td>12.5</td> </tr> <tr> <td>To be tendered</td> <td>33.5</td> <td>27</td> </tr> </tbody> </table>			Status	Capacity (MLD)	% of achievement	Achievement of sewage treatment	35	30	Under construction	8	6.5	Work awarded	30.7	25	Tendering/DPR preparation/Technical sanction	15.2	12.5	To be tendered	33.5	27	2 Nos <ul style="list-style-type: none"> • WtE plant at Kozhikode - work awarded and clearing started • WtE plant at Sulthanbathery - started construction
Status	Capacity (MLD)	% of achievement																					
Achievement of sewage treatment	35	30																					
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Tendering/DPR preparation/Technical sanction	15.2	12.5																					
To be tendered	33.5	27																					

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	2 Nos Kozhikode Sulthanbathery
				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	
	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			
(b)	How many plants under tender process	Tendering/Council approval/Technical sanction - 16				8 Nos (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 (updated status attached in page no: 32).
- Kerala Solid Waste Management Project has been developed with the support of World Bank for an amount of 300 million US dollars.
- Clean Kerala Company (CKL), is providing 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. 879 Haritha Karma Sena units (94.8% increase in 2021 against 2020), 1464 Material Collection Facilities (50.4% increase in 2021 against 2020) of and 182 Resource Recovery Facilities (177.8 % increase in 2021 against 2020) are in operation.
- Considerable progress has been achieved in providing Door- to –Door collection for dry waste in both households (84.5%) (87.7 % increase in 2021 against 2020) and establishments (73%) for model cities/town/villages.
- CKL collected and diverted 360T of non recyclable plastic waste for road tarring in LSGD and 315 T for road tarring in PWD. (15.78% increase in 2021 against 2020)
- In principle clearance given for proposal for co-incineration facility at Malabar cements. Though industries Department informed regarding the dropping of project by the company, Board issued directions to the Malabar Cements Limited to facilitate co-incineration in their plant.
- For Regional Sanitary Landfill, 25 acre of land has been identified at the site of FACT, Ambalamedu, Ernakulam and action is initiated for taking over the land.
- CKL is taking action to provide Integrated Waste Management system at Kuttipuram, Malappuram.
- Rendering plant for treating the chicken waste in Kozhikode Corporation is in operation. Refrigerators are provided in the chicken stall & for storage and transportation refrigerated vehicle are used. 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 has led to preventing of 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.

- Monthly District Level Monitoring System meeting at district are being conducted and is being recorded by the Board.
- The Board addressed all District Collectors on the issues relating to waste management in their jurisdiction.
- Violation of SWM rules have been identified and notice/direction for easy imposition and being issued by the Board.
- Survey on littering/ sanitation is being conducted by the Board.
- Guidelines for handling/managing waste generated during Covid pandemic was issued by the Board to LSGD & directions were issued to follow the guidelines by the Office concerned.
- 10,000 offices in the State have been declared as Green office after conducting the green audit of the Government offices.
- Kerala State Pollution Control Board convened awareness programmes on 24th and 26th February, 2021 by Advisor of Indore Corporation to all the Board officials as well as to officials of Local bodies on Indore Waste Management and Waste to Energy Plants and biomining.
- SOP for Sanitary napkin is par with SOP of CPCB is issued.
- SOP for Railway & rendering plant is issued.
- SOP for waste management from pig farm is issued.

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. Irinjalkkuda 5. Palayam 6. Munnar 7. Varkala
 3. Biomining Work awarded to two places (Kureepuzha, Kollam and Chelora, Kannur)
 4. At Brahmapuram, tendering completed, identified the bidder and action is being taken

for the award of work to the successful bidder. Drone survey of the dumpsite was completed by NIT, Calicut.

5. Tendering stage at two sites (1. Kottayam, 2. Attingal)
6. Progress for various stages of Biomining is 40%

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. Inspections are done and single use plastic is also siezed
4. Surprise inspections are conducted and confiscating the stock of single use plastic.
5. Kerala State Pollution Control Board convened awareness programmes on 25th February, 2021 by Deputy Team Leader, GIZ to all the Board officials as well as to officials of Local bodies on plastic waste management.

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 with respect to EPR proposal 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 district. Facility for treating septage is also available at the site. Control unit exists for the monitoring of vehicles engaged in collection and transport of septage. Sewerage augmentation work is also going on.
6. Fecal septage treatment plant functioning at Willington Island at Ernakulam district can be taken as a model plant.
7. Model DEWATS plant in a slum area at Chathanad, Alappuzha
8. Engineering colleges in the State in collaboration with Irrigation department prepared Detailed Project Report of 21 polluted river stretches for the abatement of pollution and rejuvenation of the 21 rivers.

1.2.5 Restoration of water bodies

1. Monthly progress report has been submitted upto January 2021 before the Central Monitoring Committee.
2. In the case of polluted stretches, progress is there on the works for restoration of polluted stretches
3. For coastal discharges, meetings were conducted with Kerala Coastal Zone Management Authority, CUSAT & National Centre for Coastal Research, Chennai.
4. Coastal survey conducted by the Board coastal action plan also submitted.
5. Percentage of progress is 61.25% in liquid waste management & 25% on solid waste management for river Karamana; for river Pamba is 76%; for river Manimala is

22.5%; for river Periyar is 60%; for river Puzhakkal is 68.33%; for river Kallayi is 57.57%; for river Tirur is 62%; for river Kadalundi is 92%; for river Kavvayi is 92%; for river Peruvamba is 64%; for river Ramapuram is 50%; for river Uppala is 37.5 %; for river Morgal is 69.4%.

6. Coastal Action plan have been prepared & submitted by CPCB for approval.
7. For restoration of ponds & lakes, Government has identified Irrigation (IDRO) as nodal office for the implementation of Action plan already approved.

1.2.6 Biomedical Waste Management

1.Common Bio-medical waste treatment plant

- i. Common biomedical waste treatment plant (IMAGE) of capacity 55.8TPD is in operation at Palakkad.
- ii. Establishment of one more common plant of 16 TPD is in an advanced stage at Ambalamughal, Ernakulam District and is expected to have trial run shortly.
- iii. Land for installation of another plant at Brahmapuram was also allocated.
- iv. Action is being initiated to set up new common plants in Southern & Northern Districts.

2.Inventory of biomedical waste

- i. Inventory submitted to the Central Pollution Control Board
- ii. As per the inventory, there are 17,354 health care facilities (HCF) which include 817 AYUSH and 533 veterinary.

3.Collection and disposal of unused medicines from houses

- i. 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
- ii. Action is being taken for the implementation of the above programme in other parts of the State

1.2.7 Hazardous Waste Management

- i. Total hazardous waste generation is 3, 14,488.2 TPA as per Annual Report in the whole state for the year 2019_2020

- ii. 1617 industrial units are generating hazardous waste.
- iii. 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.
- iv. Action is being initiated to update the inventory of Hazardous waste.
- v. 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.
- vi. Action is being taken to bring all ports under the purview of HoWM Rules, 2016
- vii. Action is being taken to bring all ports under consent purview.
- viii. Contaminated sites have been identified and reported to CPCB
- ix. 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. (111.8 % increase in 2021 against 2020)
- 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

Kerala State Pollution Control Board convened awareness programmes on 26th February, 2021 by Deputy Team Leader, GIZ to all the Board officials as well as to officials of Local bodies on E-waste Management.

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 Defense, 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 importers 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, 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)).
- 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 were entrusted by the Maradu Municipality for the removal of concrete debris and they maintained 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 given to 104 number of police officers by the officials of the Central Pollution Control Board in January 2021 and the training programme was arranged by the Kerala State Pollution Control Board. The training was given by the officials of the Central 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 38 meetings have so far been conducted.
2. Capacity Building – Kerala state pollution control board recruitment rules for state & subordinate services was notified on 11th January 2021 & as per rules Kerala Public Service Commission has been entrusted for Recruitment & vacancies have been reported to Public Service Commission.
3. **Environmental monitoring Cell** is functioning in the office of the Chief Secretary and taking efforts for the co-ordination liaison with all departments concerned.
4. State Level Monitoring Committee and District Level Monitoring Committee are reviewing the progress for the implementation of Rules and progress has been observed.
5. Direction for Environmental Compensation was issued to Thrissur Corporation and they obtained stay from the Hon'ble High Court. Stay was vacated and further action as per order is being taken. For Thiruvananthapuram Corporation, notice was issued to showcause reasons for not levying an Environmental compensation, but they obtained stay from the Hon'ble High Court. Direction for Environmental Compensation was issued to Kochi Corporation for levying Environmental Compensation of Rs. 14.90 crore and it was stayed. Notice was also issued to nine

local bodies to showcase reasons for not levying Environmental Compensation.

6. Showcase notice for not levying Environmental Compensation was issued to eight municipalities and 51 Grama panchayaths

1.2.13 Other compliances

- **District Environmental Plan** was submitted by all districts. 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>Community level</p> <p>OWC plants</p> <p>Three plants (8 TPD at Shakthan; 4 TPD at Kurichira and 4 TPD at Kovilakathu padam)</p> <p>Biogas plants- 8Nos. (2</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>

No	Model cities	Thiruvananthapuram	Thrissur	Kozikode
			TPD) Mobi trash- 1 No. (0.5TPD) Thumboor muzhi (1.15TPD) <u>Household level</u> Pipe compost-2272; Biogas plant-727, Smart biobins-400; Biobins- 50; Pit compost -52,655	
<u>Compliance of Rule 22</u>				
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

No	Model cities	Thiruvananthapuram	Thrissur	Kozikode
22(4) & 22(5)	Source level segregation Door to Door collection of segregated waste	<p>30 % collection from households for dry waste and no wet waste from households. Haritha 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"> • MCF-54 • RRF-4 • Haritha Karma Sena –Not reported for households 	<p>87% collection of dry waste from households</p> <p>66% door to door collection of dry waste from establishment</p> <ul style="list-style-type: none"> • MCF-11 • RRF-3 • Haritha Karma Sena/collectors -145 • 34 numbers of three wheel autos, 7 Leyland vehicles, 3 tractors, 4 tippers and JCB • 26 scrap dealers have been registered. 78 rag pickers have been identified 	<p>50% door collection of dry wastes from households</p> <p>78.2% door to door collection of dry waste from establishment</p> <ul style="list-style-type: none"> • MCF-12 • RRF-2 • Haritha Karma Sena/collectors - 645

No	Model cities	Thiruvananthapuram	Thrissur	Kozikode
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"> • Palayam(7000m³)- remediation work undertaken by Smart City • Erumakkuzhy(2388m³)- completed • Vilappilsala (to be initiated) 	<p>One dumpsite at Laloor (51634.84m³ as per local body's report)</p> <p>Proposal for biomining submitted to Suchitwa Mission for approval</p>	<p>One dump site at Njaliyanprambha (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	Kunnamkula m
	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
Compliance of Rule 22				
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	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"> • MCF-200 mini • RRF-1 • Haritha Karma 	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"> • MCF-1

	Model Town	Attingal	Punalur	Kunnamkulam
		<ul style="list-style-type: none"> • MCF-1 • RRF-1 • Haritha Karma Sena/ Collectors -44 	Sena/collectors -127	<ul style="list-style-type: none"> • RRF-1 • Haritha Karma Sena/collectors -56
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	<p>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</p> <p>Action has been initiated for providing secured landfill at Attingal.</p>		
22(10)	Bio-remediation or capping of old and abandoned dumpsites	<p>One dumpsites</p> <ul style="list-style-type: none"> • Attingal(13000m³)- Project proposal for biomining under consideration 	<p>One dumpsite at Punalur</p> <p>Site cleared</p>	-

Status of waste management model villages

Sl. No.	District	Local body	Quantity of SW generated in TPD	MCF	RRF	HKS/collectors	Door-to-Door house hold in %	Door-toDoor 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)
Model Panchayaths												
1	Thiruvananthapuram	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	Kadaplamattom	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
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

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)
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 Muncipal 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
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	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
						composting							
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, Windrow 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

Name of District	Quantity of Muncipal 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
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, Windrow and vermi composting units	463.46	309.60	9	283.18	Planned to construct WtE plant of 200 TPD	1	3
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,	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 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
						Kitchen bins							
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
Total	11449.39	1772.96			10 WtE plant of total 1920 TPD		5135.01	3332.79	130.84	2850.76		10	29

CHAPTER2

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 oneyear.	<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"> • 38 meetings have so far been conducted. • By this drive, in the State, land has been identified at ten places for the 	

Sl. No.	Cases		Order	Status	Page No.
				<p>Waste to Energy plant and of which work has been initiated at Kozhikode and Wayanad. Work awarded to Kollam, Palakkad and Kannur.</p> <ul style="list-style-type: none"> • Tendering of the works has been done with the support of Kerala State Industrial Development Corporation. • Waste Characterisation study is done by Kerala State Pollution Control Board in the dumpsite of Kannur Corporation • Manpower (technical assistants) and 20 Graduate Engineering Apprentices have been provided through PCB for monitoring the compliance for three months. 	
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>Para 40(a)</p> <hr/> <p>Para 48(ii)</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</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 Regional Sanitary Landfill, land (25 acre) has been identified at site of FACT at Ambalamedu, Ernakulam and action is being taken for take over.</p>	49

Sl. No.	Cases		Order	Status	Page No.
	<p>Order dated 07-01-2020 in 606/2018 on waste management</p> <p>Order dated 10-01-2020 in 606/2018 on waste management</p>	<p>Para. 4</p> <p>Part 13</p>	<p>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 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</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 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>50</p>

Sl. No.	Cases		Order	Status	Page No.
			<p>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>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>	
	<p>Order dated 2-7-2020 in O.A. 606/2018 on waste management</p>		<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 be 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>Direction was issued to two Corporations namely Thrissur Corporation and Kochi Corporation to levy environmental compensation. Notice was also issued to</p> <p>Notice issued to local bodies which include, four Corporations, ten Municipalities and 51 Panchayths. This include Kochi Corporation; Chalakkudy Municipality; Kollam Corporation, Thodupuzha Municipality, Kattappana Municipality and 51</p>	

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			The documents namely Model concession agreement, RFP, empanelled agencies, checklists prepared by NITI Aayog were uploaded in the website.	Panchayathsfor 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	Para.25 Para.28	<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 Stateinitiated 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. Action is being taken for the award of work at Brahmapuram. Workd awarded in Kannur and in Munnar Grama panchayath.</p>	42

Sl. No.	Cases		Order	Status	Page No.															
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 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.</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 middle of February, 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. Action is also being taken to install dismantling unit in Idukki district.</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 & Anr. Vs. Union of India & 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 & 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.</p> <p>Contaminated sites have been identified and reported to CPCB</p> <p>Action is being take to conduct Environment audit in captive SLF and common Hazardous Landfill</p>	

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	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.	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	
2.7	Order dated 25-4-2019 of the Hon'ble NGT in O.A.No.606/2018 on waste management	Para 48(e)	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 pollutedstretches As per order dated 25-1-2019 in O.A.No.581/2018 directing the State to take remedial action on actionplan. 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 advancedstate, 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	

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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 is reviewed regularly.</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>Detailed project reports were prepared for these 21 river stretches by 33 Engineering Colleges in collaboration with Irrigation Department.</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</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>erring officers.</p> <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 judicial-ngt@gov.in.</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.	

Sl. No.	Cases		Order	Status	Page No.
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 fundscollected.	<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 wastesite(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	Para 13	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 nd phase including field monitoring.	
	Order dated 25-02-2020 in OA No 325/2015	Para .5			

Sl. No.	Cases		Order	Status	Page No.
2.22	Order dated 05-11-2019 in O.A. No. 639/2018		<p>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.</p>	<p>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.</p> <p>For permanent appointment, notification was issued on 26-12-2015 for appointment by Public Service Commission and rules notified on 14-11-2019. Vacancies have been reported to Kerala Public Service Commission.</p>	

CHAPTER3

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

- i. Rule 22(1) - Identification of suitable sites for setting up solid waste processing facilities
- ii. Rule 22(3)- Procurement of suitable sites for setting up solid waste processing facility and sanitary landfill facilities
- iii. Rule 22(7)- Setting up solid waste processing facilities by all local bodies having one lakh

population or more population

- iv. 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 issued direction to the Malabar Cements to provide facility for co-incineration.
- **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	<p style="text-align: center;">1.1 Waste to Energy Plant</p> <ul style="list-style-type: none"> • 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. • Consent to establish was issued to the waste to Energy plant. • Clearing of ground for the plant is undergoing. • Land development works are undergoing. Alternate road has been constructed on the periphery and vehicles started moving through alternate roads. The main road through the Centre for the site has now been closed. Request submitted to Social Forestry department for cutting trees in the site. Laying of water supply line to the site is nearing completion. • M/s. MITCON Consultancy and Engineering Services has been appointed as the project management consultant for the development of the project with WtE facility at Kozhikode 	
		<p style="text-align: center;">1.2 Biomining at Njaliyanparambu</p> <ul style="list-style-type: none"> • M/s Zonta Infratech Pvt Ltd started the work of clearing of legacy waste on 3rd March, 2020. • 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. <ul style="list-style-type: none"> • The work is in progress at the site. 	
2)	Kannur Chelora (Govt. Land) 9.7 acres	<p style="text-align: center;">2.1 Waste to Energy Plant</p> <ul style="list-style-type: none"> • Blue Planet Kannur Waste Solutions Private Limited was formed to take up the development of the project. • Waste Characterisation study was Conducted by SPCB • SLAC directed MD, KSIDC & Secretary, Kannur Municipal Corporation to take immediate steps to execute the Lease Agreement and Concession Agreement for the project. • KSIDC has completed the tender process and 	

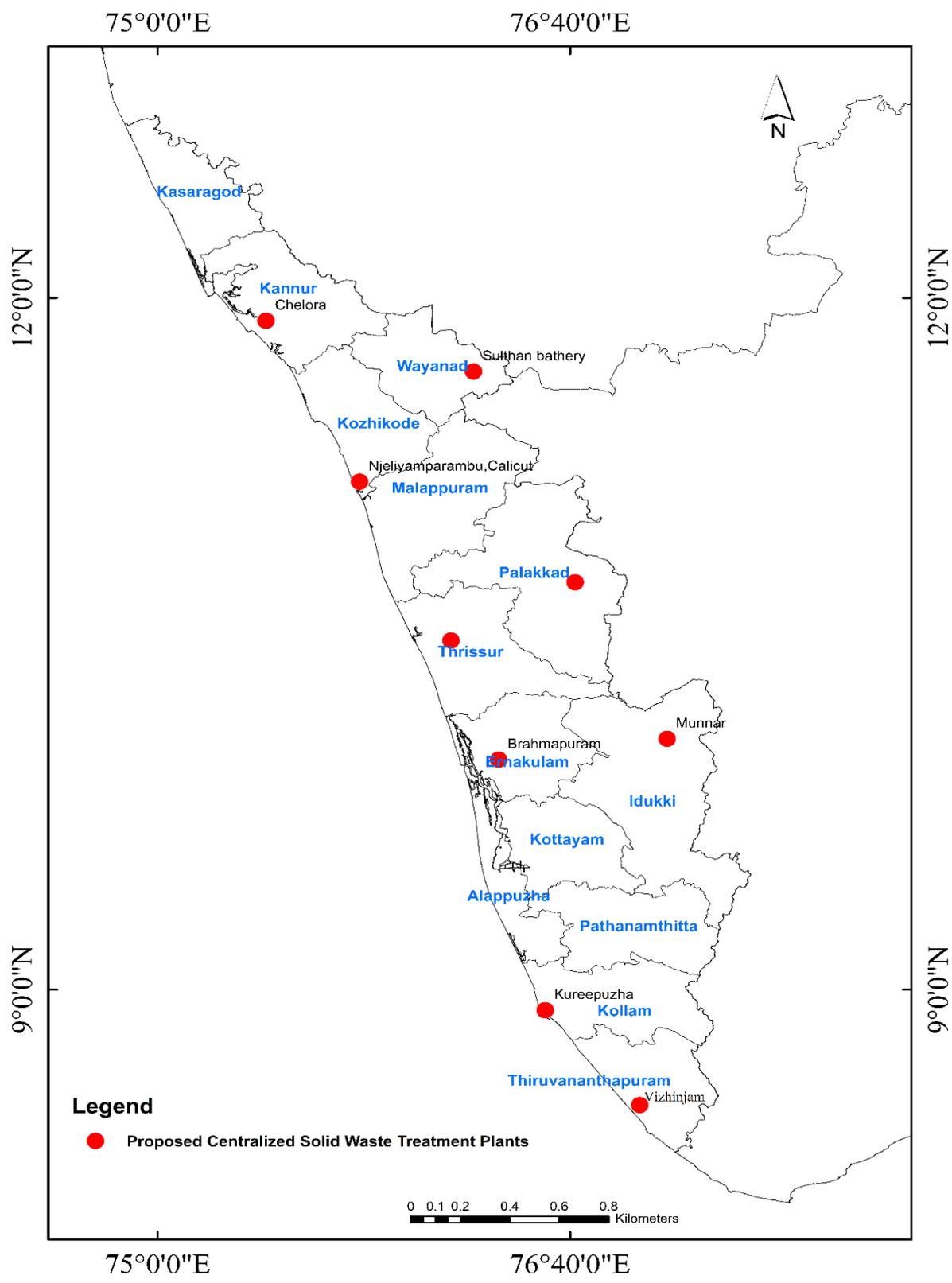
Sl. No	Corporation/ Municipality	Status	
		<p>the final offer along with details of the contractor, draft agreement to be executed with the Contractor and the technical proposal submitted by the Contractor has been forwarded to Kannur Corporation on 07th August 2020 for further proceedings.</p> <ul style="list-style-type: none"> • 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. • The concensionarire has reported that the field studies including waste characterization and waste quantification studies, as part of DPR preparation will be commencing next week. 	
		<p style="text-align: center;">2.2 Legacy waste</p> <ul style="list-style-type: none"> • 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. • 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. • Agreement has been executed with M/s Zonta 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 	

Sl. No	Corporation/ Municipality	Status	
		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 style="text-align: center;">3.1 Waste to Energy Plant</p> <ul style="list-style-type: none"> • Blue Planet Palakkad Waste Solutions Private Limited was formed to take up the development of the project. • 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 & Bradstreet for preparing the DPR and that the study is in the final stages. As instructed by the Committee, modifications are incorporated in the DPR. Final DPR will be submitted by the end of February 2021. 	
4)	Kollam Kureepuzha (Govt. land) 7.05 acres	<p style="text-align: center;">4.1 Waste to Energy Plant</p> <ul style="list-style-type: none"> • 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 was evaluated by the Committee and it has been modified and final DPR submitted to LSGD. • Concessionaire has taken steps to submit applications to the concerned departments and agencies for statutory approvals and clearances. 	
		<p style="text-align: center;">4.2 Biomining</p> <ul style="list-style-type: none"> • 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. • SLAC directed the Secretary Kollam Corporation to take necessary steps to ensure either the Contractor follow the tender conditions or cancel 	

Sl. No	Corporation/ Municipality	Status	
		<p>the present tender and go for re-tender immediately.</p> <ul style="list-style-type: none"> • Again the project has been retendered by the Corporation. 	
5.	Thiruvananthapuram Vizhinjam	<p>5.1 Waste to Energy Plant</p> <ul style="list-style-type: none"> • 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. • 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. • 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 • 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. • 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. • Directed State Pollution Control Board to evaluate the Technical proposal submitted by the Consortium for confirming the uniqueness and authenticity of the proposed technology. 	

Sl. No	Corporation/ Municipality	Status	
6)	Ernakulam Brahmapuram (Govt. land) 20 acres	<p style="text-align: center;">• 6.1 Waste to energy plant</p> <ul style="list-style-type: none"> • 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 Brahmapuram. The last date for submission of bids has been extended to 14th September 2020. • 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. <p style="text-align: center;">6.2 Biomining</p> <ul style="list-style-type: none"> • 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. • 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 	
7)	Idukki Munnar 2 acres	<p style="text-align: center;">7.1 Waste to Energy Plant</p> <ul style="list-style-type: none"> • 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. • 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. • SLAC after detailed discussion resolved to accord sanction to proceed with the Financial evaluation of the Bid 	

Sl. No	Corporation/ Municipality	Status	
		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 briquestes for construction purpose.	
8)	Wayanad Sulthan Bathery 0.5 acres	<ul style="list-style-type: none"> • Construction of platform completed • Action to be taken on the installation of machinery 	
9)	Thrissur	<p>9.1 Waste to Energy Plant</p> <ul style="list-style-type: none"> • Thrissur Corporation identified land at Ollookkara village in Thrissur district. • 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 • Secretary, Thrissur Municipal Corporation to report the status of price negotiation done with the owners of the land identified. 	
		<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"> • 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. 	



Map showing proposed Waste to Energy plant

- i. 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

- ii. **Rule 22(3)- Procurement of suitable sites for setting up solid waste processing facility and sanitary landfill facilities**
- iii. Action is being taken for the procurement of suitable site at Thrissur and Thiruvananthapuram Corporation for setting up solid waste processing facilities
- iv. Action is also being taken for the allotment of land of KINFRA at Ambalamedu, Ernakulam for the providing of Regional landfill.
- v. 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
- vi. 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.
- vii. 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
- viii. Action has been initiated for providing secured landfill at Attingal.
- ix. Rule 22(5) -Ensure Door to Door collection of segregated waste and its transportation in covered vehicles to processing or disposal facilities
- x. Rule 22(4) – Enforcing waste generators to practice segregation of biodegradable, recyclable, combustible, sanitary waste, domestic hazardous and inert solid waste at source
- xi. 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%).

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>			2 (Kunnamkulam, Punalur)		35	1
50- <75%	1 (Kozhikode)				4	2
25 - <50%		1 (Kozhikode)	1 (Attingal)		3	1
Below 25 %	2 (Thiruvananthapuram, Thrissur)	2 (Thiruvananthapuram, Thrissur)	-	3 (Attingal, Punalur, Kunnamkulam)	0	38

* 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
<u>75 -100%</u>	1 (Thiruvananthapuram)	1 (Thiruvananthapuram)	3 (Attingal, Punalur, Kunnamkulam)	1 (Attingal)	31	1
50- <75%	1 (Kozhikode)				3	
25 - <50%		1 (Kozhikode)			3	2
Below 25 %	1 (Thrissur)	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%	<u>2</u> (Kochi, Kollam)	<u>1</u> (Kochi)	<u>28</u>	<u>4</u>
50- <75%	2 (Kozhikode,Kannur)		16	
25 - <50%		2 (Kozhikode,Kannur)	18	5
Below 25 %	2 (Thiruvananthapuram, Thrissur)	3 (Thiruvananthapuram, Thrissur,Kollam)	25	78

B2. ESTABLISHMENTS

Status of Achievement	No of Corporation		No of Municipality	
	Dry	Wet	Dry	Wet
75 -100%	3 (Thiruvananthapuram,K ozhikode, Kannur)	1 (Thiruvananthapuram)	26	4
50- <75%	1 (Kochi)	3 (Kochi, Kannur, Kozhikode)	10	1
25 - <50%	1 (Kollam)	1 (Kozhikode)	12	3
Below 25 %	1 (Thrissur)	2 (Thrissur,Kollam)	39	79

C Door to Door collection in all Municipalities

C1. 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 premies is yet to be reported by the panchayat and municipalities			4 (Nedumangad,Attingal, Neyyattinkara Varkala)
Kollam	Dry	2 (S.paravur, Punalur, Kottarakara)		1 (Karunagapally)	-
	Wet	1 (Kottarakara)			4 (Karunagapally, Kottarakara,

Status of Achievement		75 -100%	50- <75%	25 - <50%	Below 25 %
					S.paravur, Punalur)
Pathanamthitta	Dry	1 (Thiruvalla)	2 (Pandalam, Pathanamthitta)	-	1 (Adoor)
	Wet	Composting at source level in the premies 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 premies is yet to be reported by the panchayat and municipalities			6 (Changanassery, Ettumanoor, Kottayam, Vaikom, Pala, Erattupetta)
Idukki	Dry	2 (Thodupuzha, Katta pana)			
	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, Kalamas sery, Piravam)	7 (Angamaly, Eloor, Koothatukulam, Kot hamangalam, Muva ttupuzha, Maradu, P erumbavoor)
	Wet	2 (Thrikkakara, Thripunithura)		2 (Aluva, Kalamassery)	9 (Angamaly, Eloor, Kothatukulam, Kothamangalam, M uvattupuzha, N.Paravur, Maradu, Perumbavoor, Piravom)
Thrissur	Dry	3 (Chalaky, Kodungal lur, Kunnamkulam)	-	3 (Chavakkad, Irinja lakuda, Vadakanc hery)	1 (Guruvayur)
	Wet	Composting at source level in the premies is yet to be reported by the panchayat and municipalities			7 (Guruvayur, Chavakkad, Irinjala kuda, Vadakanchery, Chalaky, Kodung

Status of Achievement		75 -100%	50- <75%	25 - <50%	Below 25 %
					allur, Kunnamkulam)
Palakkad	Dry	1 (Shornur, Mannarkkad)	4 (Cheruplassery, Chittur- Thattamangalam,Ott apalam, Palakkad)	-	1 1 (Pattambi)
	Wet	Composting at source level in the premies is yet to be reported by the panchayat and municipalities			7 (Cheruplassery,Chi ttur- Thattamangalam,O ttapalam, Mannarkkad,Patta mbi, 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,Po nnani,Thanoor,Thir oorangadi,Tirur, Valanchery)
Kozhikode	Dry	2 (Mukkam,Vadakara)	1 (Koyilandy)	2 (Faroke, Koduvally)	2 (Payyoli,Ramanat tukara)
	Wet	Composting at source level in the premies is yet to be reported by the panchayat and municipalities		1 (Faroke)	5 (Koduvally,Ramanat tukara 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,Sreekanda puram, 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,K uthuparambu,Iritty, Matannur, Payannur, Sreekandapuram, Thalassery, Thaliparambu)

Status of Achievement		75 -100%	50- <75%	25 - <50%	Below 25 %
Kasargod	Dry	3 (Kanhangad, Kasargod,Nileshwaram)	-	-	-
	Wet	Composting at source level in the premises is yet to be reported by the panchayat and municipalities			3 (Kanhangad,Kasargod,Nileshwaram)

C2. 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)
Pathanamthitta	Dry	1 (Thiruvalla)	-	-	3 (Adoor, Pathanamthitta, Pandalam)
	Wet	-	-	-	4 (Adoor, Pathanamthitta, Pandalam, Thiruvalla)
Alappuzha	Dry	1 (Alappuzha)	-	2 (Chengannur , Kayamkulam)	4 (Cherthala, Kayamkulam,Mavelikkara, 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,Kattapanana)	-	-	-
	Wet	-	-	-	2 (Thodupuzha,Kattapanana)

Status of Achievement		75 -100%	50- <75%	25 - <50%	Below 25 %
Ernakulam	Dry	3 (Eloor, N.Paravur,Thripunit hura)	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,irinjalaku da,kunnamkulam,va dakanchery)	2 (chalakudy, chavakkad)	1 (kodungallur)	-
	Wet	-	-	-	7 (Guruvayur, Chavakkad,irinjalakuda,V adakanchery, Chalakudy,kodungallur, Kunnamkulam)
Palakkad	Dry	3 (Cheruplassery,Man narkkad,Shornur)	1 (Ottapalam)	-	3 (chittur- Thattamangalam, Palakkad,Pattambi)
	Wet	1 (Chittur- Thattamangalam)	-	-	6 (Cheruplassery, Ottapalam, Mannarkkad,Pattambi, Palakkad, Shornur)
Malappuram	Dry	1 (Tirur)	2 (Parappanangadi, Ponnani)	4 (Kottakkal,Malappu ram,Manjeri,Perint halmanna)	5 (Kondotty,Nilambur,Th anoor,Thiroomangadi,V alanchery)
	Wet	-	-	1 (Parappanangadi)	11 (Kondotty Kottakkal,Malappuram,Ma njeri, Nilambur,Perinthalmanna, Ponnani,Thanoor,Thirooma ngadi,Tirur, Valanchery)
Kozhikode	Dry	2 (Mukkam,Vadakara)	1 (Payyoli)	-	4 (Faroke,Koduvally,Koyila ndy, Ramanattukara)
	Wet	-	-	-	7 (Faroke,Koduvally,Koyila ndy, 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)

Status of Achievement		75 -100%	50- <75%	25 - <50%	Below 25 %
	Wet	1 (Mattanur)	-	-	8 (Anthoor, Panoor, Koothuparambu, Iritty, Payannur, Sreekantapuram, Thalassery, Thaliparambu)
Kasargod	Dry	-	1 (Nileshwaram)	1 (Kasargod)	1 (Kanhagad)
	Wet	-	-	-	3 (Kanhagad,Kasargod, Nileshwaram)

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.

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

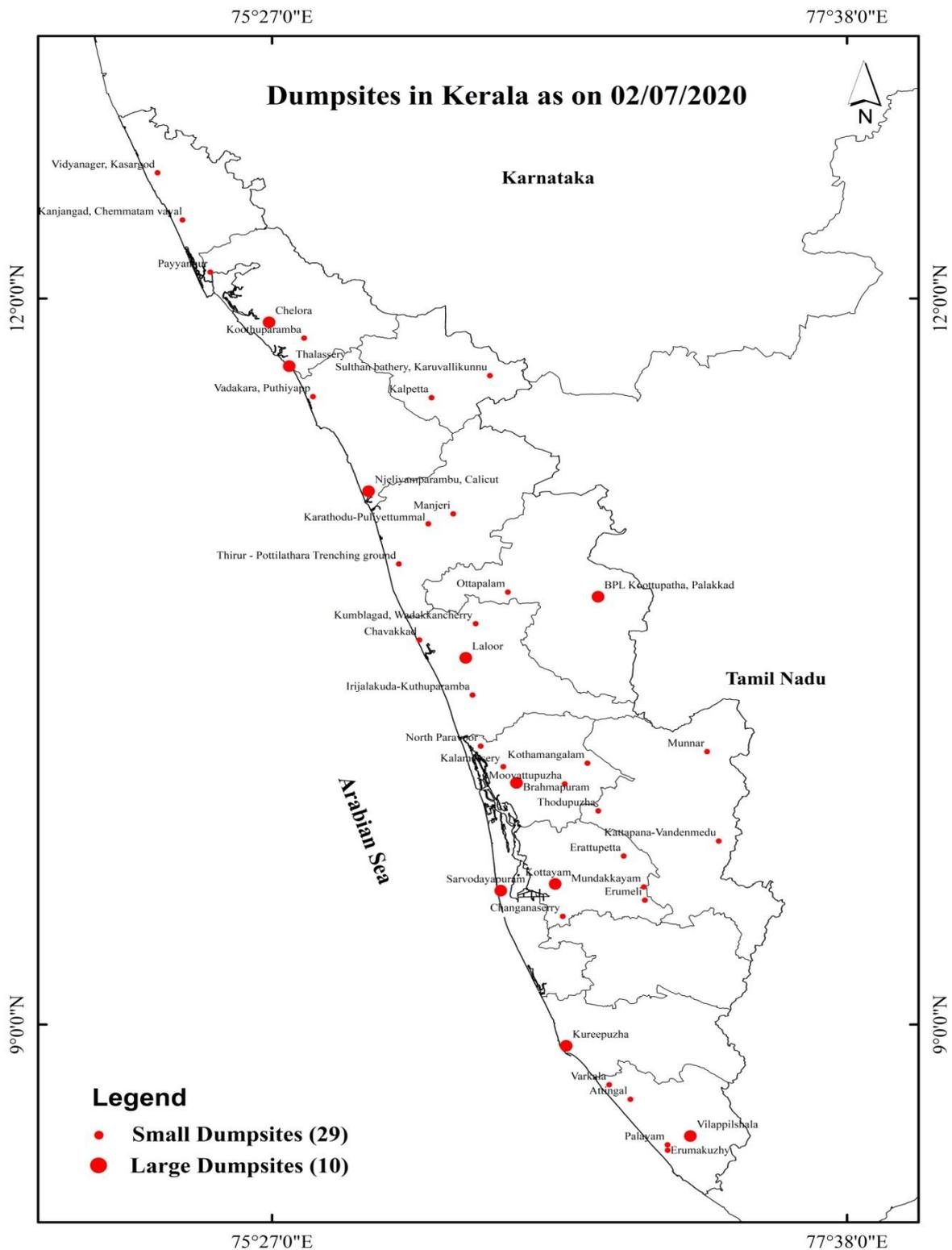
Major Dumpsites locations					
Sl No:	Location	District	Latitude	Longitude	Status
1	Vilappilshala	Thiruvanthapuram	8.5388	77.0388	
2	Kureepuzha	Kollam	8.9116	76.5671	Corporation has selected M/s Zonta Infratech Pvt Ltd as the contractor for the project and the matter is being followed up.
3	KottayamVadavathoor	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	Bidder has been identified and action is being taken to award the work to successful bidder. Drone survey has been done to quantify the dumpsite.
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 rd March, 2020. The clearing work of legacy waste resumed at the dumpsite on 4 th May 2020 and approximately 15000 cum of legacy waste was cleared from

					the project site as on 12 th May 2020. Some disruption due to Covid and Monsoon. Machineries have been installed and resumed clearing of dumpsites.
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	-
Other Dumpsite locations					
Sl No:	Location	District	Latitude	Longitude	Status
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

3.3 Action taken against defaulters

- Direction for levying Environmental compensation of Rs. 14.92 Crore was issued to Kochi

Corporation vide PCB/HO/SEE2/KOCHI CORPN/2019 on 13-1-2021 after serving notices and conducting hearing. Kochi Corporation obtained stay for the direction from the Hon'ble High Court.

- 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.
- 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
- 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.
- Showcause notices were issued to five municipalities, Aluva, Kalamassery, Angamaly, Thrikkakara, and Thrippunnithura municipalities. Kalamassery Municipality obtained stay.
- Show cause notice was issued to two municipalities and 51 panchayats 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.
- 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 implead 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..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 Evt 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. **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/Env. 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 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:

Subject	Unit	
Inpsections condcted	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							
SI . N o.	District Office	Date of Inspection	No. of Shops Inspect ed	No. of Viola tions Obse rved	Fine Imposed	Fine Collected	Remarks

List of fine imposed as on 04/11/2020 by the Check squad on the ban Single use plastic

SI · N o.	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
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	29.02.20,03.03.20,0503.2020.	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

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
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
	Total		465	153	1,305,000	335,000	

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.

- Webinar on Indore solid waste management was done by Dr. Asad Warsi, Advisor, Indore Municipal Corporation on 24th February, 2021.
- Webinar on plastic waste management was done by Mr. Gautam Mehra on 25th February, 2021.
- Webinar on Waste to Energy plants and bioremediation was done by Dr. Asad Warsi, Advisor, Indore Municipal Corporation on 26th February, 2021.
- Webinar on electronic waste management was done by Mr. Gautam Mehra on 26th February, 2021

The participants included officials from Local Self Government department, local bodies, Kerala State Pollution Control Board.

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 Annexure 12.

3.8 Green award for Government offices

A total of 18,454 offices in the State. Green auditing has done for 14,924 offices and 11,150 offices have passed the green auditing successfully in the State. Of which 3,507 offices have obtained A grade. Green audit is done by evaluating the aspects like the existence for the facility for the proper segregation, treatment and disposal of both biodegradable and non-biodegradable wastes, implementation of ban on single use plastic, green protocol implementation, cleanliness of the office, farming etc.

Green Office Declaration

Sl. No	Name of District	Total no. of Govt. offices in the District	Total no. of Govt. offices in the District where Green auditing done	Total no. of Govt. offices in the District who passed the Green auditing successfully	Total no. of Govt. offices in the District who received A grade	Total no. of Govt. offices in the District who received B grade	Total no. of Govt. offices in the District who received C grade	Total no. of Govt. offices in the District which were issued certificate
1	Thiruvananthapuram	2417	1350	1016	337	357	322	0
2	Kollam	1383	1293	894	261	291	342	823
3	Pathanamthitta	639	629	453	115	191	147	0
4	Alappuzha	1294	1080	865	273	272	320	23
5	Kottayam	1286	1092	900	255	347	298	0
6	Idukki	713	719	634	259	203	172	0
7	Ernakulam	1243	1052	1019	413	368	238	146
8	Thrissur	1290	1155	915	322	274	319	293
9	Palakkad	1861	1554	1169	287	471	411	5
10	Malappuram	1362	1209	912	204	337	371	114
11	Kozhikode	1621	933	727	236	269	222	0

12	Wayanad	448	418	316	74	118	124	0
13	Kannur	2318	1892	1242	347	445	450	97
14	Kasargod	579	548	448	124	125	199	0
Total		18454	14924	11510	3507	4068	3935	1501

3.9 Wastequantification 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 has 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/Envr 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 has 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.

3.10. Clean Kerala Company

Clean Kerala Company Limited, a Government undertaking is engaged in the collection of plastic waste and electronic waste from local bodies and institutions. The company is also giving support to the local bodies for the setting up of Material Collection Facilities and Resource Recovery Facilities. The activities carried out by the Clean Kerala Company are given below:

1. Length of Road Constructed using shredded plastic

Length of Road Constructed by using Shredded Plastic in km				
Year	NHAI	PWD	LSGI	Total
2016-2017	0	5.11	46.775	51.885
2017-2018	0	52.4	305.95	358.35
2018-2019	0	136.1	359.65	495.74
2019-2020	5.03	303.9	764.8	1073.75
2020-2021	0	260.8	943.37	1204.14
Total	5.03	758.3	2420.5	3183.86

2. Polymerised road construction projects

No. of Polymerised Road Construction projects executed			
Year	PWD	LSGI	Total
2016-2017	3	224	227
2017-2018	31	561	592
2018-2019	78	942	1020
2019-2020	147	2301	2448
2020-2021	83	1873	1956
Total	342	5901	6243

3. Quantity of shredded plastic produced

Shredded Plastic Production (in MT)						
Year	Quantity Produced	Sale				Amount in lakh
		NHAI	PWD	LSGI	Total	

2016-2017	23.82	0	5.11	18.71	23.82	4.76
2017-2018	174.78	0	52.4	122.38	174.78	34.95
2018-2019	439.18	0	136.09	143.86	279.95	55.99
2019-2020	665.59	5.03	303.92	305.92	614.87	122.97
2020-2021	650	0	260.76	377.348	638.108	150.92
Total	1953.37	5.03	758.28	968.218	1731.53	369.59

4. E-Waste Collection Statistics

Ewaste Collection Statistics (in Kg)					
Year	Quantity of E waste	Total Quantity of Hazardous waste	IT @ School Collection	TOTAL E-waste Collected (a+c)	Total Quantity of Materials Collected (a+b+c)
	a	b	c	d	e
2014-2015	93663	6937		93663	100600
2015-2016	107632.5	10233		107632.5	117865.5
2016-2017	95316.03	7666		95316.03	102982.03
2017-2018	89700.75	6840	646137	735838	742677.9
2018-2019	161685.4	74	92540	254225.4	254299.4
2019-2020	168625.1		4185.55	172810.65	172810.65
2020-2021	102769.87	10910.25		102769.87	113680.12
Total	819392.65	42660.25	742862.55	1562255.45	1604915.6

5. Clean Kerala Company having agreement with LSGIs for collection of non biodegradables

Agreement with LSGIs for collection of Non Biodegradables						
SI No	District	No. of Panchayats	No. of Block Panchayats	No. of Municipalities	No. of Corporations	Total
1	Thiruvananthapuram	17	0	0	0	17
2	Kollam	7	1	1	0	9
3	Pathanamthitta	34	0	2	0	36
4	Alappuzha	47	0	1	0	48
5	Kottayam	10	0	1	0	11
6	Idukki	2	0	0	0	2
7	Ernakulam	7	0	0	0	7
8	Thrissur	22	0	1	0	23
9	Palakkad	58	0	4	0	62
10	Malappuram	17	0	0	0	17
11	Kozhikkode	27	0	3	0	30

12	Wayanad	23	0	1	0	24
13	Kannur	41	0	1	0	42
14	Kasaragod	21	0	1	0	22
Total		333	1	16	0	350

6. RRFs - O&M by Clean Kerala Company Limited

RRF O&M by CKCL		
SI No	LSGI	District
1	Athiyannoor BP	Thiruvananthapuram
2	ThiruvananthapuramCorp	Thiruvananthapuram
3	Nedumangad BP	Thiruvananthapuram
4	Manickal BP	Thiruvananthapuram
5	Kottarakkara BP	Kollam
6	Chengannur BP	Alappuzha
7	Haripad BP	Alappuzha
8	Aranmula BP	Pathanamthitta
9	Pambady BP	Kottayam
10	Kanjirapally BP	Kottayam
11	Vazhoor BP	Kottayam
12	Lalam BP	Kottayam
13	Kaduthuruthy BP	Kottayam
14	Thodupuzha BP	Idukki
15	Muvattupuzha Municipality	Ernakulam
16	Pampakuda BP	Ernakulam
17	Eloor Municipality	Ernakulam
18	N. Paravur Municipality	Ernakulam
19	Puzhakkal BP	Thrissur
20	Palakkad BP	Palakkad
21	Kunnummal BP	Kozhikode
22	Panoor BP	Kannur
23	Kalliyassery BP	Kannur
24	Irikkur BP	Kannur
25	Taliparamba BP	Kannur
26	Iritty BP	Kannur

7. State wide shredding units

Status of Shredding units Statewide		
Total	Working	Not Working
165	128	37

SI No	Name	District	Status
1	Trivandrum Corporation	Trivandrum	Working
2	NedumangadMunicipality	Trivandrum	Working
3	Varkala Municipality	Trivandrum	Working
4	Attingal Municipality	Trivandrum	Not Working
5	Peringadavila Block	Trivandrum	Not Working
6	Ottasekharamanglam GP	Trivandrum	Not Working
7	Kilimanoor Block	Trivandrum	Not Working
8	Vamanapuram BP	Trivandrum	Not Working
9	Kanjiramkulam GP	Trivandrum	Working
10	Poovachal Grama	Trivandrum	Working
11	Nedumangad B P	Trivandrum	Working
12	Athiyanoor B P	Trivandrum	Working
13	Kottarakkara municipality	Kollam	Not Working
14	Kollam Corporation	Kollam	Working
15	Karunagapally Municipality	Kollam	Working
16	Paravoor Municipality	Kollam	Working
17	Punalur Municipality	Kollam	Working
18	Kottarakkara Block	Kollam	Not Working
19	Ithikkara Block	Kollam	Working
20	Anchal Block	Kollam	Working
21	Perinad GP	Kollam	Working
22	Pareyam GP	Kollam	Working
23	Chavara GP	Kollam	Working
24	Anchal GP	Kollam	Working
25	Kadakkal GP	Kollam	Working
26	Alappuzha municipality	Alappuzha	Working

CHAPTER 4

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: 1,31,400 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 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)	<p>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.</p> <p style="text-align: center;">Material Collection Facility-156; Resource Recovery Facility-59 Ward level mini material collection facilities-371 Material collection facility in all ULBs</p> <p style="text-align: center;">Resource recovery facilities in 59 ULBs</p> <p style="text-align: center;">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)</p>
3	Percentage of Grama Panchayat which have set-up of plastic waste management system as per Rule 7?	<p>Haritha Karma Sena for door to door collection of non biodegradable waste started functioning in 720 out of 941 Grama panchayaths</p> <p style="text-align: center;">879 Haritha Karma Sena units formed.</p> <p style="text-align: center;">Material Collection Facility-744 Ward level mini material collection facilities-371</p>

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>Reverse Vending machine 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 Rs. 5/- per bottle and to take back through their own distribution channel 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 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	Reverse Vending machine functioning at Reliance outlet, Edappazhinji. Direction given to other supermarkets and malls to provide such reverse vending machine.	2.	Beverage bottles	Direction to pay Rs. 5/- per bottle and to take back through their own distribution channel 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 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.
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		6.	<p>Mattress</p> <p>As per the meeting conducted with Indian Sleep Producer Federation (ISPF), it has been decided</p> <ul style="list-style-type: none"> • to have a collection point by dealers/retailers in each district irrespective of brand of mattresses • All manufacturers shall arrange for take back of old mattresses irrespective of brand, through retail outlets that sell their branded mattresses • Brand owners and manufacturers are urged to introduce buy back prices for old mattresses against sale of new mattresses
		7.	<p>Unused medicines in houses</p> <p>Initiated by Chemists and Druggist Association and Drugs Controller (PROUD programme) in Thiruvananthapuram Corporation.</p> <p>Around 200 bins were provided in front of medical shops in Thiruvananthapuram Corporation.</p> <p>The first load of collected waste of 5T has been flagged off from Thiruvananthapuram to biomedical waste treatment facility on 1-10-2019.</p> <p>This was done with the funding of Chemists and Druggists Association.</p> <p>Action is being taken to have this collection programme in other parts of the State.</p> <p>Action is taken to get fund from manufacturers, producers and brand owners as per EPR.</p>

		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	<p>Material Collection Facility-1464; Resource Recovery Facility-182; Recyclable plastics (hard and soft plastics) are taken by rag pickers for recycling in the State and outside the State</p> <p>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.</p>		
b	Road Construction	<p>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.</p> <p>As of now, 1525T of plastic waste has been used in recycling road construction.</p>		
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	<p>Clean Kerala Company is in the process of establishing Integrated Waste Management System at Kuttippuram, Malappuram</p> <p>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.</p>		
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/ENVVT dated 19/2/2019; G.O.(Ms) No. 2/2020 /ENVVT dated 27-1-2020 and vide GO no G.O.(Ms) No.4/2020 Envvt 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.															
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"> • Kerala State Pollution Control Board issued registration to 1,185 plastic units. • 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. 															
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"> • Registered plastic manufacturing units-0 • Registered plastic producers - 82 • Registered plastic recycling units - 99 															
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.	<p style="text-align: center;">Yes</p> <p style="text-align: center;">38 meetings were conducted by SLAC and review</p>
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]	<p style="text-align: center;">PVC flex has been banned in the State. Action has been initiated for its implementation.</p>

CHAPTER5

STATUS ON MANAGEMENT OF SEWAGE, SULLAGE ANDEFFLUENT(OA593/2017)&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 hosptials, flats, and 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), 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 augmmentation 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

Urban Local bodies (6 Corporations and 87 Municipalities)	
Population(as per 2011 Census)	79,36,885
Population(Projected for 2020)	82,94,583
Water Consumption(MLD)*	1323
Generation of sewage and sullage (MLD)**	1058
Generation of sewage (MLD)***	317
Generation of sullage (MLD)	741
Panchayaths (941 panchyaths)	
Population(as per 2011 Census)	25,840,501
Population(Projected for 2020)	27,005,078
Water Consumption (MLD)*	3646
Generation of sewage and sullage (MLD)**	2917
Generation of sewage (MLD)***	875
Generation of sullage (MLD)	2042
Total –Urban local bodies and Panchayaths	
Population(as per 2011 Census)	3,37,77,386
Population(Projected for 2020)	3,52,99,661
Water consumption (MLD)*	4968
Generation of sewage and sullage (MLD)**	3975
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	

No	District	CSTP	Installed capacity MLD	Utilization MLD	Process	Remarks
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, Kadavanthra, Kochi	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	
11.	Ernakulam	Kalamassery market	0.01	0.01		Started functioning
12.	Thrissur	Guruvayoor, TSR	3	Not started functioning	ASP	Not started functioning
13.	Thrissur	FSTP- Mattampuram	0.01	Completed not started functioning	Biological	Not started functioning
14.	Thrissur	Revamping of 35 KLD STP at Kuriyanchira Slaughter House Corporation , Thrissur	0.035	Operational	ABR+MBBR	
15.	Malappuram	Malappuram Municipal Bus stand	0.03	0.03	Biological	Operational
16.	Malappuram	Malappuram Fish Market at Tirur	0.045	0.045	Biological	Operational
17.	Kozhikode	Common Sewage Treatment Plant at Narayana nagaram, near stadium, Vatakara, Opp. New bus stand	0.1	0.1		MBBR
18.	Wayanad	Sewage Treatment Plant at Taluk Hospital , Sulthan Bathery , Wayanad	0.14	0.05	MBBR	Working in half capacity (initiatives of inauguration going on)
19.	Kannur	Thaliparambu	0.5	0.5	ASP	Operational

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 Progress on the CSTPSTP/FSTP projects in the local bodies

Status	No.	Places
Operation	5	1. Kalamassery M (STP-10KLD) 2. Kalamassery market (ETP) 3. TVM Corpn-Kumarichanda 4. Tirur market (45KLD) 5. Tirur Private bust stand (50KLD)
To be operated	1	6. Malappuram Municipality (STP-30KLD)
UC	2	7. Kozhikode Medical College 2MLD and 1MLD 8. Thiruvananthapuram MC-5 MLD
Construction to be started	9	9. Guruvayoor Municipality (FSTP-100KLD, Chakkulamkandam) 10. Kannur Municipality (FSTP-100KLD-Chelora) 11. Kochi Corpn-Division 1-4 6.5 MLD, Kochi Smart city mission 12. Elamkulam, 5MLD 13. Kureepuzha-12MLD 14. Palakkad-Yakkara (FSTP-100KLD) 15. Palakkad-District Hospital-270KLD 16. Thrissur-Ramavarmapuram (FSTP-100KLD) 17. Thrissur-General Hospital (360KLD)
Council approval	4	18. Kochi Corporation-Division 15-1.4MLD 19. Kochi Corporation-Division 16-1.1MLD 20. Kochi Corporation-Division 17-1.4MLD 21. Palakkad Municipality 800 KLD

Status	No.	Places
TS	8	22. Alappuzha M-Mobile septage units 2Nos and 10 KLD 23. Alappuzha M-General Hospital-240KLD 24. Alappuzha M-Shatabdi mandiram-15KLD 25. Alappuzha M-Thottamudi colony-50KLD 26. Kannur M-old-1MLD 27. Kollam Corpn-Andamukam-FSTP-100KLD 28. Kunnankulam-co-treatment-1MLD 29. Ottappalam-1.5MLD
DPR	7	29. Mayyand panchaayth-590KLD 30. Payyannur-Perumbaby-10KLD 31. Cherthala-FSTP-250KLD 32. Varkala-FSTP-140KLD 33. Wadakkancherry-1MLD 34. Wadakkancherry-Ottupara market-18KLD 35. Wadakkancherry-Athani-13.9KLD
Tendering	4	36. Aluva Municipality-AdvaitaAsramam 37. Kozhikode Corporation-Avikkal thodu-7MLD 38. Kozhikode Corporation-Kothi-6 MLD 39. Vanchikulam-2.5MLD
Planning	11	40. Aluva Market 41. Chengannur Municipality 42. Kochi Corporation-Edappally-2MLD 43. Kochi Corporation-Elamkulam-10MLD 44. Kochi Corporation-Perandur-4MLD 45. Kochi Corporation-Puthukalvattom-5MLD 46. Pattambi Municipality 47. Thiruvalla Municipality 48. Thrikkakara Municipality 49. Thrippunithura Municipality 50. Pathanamthitta Municipality
Total	50	

Table 5.5 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 style="text-align: center;">Thiruvananthapuram Corporation [Projected population*: 10,01,175]</p> <p style="text-align: center;">(Coastal city and city on the bank of polluted stretch of Karamana river under Priority I)</p> <p style="text-align: center;">Sewage and sullage 144.2 MLD (43.25+101)</p>	<p style="text-align: center;">Common STP</p> <ul style="list-style-type: none"> • Common treatment plant of 107MLD plant at Muttathara (Capacity utilization- 80MLD) and complying to standards and complying to standards • Facility for treating septage in Muttathara plant <p style="text-align: center;">Individual STP for the large and medium scale units in the entire Thiruvananthapuram district</p> <ul style="list-style-type: none"> • 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 & 29 Panchayaths) • 10KLD STP at Kumarichandamarket 	<p style="text-align: center;">Under construction</p> <ul style="list-style-type: none"> • Construction of 45% of 5 MLD plant at Medical College (Biological-Amruth project) has been completed • Renovation/expansion of sewerage system <p style="text-align: center;">Planning</p> <p>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 style="text-align: center;">Varkala (Coastal town) [Projected population: 41,853] 4.5 MLD (1.4+3.2)</p>	<p style="text-align: center;">Individual STP provided for hotels, hospitals</p> <p style="text-align: center;">For households, septic tank, soakpit, leach pit</p>	<p style="text-align: center;">DPR preparation</p> <ul style="list-style-type: none"> • 140KLD KIIFB
	<p style="text-align: center;">Attingal -4.3MLD (1.3+3) [Projected population: 39,345]</p>	Do	
	<p style="text-align: center;">Nedumangad -6.8MLD (2+6.8) [Projected population: 62,872]</p>	Do	
	<p style="text-align: center;">Neyyattinkara 8 MLD (2.4+5.6) [Projected population: 74,043]</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
Kollam	<p>Kollam Corporation(Coastal city) 59.7MLD(18+41.8) [Projected population: 4,14,892]</p>	<p><u>Individual STP for the large and medium scale units in the entire Kollam district</u></p> <ul style="list-style-type: none"> • 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& Panchayaths-13 <p>For households, septic tank, soakpit, leach pit rovided</p>	<p><u>Work awarded</u></p> <ul style="list-style-type: none"> • STP-12MLD-Amruth-biological <p><u>Cancelled</u></p> <ul style="list-style-type: none"> • FSTP-100KLD-Andamukom, Amruth-EC Council held on 12-2-2021 decided to cancel the work and to use the amount for laying sewer pipe line works • FSTP-Vasoorichira-Council decided to cancel the work due to public protest. • FSTP-Karikkuzhi Ela-Council held on 11/02/2021 decided to cancel the work & use the amount for laying sewer pipeline works. Resolution is awaited..
	<p>Paravur 5MLD-(1.5+3.5) [Projected population: 45,710]</p>	<p>For households, septic tank, soakpit, leach pit provided</p>	
	<p>Karunagapally 5.2MLD (1.6+3.6) [Projected population: 47,379]</p>	<p>Do</p>	
	<p>Punalur5.3MLD-(1.6+3.7) [Projected population: 48,807]</p>	<p>Do</p>	
	<p>Kottarakkara3.5MLD(1.1+2.5) [Projected population: 32,397]</p>	<p>Do</p>	
	<p>Mayyanad gramapanchayath</p>	<p>Do</p>	<p><u>DPR preparation</u></p> <ul style="list-style-type: none"> • Co-treatment-590KLD-biological-KIIFB

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	<p style="text-align: center;">Alappuzha (Coastal city) 26.3 MLD (7.9+18.4) [Projected population: 1,82,013]</p>	<p>For households, septic tank, soakpit, leach pit provided</p> <p><u>Individual STP for the large and medium scale units in the entire Alappuzha district</u></p> <ul style="list-style-type: none"> 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 	<p><u>Work awarded but agreement not executed</u></p> <ul style="list-style-type: none"> <u>General Hospital-STP-240KLD-EC-Amruth</u> <p><u>TS to be obtained</u></p> <ul style="list-style-type: none"> <u>Shatabdi mandiram-STP-15KLD- Biological-Amruth</u> <u>Thottumadi colony-STP-50KLD-Biological-Amruth</u> <u>Mobile STP-2Nos-10KLD-Amruth-EC-Revised DPR</u> was submitted by the Consultant on 24/01/21 & the same is under scrutiny. The report submitted by the Technical Resource Bank team has been forwarded to the Consultant on 24/01/21.
	<p style="text-align: center;">Cherthala(Coastal city) 5.2 MLD(1.6+3.6) [Projected population: 47,892]</p>	<p>21 STPs* with a total installed capacity of 0.83 MLD</p>	<p><u>DPR modification</u></p> <ul style="list-style-type: none"> Cherthala-FSTP-250KLD- Anaerobic baffle reactor, MBBR-KIIFB. Project has been forwarded to RKI for funding
	<p style="text-align: center;">Kayamkulam(Coastal city) 7.8 MLD (2.3+5.4) [Projected population:71,727]</p>	<p>For households, septic tank, soakpit, leach pit provided</p>	
	<p>Mavelikkara -3.3 MLD(1+2.3) [Projected population: 29,722]</p>	<p>10 STPs* with a total installed capacity of 0.19 MLD</p>	<p><u>Planning</u></p> <ul style="list-style-type: none"> <u>Mavelikkara Taluk hospital-STP-300KLD</u>
	<p style="text-align: center;">Chengannur (Town near to the polluted stretchKalloppara-Thondra in Manimala river-Priority IV) 2.7 MLD(0.8+1.9) [Projected population: 24,513]</p>	<p>13 STPs*with a total installed capacity of 0.53 MLD</p>	<p><u>Planning</u></p> <ul style="list-style-type: none"> 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
	Haripad - 3.5 MLD(1.1+2.5) [Projected population: 32,373]	For households, septic tank, soakpit, leach pit, provided	
Pathanamthitta	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]	Individual STP provided for hotels, hospitals For households, septic tank, soakpit, leach pit	
	Pathanamthitta-4.3 MLD(1.3+3) [Projected population: 39,715]	Individual STP provided for hotels, hospitals For households, septic tank, soakpit, leach pit <u>Individual STP for the large and medium scale units in the entire Pathanamthitta district</u> • 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	

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
	<p>Tiruvalla, (Town near to the polluted stretch Mannar to Thakazhy-Priority IV) 6 MLD (1.8+4.2)</p> <p>[Projected population: 55,266]</p>	<p><u>Individual STP for the large and medium scale units in the entire Pathanamthitta district</u></p> <ul style="list-style-type: none"> • 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 	<p>Planning</p> <ul style="list-style-type: none"> • To set up FSTP
	<p>Pamba township (Sabarimala season from November 15th to January 20th every year)</p>	<p><u>Common STP of 3.5 MLD</u> capacity maintained by Travancore Devaswom Board. It consists of coagulation and settling. The plant is seasonally operated during festival season.</p>	
	<p>Sannidhanam township (Sabarimala season from November 15th to January 20th every year)</p>	<p><u>Common STP of 5 MLD</u> capacity at Sannidhanan. 3.5MLD is only utilized. It consists of UASB and SBR.</p>	
Kottayam	<p>Changanacherry-19.3 MLD(5.8+13.5)</p> <p>[Projected population: 1,33,738]</p>	<p>Individual STP provided for hotels, hospitals</p> <p>For households, septic tank, soakpit, leach pit</p>	
	<p>Ettumanoor-3MLD (0.9+2.1) [Projected population: 27,614]</p>	Do	
	<p>Erattupetta-3.4 MLD(1+2.4) [Projected population:31,012]</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
	Kottayam-20.6 MLD(6.2+14.4) [Projected population: 1,42,978]	<p><u>Individual STP for the large and medium & red and orange category units in the entire Kottayam district</u></p> <ul style="list-style-type: none"> • 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; Panchayaths-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	
	Other	<p><u>Common STP</u></p> <ul style="list-style-type: none"> • Common STP for houseboat (0.09MLD) at Kumarakom maintained by Travancore Devaswom Board • Erumeli (100KLD) stopped working since the festival season ended <ul style="list-style-type: none"> • Erumeli(75KLD) stopped working since the festival season ended 	

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
Idukki	Thodupuzha- 5.9 MLD (1.8+4.1) [Projected population:54,391]	<p>Individual STP provided for hotels, hospitals</p> <p>for households, septic tank, soakpit, leach pit</p> <p><u>Individual STP for the large and medium units in the entire Idukki district</u></p> <p>There 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	
	Adimali Grama panchayath	Sewage treatment plant-comfort station-0.01 MLD Electrocoagulation	

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 style="text-align: center;">Kochi Corporation [Projected population: 7,07,511] Coastal city 101.9 MLD (30.6+71.3)</p>	<p><u>Common STP</u></p> <ul style="list-style-type: none"> • Elamkulam-4.5 MLD capacity-Utilization capacity-3.5 MLD maintained by KWA-It consists of ASP • Marine Drive- 450KLD STP-Maintained by Greater Cochin Development Authority, Kadavanthra (ASP) <ul style="list-style-type: none"> • FSTP-Brahmapuram-0.1 MLD using anaerobic digestion and MBBR • FSTP-Willingdon Island-0.1MLD using anaerobic digestion and MBBR <p><u>Individual STP for the large and medium scale units in the entire Ernakulam district</u> 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"> • Division 1-4-6.5MLD-Kochi Smart City • Elamkulam-5MLD-Biological-Amruth-KWA SHPSC approval • <u>Division 15-STP-1.4MLD-Amruth-biological</u>-Bid received (36.64% above) in the 6th tender to be finalized. The 26thSHPSC held on 17/12/2020 decided to approve the tender excess subject to condition that half of the cost due to tender excess shall be borne bythe Corporation. • <u>Division 16-STP-1.1MLD-Amruth – Biological</u> Bid received (25.95% above) in the 4th tender to be finalized. The 26thSHPSC held on 17/12/2020 decided to approve the tender excess subject to condition that half of the cost due to tender excess shall be borne by the Corporation. • <u>Division 17-STP-1.4 MLD-Amruth</u> Bid received (25.92% above) in the 4th tender to be finalized. The 26thSHPSC held on 17/12/2020 decided to approve the tender excess subject to condition that half of the cost due to tender excess shall be borne by the Corporation. <p><u>To be tendered</u></p> <ul style="list-style-type: none"> • Edappally-2MLD-Integrated Water Transport System-KMR-SBR • Elamkulam-10MLD-Integrated Water Transport System-KMR-SBR • Perandur-4MLD-Integrated Water Transport System-KMR-SBR • Puthukalavattom-5MLD-Integrated Water Transport System-KMR-SBR <ul style="list-style-type: none"> • Vennala-10MLD-Integrated Water Transport System

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
	Aluva (Town on the bank of polluted stretch of ofPeriyar on the bank of polluted stretch Aluva-Eloor to Kalamassery) 2.8 MLD (0.8+2) [Projected population: 25,197]	Individual STP provided for hotels, hospitals For households, septic tank, soakpit, leach pit	<u>Tendering</u> • <u>STP near AdvaitaAshramam</u> <u>Project preparation</u> • <u>STP for Aluva market</u>
	Angamaly, 3.8 MLD (1.2+2.6) [Projected population: 34,973]	Do	
	Eloor-Town on the bank of polluted stretch of ofPeriyar on the bank of polluted stretch Aluva-Eloor to Kalamassery- 3.4 MLD (1.1+2.4) [Projected population:	Do	
	Kalamassery-(Town on the bank of polluted stretch of Kadambrayar-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: 70,000]	<ul style="list-style-type: none"> • 10KLD STP of Municipality • 10 KLD STP at Kalamassery market 	
	Koothattukulam, 2.2 MLD(0.7+1.5) [Projected population: 19,825]	Individual STP provided for hotels, hospitals For households, septic tank, soakpit, leach pit	
	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	

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
	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	
Ernakulam	Thripunithura(Town on the bank of polluted stretch of Chithrapuzha - Irumpanam to Karingachira –Priority V) 10.5MLD (3.2+7.3) [Projected population: 80,804]	Do	<u>Planning STP-locating land</u>
	Thrikkakara-(Town on the bank of polluted stretch of Kadambayar- 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]	<u>Individual STP for the large and medium scale units in the entire Thrissur district</u> 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; Panchayath-14 Revamping of 35 KLD STP at Kuriyanchira Slaughter House Corporation , Thrissur	<u>To be tendered</u> • Vanchikulam-2.5MLD-STP Work awarded and agreement not executed • Ramavarmapuram-100KLD-FSTP-Amruth-EC-Application under processing • General Hospital-360KLD-Amruth-EC
	Chavakkad-4.3 MLD(1.3+3) [Projected population: 80,804]	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
	Chalakkudy-17.3MLD (5.2+12.1) [Projected population: 1,20,079]	Do	
	Guruvayoor-2.3 MLD(0.7+1.7) [Projected population: 21,434]	Common STP of 3 MLD at Guruvayoor in Thrissur district	<u>Work started but stopped</u> <ul style="list-style-type: none"> 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> <ul style="list-style-type: none"> 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	TS to be obtained <ul style="list-style-type: none"> Co-treatment-1 MLD-KIIFB-Biological-DPR approved-TS to be obtained
	Wadakkancheri Polluted stretch of Kecherrier-Puliyannor to Kechery-Priority IV) 1.8MLD (0.54+1.3) [Projected population: 16,380]	Do	DPR under preparation <ul style="list-style-type: none"> Co-treatment-1 MLD-KIIFB-Biological Ottuppara market-18KLD-KIIFB-biological Athani market-13.9KLD-KIIFB-biological
	Mattampuram	FSTP of 0.1MLD at Mattampuram -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	TS to be obtained Co-treatment -1.5 MLD-KIIFB-Biological- -DPR approved-TS to be obtained

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
	<p>Palakkad-19.7 MLD (5.9+13.8) [Projected population: 1,36,857]</p>	<p><u>Individual STP for the large and medium scale units in the entire Palakkad district</u> 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</p>	<p><u>Work started</u></p> <ul style="list-style-type: none"> • District Hospital-270KLD-Amruth-EC <p><u>Work awarded but agreement not executed</u></p> <ul style="list-style-type: none"> • Yakkara-FSTP-100KLD-Amruth-EC • Sundaram Colony-800KLD-Amruth-Biological
	<p>Pattambi -Polluted stretch of Bharathpuzha- Priority IV)-3.3 MLD(1+2.3) [Projected population: 29,922]</p>	Do	Project planning
	<p>Shornur- Polluted stretch of Bharathpuzha-Priority IV)-- 5.0 MLD(1.5+3.5) [Projected population:45,495]</p>	Do	
	<p>Cherpulassery-3.5(1.1+2.5) [Projected population: 32,115]</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
Malappuram	<p style="text-align: center;">Malappuram (Town near the polluted stretch of Kadalundi river (Along Hajirappally) Hajiyarpalli) Priority V 15.30 MLD (4.6+10.7) [Projected population: 1,05,955]</p>	<ul style="list-style-type: none"> • 1.8 MLD (of high rise buildings and STPs of Tirur and Malappuram municipalities) • STP at Malappuram Municipal bus stand-30KLD-MBBR • STP at Tirur Fish market of 45 KLD-Biological <p><u>Individual STP for the large and medium scale units in the entire Malappuram district</u> 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; Panchayaths-14</p>	
	<p style="text-align: center;">Manjeri-14.60 MLD(4.4+10.3) [Projected population: 1,01,480]</p>	<p>Individual STP provided for hotels, hospitals</p> <p>For households, septic tank, soakpit, leach pit</p>	
	<p style="text-align: center;">Ponnani-10.2 MLD(3.1+7.2) [Projected population: 94,569]</p>	Do	
	<p style="text-align: center;">Tirur (Coastal town & Town in the polluted stretch of Tirur river)- 6.4 MLD (1.9+4.4) [Projected population: 58,584]</p>	Tirur market-45KLD-STP	<p style="text-align: center;"><u>Under construction</u></p> <ul style="list-style-type: none"> • Private bus stand-STP-50KLD-Trial run fixed on 20-10-20

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]	Do	
	Nilambur-5.3 MLD (1.6+3.7) [Projected population: 48,456]	Do	
	Parappanangadi-8.1 MLD (2.4+8.1) [Projected population:]	Do	
	Perinthalmanna-5.1 MLD(1.5+3.5) [Projected population:]	Do	
	Tanur-6.4 MLD(6.4+1.9) [Projected population: 58,584]	Do	
	Tirurangadi-6.4 MLD(1.9+4.5) [Projected population: 59,184]	Do	
	Valancherry-4.1MLD (1.3+2.8) [Projected population: 37,408]	Do	
Kozhikode	<p style="text-align: center;"><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><u>Individual STP for the large and medium scale units in the entire Kozhikode district</u> 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><u>Work started</u></p> <ul style="list-style-type: none"> MC College-STP-2 MLD with septage treatment and 1 MLD plant <p><u>Tendered and not awarded</u></p> <ul style="list-style-type: none"> Kothi-Zone A-Package B-Amruth-biological-6MLD <p><u>Under tendering</u></p> <ul style="list-style-type: none"> Avikkalthodu-Zone A-Amruth-Biological-7MLD
	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	
	Koyilandy-8.1 MLD (2.5+5.7) [Projected population: 21,785]	Do	
	Payyoli-2.4 MLD(0.7+1.7) [Projected population: 21,785]	Do	
	Ramanattukara-3.5MLD(1.1+2.4) [Projected population: 21,785]	Do	
	Vatakara-8.5 MLD(2.6+6) [Projected population: 78,688]	Do	<u>TS to be obtained</u> • Vatakara- STP-0.5 MLD- KIIIFB-Biological & 20KLD septage treatment
Wayanad	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 <u>Individual STP for the large and medium scale units in the entire Wayanad district</u> 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]	Do	
	Sulthanbathery-3.1MLD (1.0+2.2) [Projected population: 28,711]	Sewage Treatment Plant at Taluk Hospital , Sulthan Bathery , Wayanad Working in half capacity (initiatives of inauguration going on 0.14MLD 0.05MLD MBBR	

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
Kannur	Kannur-67 MLD(53.6+13.1) [Projected population:3,72,044]	Individual STP provided for hotels, hospitals For households, septic tank, soakpit, leach pit Individual STP for the large and medium category units in the entire Kannur district 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.	Work started <ul style="list-style-type: none"> Chelora-FSTP-100KLD-Amruth-EC-site clearance is in progress Tendering <ul style="list-style-type: none"> Kannur municipality-Old-1MLD-Amruth=biological – STP-decentralised
	Anthoor-4.1 (1.3+2.9) [Projected population: 27,000]	Do	
	Iritty-4.6 (1.4+3.2) [Projected population: 12,100]	Do	
	Koothuparamba-3.4 (1+2.4) [Projected population: 30,863]	Do	
	Mattannur-5.4 (1.6+3.8) [Projected population: 12,000]	Do	
	Panoor-2.0 (0.6+1.4) [Projected population: 18,224]	Do	
	Payyannur Polluted stretch of Kavvayi river and Perumba river 8.2(2.5+5.7) [Projected population:75,361]	Individual STP provided for hotels, hospitals For households, septic tank, soakpit, leach pit	DPR modification <ul style="list-style-type: none"> Perumbaby Payyannur fish market-10KLD-LB
	Thaliparamba Polluted stretch of Kuppam river; 8.2; (2.5+5.7) [Projected population: 75,731]	Common STP at Thaliparamba -0.5MLD-Thaliparamba Municipality	
	Thalassery-10.5(3.2+7.3) [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
Kasaragod	Kanhangad-8.3 MLD(2.5+5.8) [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]	<u>Individual STP for the large and medium scale units in the entire Kasaragod district</u> 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]	Do	
	Uppla	135 KLD Capacity decentralized sullage Treatment plant at Uppala Town Mangalpadi, Kasaragod	

Table 5.6 Details of ETPs / STPs under construction in the State

No.	Location	Capacity of the plant in MLD	Physical Progress in %	Incremental progress	Completion Timeline
1.	STP at Chitumala Old Age Home. Chitumala BP, Kollam	0.015	90 % Completed	Civil structure and mechanical plastering work going on	15/02/2021

2.	STP at CHC Cherpu BP, Thrissur	0.01MLD	20 % Completed	Construction of civil tanks going on	31/06/2021
3.	STP at Pambad Housing Colony Malappuram Municipality, Malappuram	0.110	95 % Completed	Civil structure completed. Mechanical and Electrification going on	31/03/2021
4.	ETP in Fish Marketing Ponnundam GP, Malappuram	0.01	95 % Completed	Units are installed trial run conducted Waste water is allowed to flow through units . Finishing works are progressing. Treated Waste water expected to be tested within February 2021	31/03/2021

Table5.7 ETP/STP under tendering

No.	Location	Capacity of the plant in MLD	Completion timeline
1	Construction of 6 KLD ETP for Kumali Slaughter House Kumali GP, Idukki	0.006	31/03/2021
2.	<i>STP at Private Bus station, Kothaikunnu, Thodupuzha</i>	0.03	31/3/2021
3.	Construction of 45 KLD waste water treatment plant at Kalpeatta Government Ayurveda Hospital DP, Wayanad	0.045	30/03/2021

7	135 KLD Capacity decentralized sullage Treatment plant at Uppala Town Mangalpadi, Kasaragod	0.135	31/03/2021
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Table 5.8 Details of proposed ETPs/ STPs in the State

No.	Location	Capacity of the STP proposed in MLD	Status of Project (at DPR Stage/ Under Tendering/ Work to be Awarded)	Incremental progress	Likely Date of Completion
1	Taluk Hospital Thiruvalla , Thiruvalla Municipality, Pathanamthitta	0.09	At DPR Stage	<i>Under Technical Scrutiny</i>	30/06/2021
2	Taluk Hospital Pambady, Pambady Block panchayath , Kottayam	0.085	At DPR Stage	<i>Under Technical Scrutiny</i>	30/06/2021
3	Taluk Hospital Adimaly , Adimaly Block Panchayath, Idukki	0.060	At DPR Stage	<i>Under Technical Scrutiny</i>	30/06/2021
4	General Hospital, Irinjalakuda Municipality , Thrissur (PRS)	0.150	At DPR Stage	<i>DPR under preparatio n</i>	30/06/2021
5	District Hospital Perunthalmanna , District Panchayath , Malappuram		At DPR Stage	<i>Under Technical Scrutiny</i>	30/06/2021
6	Taluk Head Quarters Hospital Vithiri,Kalpetta BP, Wayanad	0.065	DPR returned for modification		
7	Taluk Hospital , Neelaswaram, Kasaragod	0.040	At DPR Stage	<i>DPR returned for modificati on</i>	30/06/2021
8	Women and Children Hospital Ponnani Municipality, Malappuram	0.06	DPR stage	<i>DPR returned for modification</i>	30/6/2021
9	CHC Kilimanoor, Kilimanoor Block Panchayath ,	0.096	DPR Stage	<i>DPR returned for modificati on</i>	30/06/2021

	Trivandrum				
10	CHC Sooranadu, Sasthancotta Block Panchath, Kollam			DPR	30/06/2021
11	CHC Konni, Konni Block Panchayath , Pathanamthitta				
12	CHC Kadayiruppu Vadavukode, Ernakulam			DPR stage	Under Technical Scrutiny
13	CHC, Mullassery, THRISSUR			DPR stage	DPR returned for modification
14	CHC Alathoor, Alathoor Block Panchath , Palakkad	0.090	At	DPR stage	DPR returned for modification
15	CHC, Vettom, Tirur	0.01		DPR stage	DPR returned for modification
16	CHC, Payyannur	0.01		DPR stage	DPR returned for modification
17	CHC Mangalpadi, Manjeswar Block Panchayath, Kasragod	0.014		At DPR stage	DPR returned for modification
18	Nedumangad Municipality	0.01		AT DPR stage	DPR returned for modification
19	Karavaram Grama Panchayath	0.01		At DPR stage	DPR returned for mdofiication
20	Tsunami resettlement facility, Karikuzh, Mayyanad	0.09		At DPR stage	
21	Anchal Block, Kollam	0.05		At DPR stage	DPR returned for modification
22	Private Bus stand,Thodupuzha Thodupuzha Municipality , Idukki	0.03		At DPR stage	TS issued

23	Kuravilangad Fish Market, Kuravilangad Grama Panchayath , Kottayam	0.011	At DPR stage		30/6/2021
24	EMS Memorial Municipal Town Hall, Koyilandy Municipality, Kozhikode	0.01	At DPR stage	DPR returned for modification	30/6/2021
25	Convention Centre, Pinarayi	0.02	At DPR stage	DPR returned for modification	30/6/2021
26	Shopping complex plus Multiplex theatre, Kallumutti, Iritty	0.02	At DPR stage	DPR returned for modification	30/6/2021

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 5.9. The major consented units discharging in to the sea is given in Table 5.10.

Table 5.9 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
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 Chemicals 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

Sl No	Name of unit	Type of unit	Source of water consumption	Consumption of water in MLD	Effluent quantity in MLD	Mode of disposal
6	Nitta Gelatin India Limited, KINFRA park, KakkannadThrikkakara 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	CSON 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
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 LimitedmPudussrypanchayath	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	

SI No	Name of unit	Type of unit	Source of water consumption	Consumption of water in MLD	Effluent quantity in MLD	Mode of disposal
18	Thiruvananthapuram Dairy, Ambalathara, Poonthura PO, 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, Peroorkkada Thiruvananthapuram Corporation	Surgical and medical products i 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 Valapattnamgramapanchayath	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)
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
				155	62.5432	

Table 5.10 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, Vengal, 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 perchlorates and peroxide.	Red	Large	KeezhmadPanchayath	Ammonium perchlorate unite	Kerala Water Authority, 52, APEP 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

No .	Name of unit	Type of unit	Red/ Orange/ Green	Larg e/ Medi um/S mall	Localbo dy	Products with capacity	Sourc e of water cons umpti on	Consum ption of water in MLD	Effluen t quantit y in MLD	ETP units	Mode of dispos al
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		

Table 5.11 Details on sewage management submitted on the Format send vide CPCB letter no Date

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"> <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	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 1 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,	Consent is being issued for the application submitted by Railways			
	Infrastructure Projects,	Board also issued Standard office procedures to be followed for Indian Railways			
	Agriculture,				
	Bus Depots and PWD.				
7.	No. of Water Aquatic Sources (Lakes, Pond etc.) being developed through treated waste water	Being collected			

Table 5.12 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	Operational	107 MLD	80 MLD	ASP	Application to be resubmitted	complied				

		Authority STP at Kumarichanda							
			Operational	10 KLD	10 KLD	Bio membrane bioreactor Technolo gy	Application to be submitted		
2	Pathanamth itta	Sewage Treatment Plan at Sannidhanam (5MLD) Maintained by Travancore Devaswom Board	Seasonal ly Operated during festival season	5 MLD	3.5 MLD	UASB and SBR	Application to be submitted	complied	
		Sewage Treatmen t Plan at Pamba(3 .5 MLD) Maintain ed by Travanc ore Devasw om Board	Seasonally Operated during festival season	3.5 MLD	3.5 MLD	Coagulati on & 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	Operational				Application to be submitted	-	

		by Greater Cochin Development Authority, Kadavanthra, Kochi (0.45 MLD)		0.45ML D	0.45 MLD	ASP		
		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		MLD	functioning	coagulation	be submitted	

5.2. 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

SI.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
		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	Provide details on the pollution load due to these drains
		www.ksrrc.in
	c	Has in-situ treatment of wastewater being carried out in all such drains for reduction of pollution load?
	d	If not, then please indicate the number of drains in which in-situ treatment of waste water has commenced

	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	

5.3 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 January, 2021 was submitted.

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 7th 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), Adwaithasramam & 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:

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.

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

The report 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 up to the previous month could not be updated. The same will updated at the earliest.

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

5.5.1. 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)	FACTLtd., Ernakulum	1.25	Kuzhikandom cleaning	Kuzhikandom
c)	FACTLtd., 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 Rutilites 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 fertilizers Ernakulum	0.025	Board's account	Forfeiting of bank guarantee
m)	Sree Sakthi Limited, Ernakulum	0.24	Removal of plastic waste in their premises	Forfeiting of bank guarantee
n)	Vijay Construction, Ernakulam	0.02	Board's account	Forfeiting of bank guarantee

5.2 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. Kerala State Pollution Control Board Recruitment Rules for State and Subordinate Service, 2021 was notified by the State Government vide notification no. PCB/E1/1448/16 dated 11-1-2021. Vacancies have also been uploaded in the site of Public Service Commission.
- The vacancies in the entry cadre have now 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 was also 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 6

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.
- 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 prder 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 6-12-209 of the Hon'ble NGT in OA 673/2018, Board all district offices were instructed to conduct a survey will 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 downs stream locations of major discharges to the river.
- Polluting sources including drains contributing to river pollution were already identified and according to that action plans were prepared and submitted to CPCB. STPs were proposed in the action plans wherever necessary. Measures for management of waste were also incorporated in the action plans. In situ primary treatment were proposed for the river stretches Bharathapuzha and Pamba in the action plans. As part of the Cochin Metro Rail Limited's Integrated water transported system project 5 STPs are proposed at Elamkulam, Vennala, Edapally, Puthukalavattom and Perandur for treating the water coming through drains and discharging treated water to water bodies.
- 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 officers also with such analyzers
- Vide G.O.(Rt)No.93/2020/WRD dated 28.01.2020 Government of Kerala nominated Deputy Secretary (Projects),Water Resource Department as the nodal authority, Government of Kerala for monitoring the compliance of the directions in the order on fortnightly basis and to maintain record of progress and to act as an accountable person to the Chief Secretary for the purpose.
- Vide G.O.(Rt)No.223/2020/WRD dated 12.03.2020 Government of Kerala appointed a monitoring committee comprising of Additional Chief Secretary, Water Resources Department as Chairperson and Principal Secretary, LSGD, Principal Secretary, Environment, Secretary, Water Resources Department and Staff officer to Chief Secretary as nodal officers & members.

- The Chief Engineer, Irrigation and Administration, Thiruvananthapuram issued order vide order No. PL2/15862/2019 dated 5-1-2021 for the collaboration between Engineering Colleges and Irrigation department for the preparation of Detailed Project Report between Engineering Colleges and Irrigation department for DPR preparation of 21 river stretches identified by Central Pollution Control Board (copy enclosed). A series of sessions of Techno-academic collaboration meetings were held at Government level, wherein almost 33 Engineering colleges had participated and expressed their willingness to join hands with the Water Resources Department for the DPR preparation and preparation of action plan for the abatement of pollution and rejuvenation of the 21 rivers. The Engineering colleges have been entrusted with the responsibility of the site visit, data collection, compilation of data(primary and secondary), testing of water quality, content and composition of pollution and for the documentation of the results and preparation of actionable DPRs. Accordingly action has been done by the Engineering Colleges and Irrigation department. The DPRs are already under final stage.

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

SL. No.	District	River	Polluted River stretches	Priority	Quality of Water	% of compliance	STP/Treatment	Time of achievement
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/ Hajiyarpalli	V	"	"	<ul style="list-style-type: none"> 1.8 MLD (of high rise buildings and STPs of Tirur and Malappuram municipalities) STP at Malappuram Municipal bus stand-30KLD-MBBR STP at Tirur Fish market of 45 KLD-Biological 	"
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"> Co-treatment-1 MLD-KIIFB-Biological Ottuppara market-18KLD-KIIFB-biological Athani market-13.9KLD-KIIFB-biological 	31.03.2021
12		Karuvannur	Along Karuvannur	V	BOD <3 FC<50	"	FSTP & STP proposed	"

SL. No.	District	River	Polluted River stretches	Priority	Quality of Water	% of compliance	STP/Treatment	Time of achievement
					0			
13		Puzhakkal	Olarikkara to Puzhackal	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"> • 10KLD STP of Municipality • 10 KLD STP at Kalamassery market 	"
16		Periyar	Alwaye-Eloor to Kalamassery	V	"	"	<p>Common STP</p> <ul style="list-style-type: none"> • Elamkulam-4.5 MLD capacity-Utilization capacity-3.5 MLD maintained by KWA-It consists of ASP • Marine Drive-450KLD STP-Maintained by Greater Cochin Development Authority, Kadavanthra (ASP) • FSTP-Brahmapuram-0.1 MLD using anaerobic digestion and MBBR • FSTP-Willingdon Island-0.1MLD using anaerobic digestion and MBBR <p><u>Individual STP for the large and medium scale units in the entire Ernakulam district</u></p>	"

SL. No.	District	River	Polluted River stretches	Priority	Quality of Water	% of compliance	STP/Treatment	Time of achievement
							<p>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"> • Division 1-4-6.5MLD-Kochi Smart City • Elamkulam-5MLD-Biological-Amruth-KWA <p><u>SHPSC approval</u></p> <ul style="list-style-type: none"> • Division 15-STP-1.4MLD-Amruth-biological • Division 16-STP-1.1MLD-Amruth – Biological • Division 17-STP-1.4 MLD-Amruth <p><u>To be tendered</u></p> <ul style="list-style-type: none"> • Edappally-2MLD-Integrated Water Transport System-KMR-SBR • Elamkulam-10MLD-Integrated Water Transport System-KMR-SBR • Perandur-4MLD-Integrated Water Transport System-KMR-SBR • Puthukalavattom -5MLD-Integrated Water Transport System-KMR-SBR 	

SL. No.	District	River	Polluted River stretches	Priority	Quality of Water	% of compliance	STP/Treatment	Time of achievement
							<ul style="list-style-type: none"> Vennala-10MLD-Integrated Water Transport System 	
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; Mukkom M.-1; Panchayaths-28</p> <p>Work started</p> <ul style="list-style-type: none"> MC College-STP-2 MLD with septage treatment and 1 MLD plant <p>Tendered and not awarded</p> <ul style="list-style-type: none"> Kothi-Zone A-Package B-Amruth-biological-6MLD <p>Under tendering</p> <ul style="list-style-type: none"> Avikkalthodu -Zone A- Amruth-Biological-7MLD 	18.02.2021
18		Kuttiyadi	Along Kuttiyady	V	"	"	"	"
19	Pathanamtht	Pamba	Mannar to		BOD	70%	Minimal Treatment &	-

SL. No.	District	River	Polluted River stretches	Priority	Quality of Water	% of compliance	STP/Treatment	Time of achievement
	Itta		Thakazhy	IV	<3 FC>50 0		Disinfection proposed	
20	Alappuzha	Manimala	Kalloopara to Thondra	IV	BOD <3 FC>50 0	50%	STP proposed	18.02.2021
21	Trivandrum	Karamana	Malekkdu to Thiruvallam	I	BOD <3 FC>50 0	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 7

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. 1st phase report submitted. Action initiated for 2nd 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 waterbodies 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 8

COASTAL DISCHARGES (829/2019)

8.1 Orders dated 17-9-2019 and 22-4-2020inO.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 withi 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 9

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 BMWM Rules, 2016?	<ul style="list-style-type: none"> • There are 17,354 health care facilities (HCF) which include 817 AYUSH and 533 veterinary hospital • Inventory was submitted
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 BMWM Rules, 2016?	<ul style="list-style-type: none"> • Almost all private bedded and non-bedded hospitals and clinics were brought under the purview of the Board • The departments concerned were repeatedly instructed to ensure all Veterinary hospitals and AYUSH to apply and obtain consent/authorization • Show cause notices were also issued to the departments concerned in this regard.
4	How many applications are still under process with State Boards for grant of authorization?	<ul style="list-style-type: none"> • 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. • No other applications are pending.
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, Lakshawep, 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"> • 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. • 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. • To ensure proper segregation, collection, transportation and on site storage facility of biomedical wastes. • For establishing sewage treatment facility in hospitals and to follow MBR technology • 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 • For giving proper IEC activities for reduction of waste

		<ul style="list-style-type: none"> 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 Monitoring by District Level Monitoring committee chaired by District Collectors <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"> 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. newly affiliated HCF; newly appointed staff if any on need basis; Whenever notices improper segregation/handling of BMW, in any HCF;

		<ul style="list-style-type: none"> • CBMWTF conducts routine training also with not less than twice a year.
12	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>Online emission monitoring system installed in CBMTWT and is connected to Board's server. Real time data</p> <p>The parameters namely CO, CO₂ and primary and secondary temperatures are continuously monitored and the other parameters namely PM, HCl, NOx and VOC are monitored by CBMTW on monthly basis.</p>
13	How OCEMS data received by state Boards is being validated?	The values of CO, CO ₂ , and primary and secondary temperature are connected to Board's server and exceedances, if any, are noticed
14	What is the status of compliance to BMWM Rules, 2016 by CBWFFs? What action has been taken against defaulting facilities?	<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	What is the frequency of monitoring of Healthcare Facilities for verification of compliance to BMWM Rules?	<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>



☎ General: 0471- 2312910, 2318153, 2318154, 2318155 Chairman: 2318150 Member Secretary: 2318151
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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>Completed : Yes Inventory completed on: Nov, 2020 As per inventory Total No. of HCFs:17,354 No. of bedded HCFs: } HCFs-16,004 No. of non-bedded HCFs: } AYUSH-817 Veterinary-533</p>
2.	Authorization to all Healthcare Facilities including non-bedded HCFs	<p>Total No. of HCFs: Bedded HCFs; Non-bedded HCFs:</p> <p>Authorised bedded HCFs: Authorised non-bedded HCFs:</p> <p>Reason for unauthorized HCFs:</p> <p>Process of bringing all HCFs under the consent/purview will Be completed by 31/12/2020</p>

3.	Facilitate setting-up adequate number of Common Biomedical Waste Treatment Facilities(CBWTFs) to cover entire State or all HCFs	<p>Compliance status of each CBWTF:</p> <ol style="list-style-type: none"> 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. 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. <p>Entire waste in the State can be treated through the above facilities.</p> <p>Action taken by SPCB/PCC for non-compliance:</p>
4.	Constitution of State Advisory Monitoring Committee and District Level Monitoring Committee	<p>Has been constituted: Yes</p> <p>If yes frequency of meeting:</p> <ul style="list-style-type: none"> • The State Advisory Monitoring Committee has been constituted vide GO(Rt) No. 1354/2019/ H&FWD dated 05/06/2019. The first meeting of the advisory committee was conducted on 03/09/2019. • The second meeting is proposed in the last week of November.
5.	Implementation status of Barcode system	<p>Status of implementation of bar code by HCFs: Implemented</p> <p>Status of implementation of bar code by CBWTFs: Implemented</p> <p>User credentials for CPCB from each CBWTF: Yes</p>
6.	Monitoring of Healthcare Facilities other than hospitals/clinics such as Veterinary Hospitals, Animal Houses, AYUSH Hospitals etc.	<p>Number of HCFs other than hospitals/clinics such as Veterinary Hospitals, Animal Houses, AYUSH Hospitals etc. monitored till date:</p> <p>Due to the COVID pandemic situation the monitoring could not be conducted as per usual schedule.</p>
7.	Monitoring infrastructure of SPCBs/PCCs	<p>Whether SPCB/PCC has laboratory to do incinerators stack monitoring, efficiency test for autoclave, wastewater analysis ETP effluent: Yes</p>
8.	Training and capacity Building of officials of SPCBs/PCCs and	<p>No. of training programs conducted:</p>

	Healthcare Facilities	<p>Online trainings are being conducted at District level by the Board Officers.</p> <p>For state board officials: 1 For HCFs: 1 For other stakeholders, if any: 1</p> <p>webinar conducted in co-ordination with National Safety Council</p>
9.	Installation of OCEMS by CBMWTs as a self-monitoring tool and transmission of data with servers of SPCBs/CPCB	<p>Number of CBWTFs installed OCEMS: 1</p> <p>Status of connectivity of OCEMS with SPCB/CPCB: Presently the emission parameters like CO, CO2, temperatures of primary & secondary chambers are uploaded in real time to the servers of Kerala PCB & CPCB. Concentrations of SO2, NO, NO2, N2O, NH3, O2 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>Daily monitoring of OCEMS data is carried out or not: Yes</p> <p>Action taken for discrepancy: Rectification is done in co-ordination with the facility as soon as it is noticed.</p>
10.	Submission of Annual Report	<p>Annual Report for the year 2019</p> <p>Submitted before due date: } Submitted after due date: } Yes (28/09/2020)</p>
11.	Compliance by Common Facilities (emission/discharge standards, barcoding, proper operation etc.)	<p>Frequency of conducting monitoring of CBWTF: Status of compliance of CBWTFs: No. of CBWTF complied: 1 No. of CBWTF not complied: 0 Action taken for non-compliance: 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>Frequency of conducting monitoring of HCFs: Status of compliance of HCFs: No. of HCFs complied: No. of HCFs not complied: 17 HCFs Action taken for non-compliance: Rectified non-compliances</p>

Yours faithfully



MEMBER SECRETARY

CHAPTER 10

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 Enviro 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

Regarding OA 804/17 (Implementation of Hazardous and Other Waste Management Rules, 2016)

Chief Secretary convened meeting of 16/10/2020. Additional Chief Secretary Labour Department had convened 1st meeting on the same for Chief Secretary on 09/10/2020.

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.	Pertaining to Interim Report of Monitoring Committee	
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: 1551 2) How many hazardous or other waste generating units [of (i) above] have submitted annual returns by 30th June of preceding year: 607 3) How many units [of (i) above] have submitted annual returns after 30th June of Preceding year: 313 4) How many units [of (i) above] have not submitted annual return for preceding year: 626 5) In how many units [of (iii) & (iv) above] action has been taken by SPCB? 471 <i>The Board ensures timely submission of annual returns by all occupiers and in case of non- compliances action is being</i>

		<p><i>taken against violators. During the said period due to COVID - 19 pandemic some units could not submit annual returns due to closure of industries.</i></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, : 393</p> <p><i>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.</i></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). 237</p> <p>Of which, how many pertains to interstate movement and within the state?</p> <p>During the said period random verification was slowed due to COVID- 19 pandemic, associated restrictions and closure of industries.</p> <p>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.</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><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></p> <p><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></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><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></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><i>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</i></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><i>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.</i></p> <p><i>Discussion with them in also planned in a few days time. ToR will be developed accordingly.</i></p>
B. Pertaining to Final Report of Monitoring Committee		
	<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"> 1. Ports* and Containers by individual ICDs/CFCs (per day/month) 2. Quantity of waste generated (MARPOL annexes) from per ship 3. Category –wise details on quantity of HW generated and handled** by each of the Ports*/ICDs/CFCs during

	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"> Whether the HW generated/handled by Ports*/ICDs/CFCs have been reported by the SPCB/PCC in the annual inventory. No. of Ports*/ICDs/CFCs found violating provisions (manifest system, labelling/packaging/ records maintain, etc) of HOWM Rules, 2016. Action taken by SPCB/PCC against such violators. <ul style="list-style-type: none"> *Ports includes all the major/minor and river ports. **Includes waste sent to recycler/utilizer/co- processor/disposal facility alongwith name of such facilities. <p><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. 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. 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></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>ates/UTs which also have Minor ports/River ports/ICDs/CFCs</p> <p><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></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"> 1. No. of ports having Waste reception facility. 2. No. of Waste reception facilities authorized under HOWM Rules, 2016 alongwith details of the categories of hazardous & other waste authorized for generation and management: 3. Action taken by SPCB/PCC to ensure availability of waste reception facility as per Ministry of Shipping Notification. 4. Category –wise details on quantity of HW generated and handled** by each of the Waste reception facility during 2019-20. 5. No. of Waste reception facilities found violating provisions (manifest system, labelling/packaging/ records maintain, etc) of HOWM Rules, 2016. <p>Action taken by SPCB/PCC against such violators.</p> <ul style="list-style-type: none"> • <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> • <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> • <i>Cochin port, Ernakulam is in the process of filing application to the Board. Beypore Port has Waste reception facility.</i> • <i>Kollam Port and Azheekkal Port, Kannur don't have Waste reception facility.</i> • <i>Authorization shall be granted by the SPCB after due scientific evaluation. Waste reception facilities in the ports shall then be authentically documented.</i>
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:</p> <p>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: 1551</p> <p>ii. Number of units installed display board: 932</p> <p>iii. Of (ii) above, how many has been verified by the Board: 358</p> <p>During the said period random verification was slowed due to COVID- 19 pandemic, associated restrictions and closure of industries.</p> <p>iv. Number of hazardous waste generating units not installed/updated display board: 434</p> <p>Action taken by the board, in case of non-compliances observed:</p> <p>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.</p>
7.	<p>Action point 27: Institutional Reforms:</p> <p>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</p> <p>ii. Steps taken to ensure adequate manpower is made available in SPCB/PCC and timeline for the same.</p> <p>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.</p> <p>No. of training programs organized by SPCB/PCC during FY- 2019-20.</p> <p>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 sentitise 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.</p> <p>Moreover trainings were imparted to the local bodies at district levels and state level many times to sentitise them about the compliance of the Rules. During the said period i.e. April, 2020-September, 2020 no more meeting/ training could</p>

		<p>be conducted due to COVID-19 pandemic, associated restrictions and closure of industries.</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"> a. Training on “Analysis of pesticides and other organic chemicals in Environmental samples” at CSIR-IITR, Lucknow- one officer attended the same-in 2019 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 c. Training on “Identification and assessment of contaminated d. sites” at Gurugram, Haryana- two officers attended the same- in 2019 e. Training on “Accident Spill- Emergency Response and Environmental impact assessment- Future perspective” at CSIR-NEERI, Nagpur- one officer attended the same- in 2019 f. Training on “Hazardous Waste Management” by CSE, Delhi- two officers attended the same - in 2019 g. Webinar on “Hazardous Waste Management- Challenges and Remedies” by Punjab PCB- one officer attended the same- in 2020 <p>During the said period i.e. April, 2020- September, 2020 no more training could be attended due to COVID-19 pandemic, associated restrictions.</p> <p>*Please provide topic of the training programmes organised by Board and no. of officials attended the same</p>
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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"> 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. ii. Steps taken to provide adequate laboratory infrastructure for the remaining parameters in the SPCB/PCC and timeline for the same. iii. In case of non- availability of the infrastructure current practice of the SPCB/PCC for analysis of HW parameters. <p><i>The Board's Central Lab is being continuously upgraded for analysis of all HW parameters.</i></p> <p><i>In case of non- availability of the infrastructure for analysis of some HW parameters it is done through external laboratories.</i></p>
	<p>Action point 27: Institutional Reforms:</p> <p>R&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&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><i>The Board proposes to set up an R & D wing. The Board promotes the cleaner technology through awards also to various establishments as part of Environment Day celebrations.</i></p>

CHAPTER 11

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	<p>The DLMC constituted as per OA 606/2018, has been entrusted to overlook the matter on E-waste Rule</p> <p>An informal working scrap unit identified at Vengola, Ernakulam and closure order was issued.</p>	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"> Action is being done to have dismantling unit at Kuttipuram, Malappuram by Clean Kerala Company, Government undertaking. They initiated EOI 	

							<p>for dismantler unit installers. Preliminary land development work started.</p> <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 setting 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 12

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.

Form-IV

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

CHAPTER 13

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	Number of manufacturers	Number of Manufacturers Submitted Returns	Quantity of batteries sold		Quantity of used batteries send to AuthorizedRecyclers		Number of Collection Centres	Number of dealers	Number of registered dealers	Remarks
			Nos	Weight (kg)	No s	Weight (kg)				
1	17	12	8969 0	2878700	9848	506522	5 4	159	121	

B. ASSEMBLERS

SL. No .	Number of Assemblers	Number of Assemblers Submitted Returns	Quantity of batteries assembled and sold		Quantity of used batteries send to AuthorizedRecyclers		Number of Collection Centres	Number of dealers	Number of registered dealers	Remarks
			Nos.	Weight(kg)	No s.	Weight (kg)				
1	4	3	782	13186	45 4	4126	5	5	5	

C. IMPORTERS

SL. No.	Number of Importers	Number of Importers Submitted Returns	Quantity of batteries 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	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	Other	
1	2	25.475	2	14.15 T	0	0	0	9.5 T		1602.35 T	

CHAPTER 14

COMPLIANCE STATUS ON NOISE POLLUTION

Sl. No	Content	Current Status	Desirable	Gap	Time Line
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) (Details to be provided)	Yes		<ul style="list-style-type: none"> • Pollution Control Board for noise due to various activities such as operation of machinery • District Magistrate and Police Department are the authorities for ensuring ambient noise standards with respect to public redressal system. • Support to the Police Authority is being given by the Board on request basis for the measurement of the sound level 	-
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"> • 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 • Discussion done with ADGP regarding training and training will be conducted on getting the training schedule and reply awaited. 	-	Training will be given by the Central Pollution Control Baord in December, 2020. Action is being done	2020
13.	Has protocol been developed for taking appropriate action against the defaulters?	-	Develop ment of protocol by Police departm ent	Development of protocol by Police department	2020

CHAPTER 15

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 February, 2021

Subject	District	No. of Meetings
SLMC Meeting- Total meetings		60
DLMC Meeting	Thiruvananthapuram	7
	Kollam	4
	Pathanamthitta	4
	Alappuzha	9
	Kottayam	2
	Idukki	3
	Ernakulam	2

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

	district on environmental laws
Kozhikode	<ol style="list-style-type: none"> 1) DLMC link created in the website of the district administration 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. 3) Subcommittee constituted for social auditing and monitoring and action has been initiated. 4) Initiation of action against defaulters 5) Squad is formed for inspecting tourism area and to impose spot fine to defaulters and action is initiated. 6) Action is being initiated to form a complaint cell 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 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 9) Action taken to speed up setting up of common BMW facility at Kinalur in Kozhikode 10) Action is initiated by the Kozhikode for conducting meeting with brand owners of plastic, sanitary napkin 11) Training programmes conducted at block level, ward level and at Municipality level
Malappuram	<ol style="list-style-type: none"> 1) Expanded DLMC with full chorom of members as per direction of SLMC Chairman. 2) Continuing with social auditing (Grievance management) by all concerned departments. 3) 100% compliance of three Model Panchayats in the District in respect of environmental norms implemented successfully. 4) All municipalities have implemented Door to Door collection of segregated waste. 5) All municipalities have implemented Door to Door collection of segregated waste. 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. 7) All urban local bodies shall prepare action plans and implement bio mining of legacy waste. Action pending with Malappuram Municipality. 8) Collected compiled and submitted District Environmental Plan and got it approved by District Collector for submission.

	<p>9) Lot numbers of cleaning programs were carried out in all the local bodies through employment schemes and Governments Special cleaning drive.</p> <p>10) Action on complaints regarding illegal disposal of wastes on a District level is implemented and the activity is continuing.</p> <p>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.</p> <p>12) Monetary fines for illegal dumping was collected by local bodies.</p> <p>13) District Collector directed to levy fine from all local bodies which 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</p> <p>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</p>
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	<p>directions on implementing the Environmental Acts & 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 & 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 & Restaurants Association to implement a prizing system and award based on best practices on waste management. Complied with the directions and the activities are continuing</p>
Wayanad	<ol style="list-style-type: none"> 1) Action taken for introducing alternate materials for plastic products 2) Steps taken for clean drive 3) Steps taken for finding out suitable materials for processing of waste 4) Regular plastic ban inspections were conducted and fine were imposed on offenders by PCB and action taken for levying of fine. 5) Training to the Local bodies on environmental laws conducted. 6) Conducted workshops for home stay, hotel and restaurants, wood industries,workshops etc.
Palakkad	<ol style="list-style-type: none"> 1) DLMC link created in the website of district administration 2) Action plan prepared, actions are progressing, monthly progress is reported. 3) Plastic shredded wastes to be used in Bituminous plant and for Road Tarring was implemented. 4) Several cleaning programs were carried out in all local bodies through employment schemes & special cleaning drive 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 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 7) Fines levied and reported by local bodies. 8) 100% compliance in the model panchayaths has been implemented. 9) All seven municipalities implemented door to door collection 10) Palakkad Municipality has allocated Rs.50.00 Lakhs in 2021-2022 for Biomining of legacy waste

	11) Training programmes on environmental laws were conducted for the local bodies
Thrissur Ernakulam Idukki Pathanamthitta	1) Inspections carried out for the compliance of Government order on use of single use plastic and fine was imposed on violators. 2) Awareness programmes on environmental rules done for local bodies
Alappuzha	3) For the DLMC meetings, Secretary and nodal officer from the local body are to be attended. Nodal officer is to arrange awareness programmes 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 5) Action is initiated for setting up FSTP, slaughter house in Alappuzha Municipality and action also initiated for identifying land for FSTP at Chunkam. 6) For Cherthala Municipality, DPR for FSTP submitted for funding and the matter is being taken up. 7) Action initiated for collection, segregation and treatment of waste from public in Cherthala Municipality. 8) For Chengannur municipality, Haritha Karma Sena is functioning in 16 wards 9) Action is being taken to provide FSTP. 10) For Harippad municipality, Harith karmana Sena is functioning in all wards 11) Action is being taken to provide FSTP and also for the collection of segregated waste. 12) Action is being taken to provide FSTP in Mavelikkara and Kayamkulam Municipalities. 13) Inspections carried out for the compliance of Government order on use of single use plastic and fine was imposed on violators. 14) Awareness programmes on environmental rules done for local bodies
Kollam	1) Inspections carried out for the compliance of Government order on use of single use plastic and fine was imposed on violators. 2) Awareness programmes on environmental rules done for local bodies
Thiruvananthapuram	1) Action is being initiated for preventing the discharge of waste

puram	<p>water and solid waste into water bodies</p> <ol style="list-style-type: none"> 2) Action is being initiated to provide waste water treatment facilities at Poojappura Central Jail and SAP camp, Peroorkada 3) Action taken to regulate pollution due to solid waste in Medical College, Thiruvananthapuram 4) Action being taken on waste disposal by Thiruvananthapuram Corporation canteen in the University Men's Hostel premises Palayam 5) Directions issued to the Executive Engineer LSGD and Chief Executive Engineer, PWD to use 20% shredded plastic 6) Inspections carried out for the compliance of Government order on use of single use plastic and fine was imposed on violators. 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 8) Awareness programmes on environmental rules done for local bodies
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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 16

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 (CAAQM stations) across the State. In CAAQMS, parameters namely SO₂, NH₃, CO, O₃, PM₁₀ and PM_{2.5} 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 SO₂ and NO_x were found to be within 80 microgram/m³. RSPM and SPM values are within the limit of 100 micro gram/m³ and 60 micro gram/m³ in all manual monitoring stations. In the case of CAAQMS stations, all parameters are within the prescribed standards except in the case of Vyttila wherein NO_x, CO and PM values showed exceedance for a few days.

16.1.1 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 (Ernakulam- Central City)
5. Ernakulam- Vyttila Bus Stand (Ernakulam- 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

16.1.2 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.

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
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

Sl. No.	Location	District	
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.	Kanjangad	Kasargod	SAMP
5.	Thodupuzha	Idukki	SAMP
6.	BEML , Kanjikode	Palakkad	SAMP
7.	Moovattupuzha (Data from October Onwards)	Ernakulam	SAMP

16.1.3 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 under the head 'News'.

The data of CAAQM stations are available in website, 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 under the head, 'News'.

16.1.4 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/PublicPlaces (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_Cherthala	Cherthala	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)	Eloor	Fertilizer	Active	No Exceedence	Yokogawa

	Udyogamandal Complex-Fertiliser Plants					
18	The Fertilisers And Chemicals Travancore Ltd (FACT) Cochin Divison	Ambalamedu	Fertilizer	Active	No Exceedence	Yokogawa
19	Kairali Steels And Alloys Private Limited	Kanjikode	Iron And Steel	Active	No Exceedence	STEAM
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

In active						
SL NO.	Site Name	City	Industry	Site Status	Exceedence	Vendor
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 Inactive	No 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.**

S I. N o.	Popu lato n as per cens us 2011	Na me of the Sta te	Nu mb er of Tow ns/ citi es	Nam e of Tow ns/ citi es	Manual ambient air quality monitoring stations		Continuous ambient air quality monitoring stations		Remarks
					E xi st in g S ta ti o n s	Re qui red Sta tio ns	Ex isti n g Sta ti o n s	R e q ui r ed S t a ti o n s	
1.	1,00,000 - <5,00,00 0	Kera la	5	Kozhikode	Commercial /Residential- 2	1- Background	1- Commercial	1- Residential	CAAQMS station is ready for inauguratio n at Thrissur. Setting up of CAAQMS stations at Palakkad and Alappuzha is included in Annual Plan 2021- 22. Proposal submitted to CPCB vide letter no. PCB/HO/S EE-1/EC- PROJECT S/2019 dated 24.9.2020 for sanctioning fund for four numbers of CAAQMS from EC fund.
				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 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
2.	5,00,000 - <10,00,000	Kerala	2						Supply Order
				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 17

INDUSTRIALLY POLLUTED CLUSTERS (OA 1038/18)

17.1 Industrially Polluted clusters (OA 1038 of2018)

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 theCountry.

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 asCPA.

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 andForest.

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 18

MODEL PLANTS IN KERALA

18.1 Model Solid Waste Management

18.1.1 Door to 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



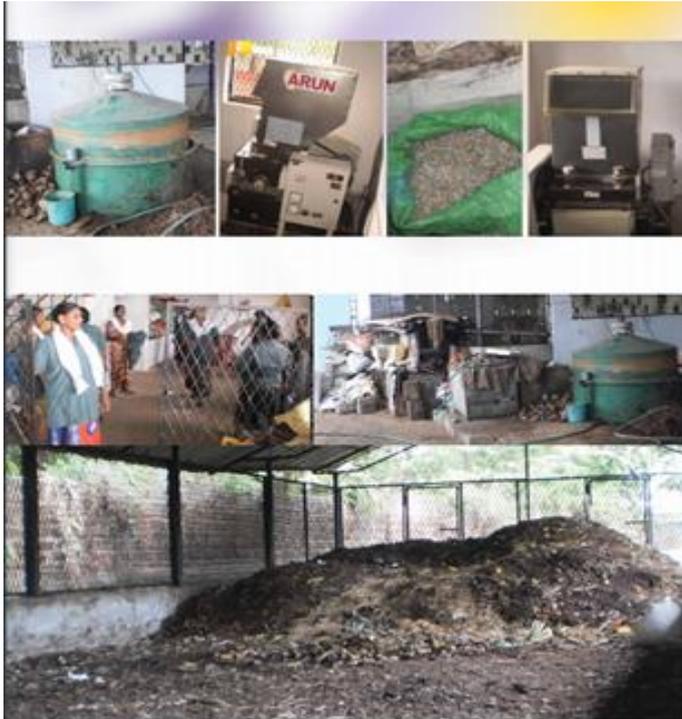
Figure 18.3 Community Level Biogas plant



Fig. 18.4 Thumboor muzhi Plants (Aero bins)



Fig. 18.5 Organic Waste Converter

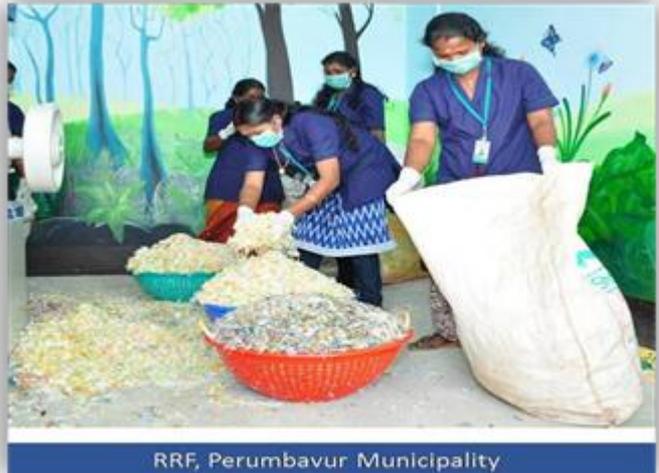


Solid Waste Management Unit, Adat, Thrissur



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

Fig. 18.6 Community level solid waste management unit



RRF, Perumbavur Municipality



Plastic Shredding unit of Adimaly Grama Panchayath



Shredded Plastic at Adimaly Grama Panchayath



Fig. 18.7 Resource Recovery Facility
**Material/Resource Recovery Facility
(MRF/RRFs)**



Fig. 18.8 Resource Recovery Facility

Bailing 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

18.2 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 Willingdon island, Kochi. The treatment plant consists of Up flow 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.

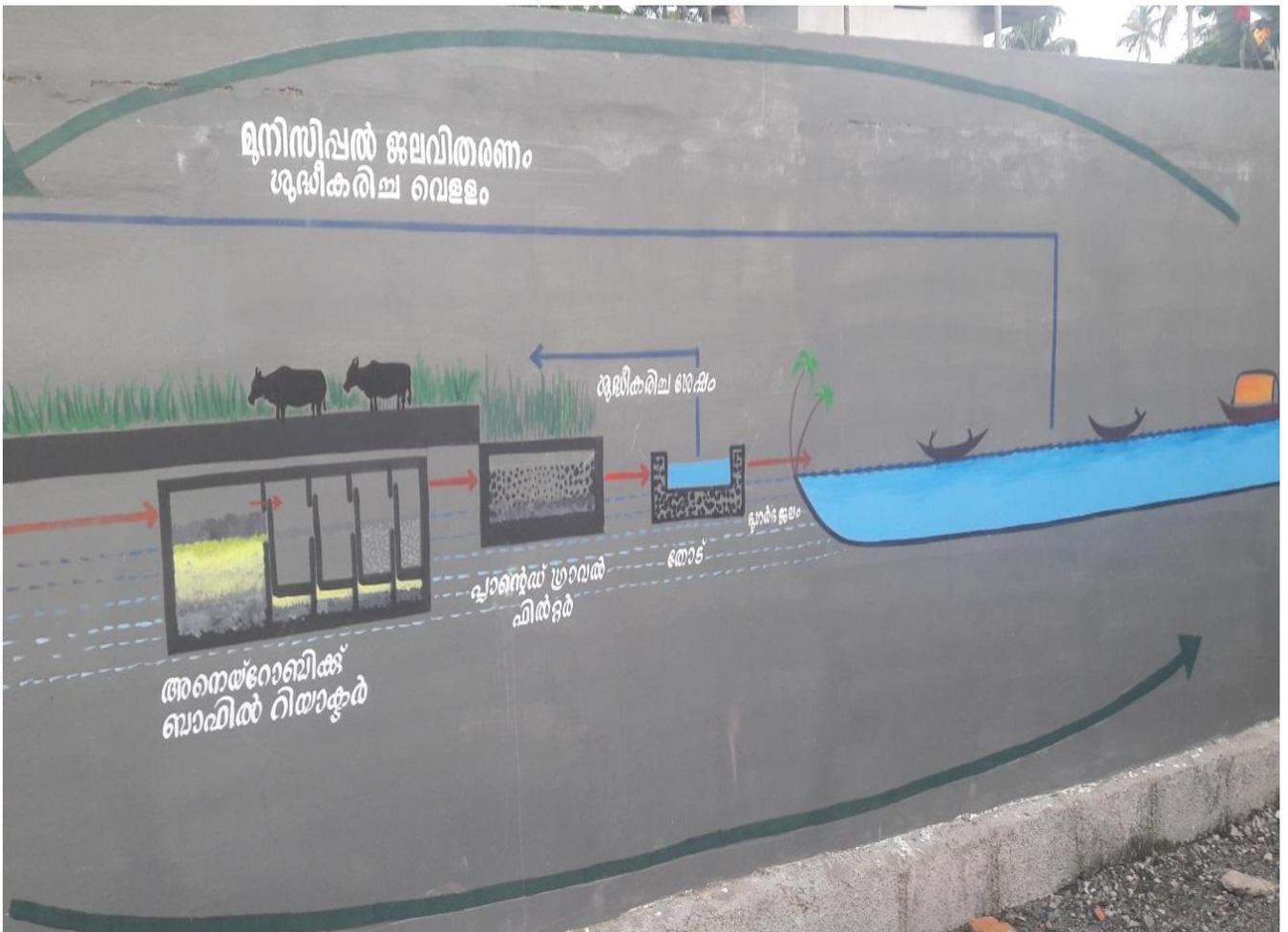


Fig.18.19 DEWATS system in a slum area at Chathanad, Alappuzha



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 18.22 The phytoremediation area

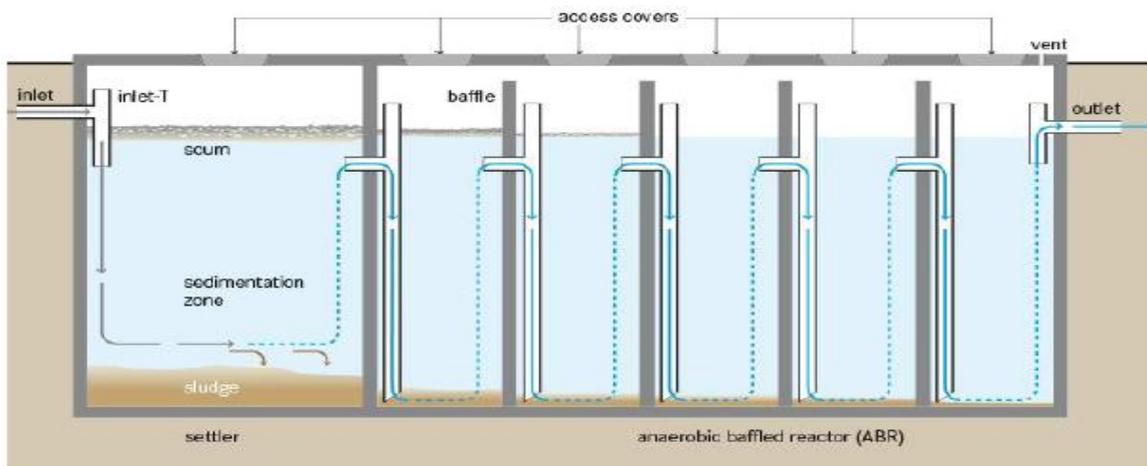


Fig 18.23 The anaerobic baffle reactor

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.18.24The 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

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.

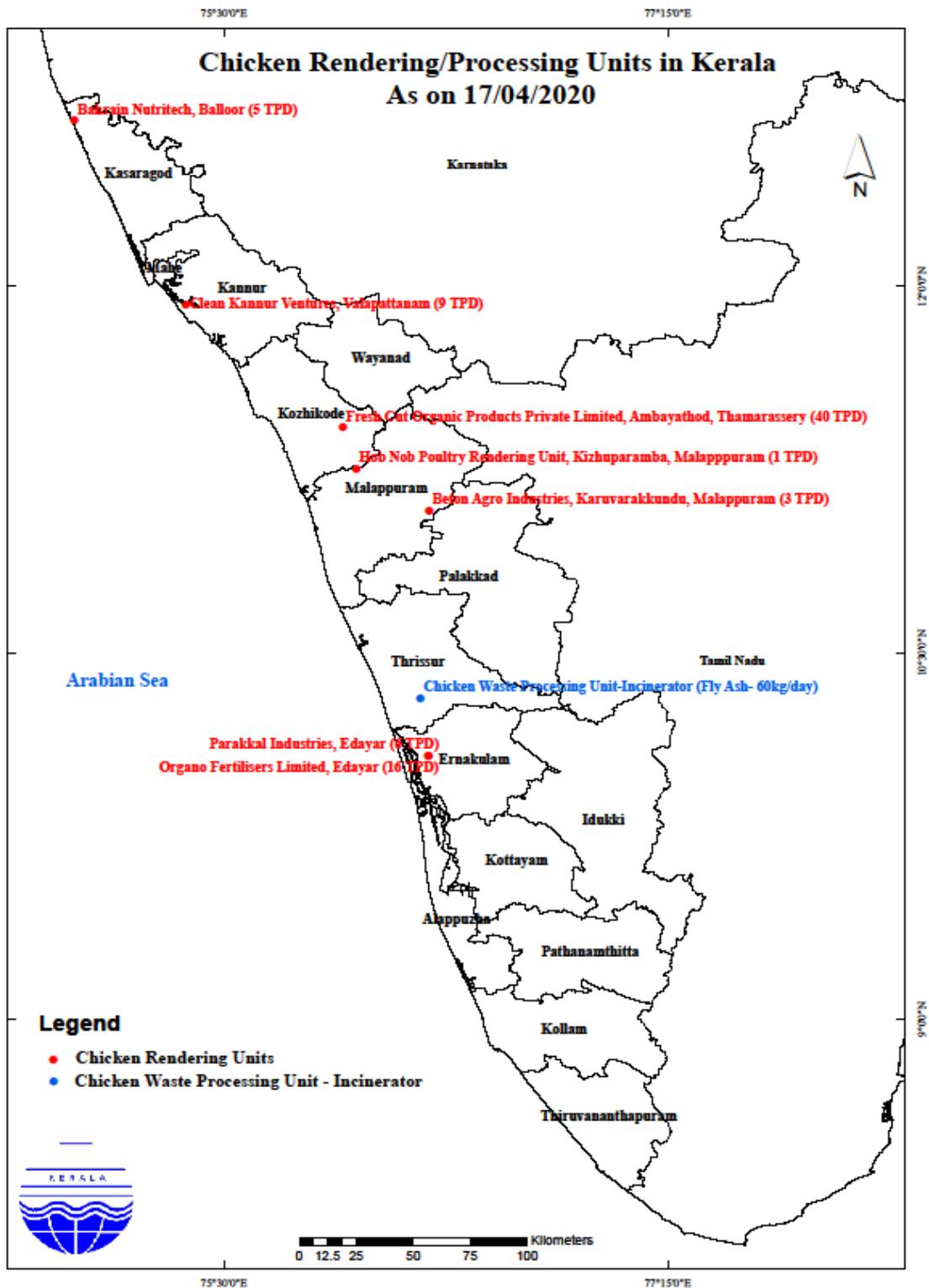


Fig. 18.28 Map of chicken rendering plants in Kerala

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.



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. They have also taken steps to set up e-waste dismantling unit.

From the informal sector, 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. Action is being initiated for setting up e-waste dismantling unit.

18.7 Preparation of Detailed Project Report for polluted stretches

Government authorized 33 Engineering colleges in the State to prepare detailed project report in collaboration with Water Resources department and accordingly DPRs were prepared for 21 polluted river stretches for the abatement of pollution and for its rejuvenation.

18.8 Dumpsite after clearance at Erumakuzhy in Trivandrum District



STATUS REPORT ON SOLID WASTE MANAGEMENT AS ON FEB 2021 (Details submitted by localbodies)

A. Corporation

A.1. Segregation and Collection									
Name of District		Thiruvananthapuram	Kollam	Ernakulam	Thrissur	Kozhikode	Kannur		
Name of Corporation		Thiruvananthapuram (Model city)	Kollam	Kochi	Thrissur (Model city)	Kozhikode (Model city)	Kannur		
Population (2011)		958000	348657	677000	317546	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		326		300	21		
Total bio waste generated (TPD)						195			
Total non bio waste generated (TPD)						105			
Total waste collected (TPD)				206		100	15		
Total waste treated (TPD)	Centralised units	Nil		206			15		
	decentralised units	152.23		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
		Perce	Dry	19.4	59.8	89.8	23.3	49.72	63.5

A.1. Segregation and Collection									
Name of District		Thiruvananthapuram	Kollam	Ernakulam	Thrissur	Kozhikode	Kannur		
Name of Corporation		Thiruvananthapuram (Model city)	Kollam	Kochi	Thrissur (Model city)	Kozhikode (Model city)	Kannur		
	Collection Frequency	Wet			89.8	0.9	36.23	42.4	
		Dry	Weekly once	monthly once or twice	Every 3 days	Once in month	Weekly once	Monthly	
		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	19.7	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	Household	NIL	0	89.7			0		

A.1. Segregation and Collection							
Name of District		Thiruvananthapuram	Kollam	Ernakulam	Thrissur	Kozhikode	Kannur
Name of Corporation		Thiruvananthapuram (Model city)	Kollam	Kochi	Thrissur (Model city)	Kozhikode (Model city)	Kannur
centralised system	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
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			1 TPD sent for recycling			Nil
	Total						

A.1. Segregation and Collection						
Name of District	Thiruvananthapuram	Kollam	Ernakulam	Thrissur	Kozhikode	Kannur
Name of Corporation	Thiruvananthapuram (Model city)	Kollam	Kochi	Thrissur (Model city)	Kozhikode (Model city)	Kannur
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	10460	326	127	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 biomethanation (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
Informal waste collectors (hotels & chicken stall)		25				
Non- Biodegradable waste		331 T		44.5 TPD		

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
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	65.9	9.7	82.5	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	1750	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		0	NIL	nil		NA

Name of District		Thiruvanthapuram	Kollam	Ernakulam	Thrissur	Kozhikode	Kannur
Name of Corporation		Thiruvanthapuram	Kollam	Kochi	Thrissur	Kozhikode	Kannur
	facilities (TPD)						
Biogas plant (Household level)	Total no of units supplied	3982	2100	NIL	727	444	50
	Smart Biobins				400		
	No of units working	3892	2100	NIL	727	424	40
	No of units not working	2.39	318	NIL	-	20	10
	Quantity of waste treated using biogas plant (TPD)		4.2	NIL		1.726	0
Biogas plant (Community level)	Total no of units supplied	23	13	NIL	727	3	1
	No of units working	18	13	NIL	727	3	1
	No of units not working	5	0	NIL	nil	0	0
	Quantity of waste treated using biogas plant (TPD)	18.4	5.6	NIL	nil	6	0.25
Aerobins (Community level)	Total no of units supplied	55	27	NIL	50	289	NIL
	No of units working	53	13	NIL	50	289	NA
	No of units not working	2	0	NIL	nil	0	NA
	Quantity of waste treated using aerobins (TPD)	12	1.3	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	27.5	NIL			NA
Others	Total no of units supplied	109	0	NIL	52655 Compost pit		1
	No of units working	109	0	NIL	52655		1

Name of District		Thiruvanthapuram	Kollam	Ernakulam	Thrissur	Kozhikode	Kannur
Name of Corporation		Thiruvanthapuram	Kollam	Kochi	Thrissur	Kozhikode	Kannur
	No of units not working	109	0	NIL	-		0
	Quantity of waste treated using these units (TPD)		25	NIL			0.25

B. Municipalities

B.1. Municipalities in Thiruvananthapuram

B.1.1. Segregation and Collection

Name of District		Thiruvananthapuram			
Name of Municipality		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
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

B.1.1. Segregation and Collection								
Name of District				Thiruvananthapuram				
Name of Municipality				Attingal (Model Town)	Neyyattinkara	Nedumangad	Varkala	
Total biodegradable waste generated				16			9	
Total non biodegradable waste generated				1.2			6	
Total waste collected (TPD)								
Total waste treated (TPD)	Centralised units							
	decentralised units							
	Other							
Total waste treated (TPD)								
D2D Collection	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

B.1.1. Segregation and Collection					
Name of District		Thiruvananthapuram			
Name of Municipality		Attingal (Model Town)	Neyyattinkara	Nedumangad	Varkala
	No of vehicles used	15 Push cart 2 LCV	2	2	3
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				

B.1.1. Segregation and Collection

Name of District		Thiruvananthapuram			
Name of Municipality		Attingal (Model Town)	Neyyattinkara	Nedumangad	Varkala
	Clean Kerala Company		0.5		
	Road tarring				800 kg
	Cement kiln				
	Landfill				
	Others				
	Total				
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

Name of District	Thiruvananthapuram			
	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
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

Name of District	Thiruvananthapuram			
Name of Corporation /Municipality /Panchayath	Attingal (Model Town)	Neyyattinkara	Nedumangad	Varkala
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

Name of District	Thiruvananthapuram			
Name of Municipality	Attingal (Model Town)	Neyyattinkara	Nedumangad	Varkala
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			
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	

Name of District		Thiruvanthapuram			
		Attingal (Model Town)	Neyyattinkara	Nedumangad	Varkala
Name of Municipality					
	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, biobin, pot bin	Total no of units supplied	NIL	-		
	No of units working	-	-		

Name of District		Thiruvanthapuram			
Name of Municipality		Attingal (Model Town)	Neyyattinkara	Nedumangad	Varkala
	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

B.2.1. Segregation and Collection								
Name of District				Kollam				
Name of Municipality				Karunagapally	Paravur (South)	Punalur (Model Town)	Kottarakara	
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)								
Total waste collected (TPD)								
Waste treated (TPD)		Centralised units						
		decentralised units						
		Other						
Total waste treated (TPD)								
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	

B.2.1. Segregation and Collection

Name of District				Kollam			
Name of Municipality				Karunagapally	Paravur (South)	Punalur (Model Town)	Kottarakara
	Percentage	Wet	0	nil	Nil	0	
		Dry	20.6	100	99.9	20.1	
		Wet	0			0	
		Dry	15days	weekly	Daily	756	
	Collection Frequency	Wet	0		Nil	0	
		No of collectors			35	32	127
	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		

B.2.1. Segregation and Collection

Name of District		Kollam			
Name of Municipality		Karunagapally	Paravur (South)	Punalur (Model Town)	Kottarakara
	RRF	1		0	1
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

Name of District	Kollam	Kollam	Kollam	Kollam
Name of Municipality	Karunagapally	South Paravur	Punalur (Model Town)	Kottarakara
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			
	Karunagapally	Paravur (South)	Punalur	Kottarakara
No of units supplied:	27 Biogas	75 biogas, 300 pipe compost	1250 Biogas, 5000 Pipe Compost,6500	

			Compost pit	
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	

B.2.3.1 Details of Decentralised Facilities as reported by Localbodies

Name of District		Kollam			
		Karunagapally	Paravur (South)	Punalur	Kottarakara
Name of Municipality				(Model Town)	
pipe compost	Total no of units supplied		300	5000	
	No of units working		0	5000	
	No of units not working		300	Nil	

Name of District		Kollam			
Name of Municipality		Karunagapally	Paravur (South)	Punalur (Model Town)	Kottarakara
	Quantity of waste treated using pipe composting facilities (TPD)		0	10 TPD	
Kitchen bin	Total no of units supplied		0		
	No of units working		0		
	No of units not working		0		
	Quantity of waste treated using kitchen bin facilities (TPD)		0		
Biogas plant (Household level)	Total no of units supplied		75	1250	
	No of units working		15	1250	
	No of units not working		60	Nil	
	Quantity of waste treated using biogas plant (TPD)		0.22		
Biogas plant (Community level)	Total no of units supplied		0		
	No of units working		0		
	No of units not working		0		
	Quantity of waste treated using biogas plant (TPD)		0		
Aerobins	Total no of units supplied		4 units	27	

Name of District		Kollam			
Name of Municipality		Karunagapally	Paravur (South)	Punalur (Model Town)	Kottarakara
(Community level)	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		0		
	No of units working		0		
	No of units not working		0		
	Quantity of waste treated using these units (TPD)		0		
Others	Total no of units supplied		0	6000 (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	

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	
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
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	
			Wet	0	150		
		Percentage	Dry	3.5	6.2	100	0
			Wet	0	6.2	0	0
		Collection Frequency	Dry		daily	Weekly twice	
			Wet		daily		

B.3.1. Segregation and Collection					
Name of District		Pathanamthitta			
Name of Municipality		Adoor	Pathanamthitta	Thiruvalla	Pandalam
	No of collectors	4	16+1 (1 agency)	55	
	No of vehicles used	1	2	3	
No. having source level treatment of wet waste in operation	Household	1250 Pipe Compost, 250 Ring Compost	500	-	
	Establishment		15	1140	
Percentage having source level treatment of wet waste in operation	Household	0	Nil		
	Establishment	65	Nil	90%	
No. disposing to centralised system	Household		0		
	Establishment		0		
Percentage having disposal to centralised system	Household	0	0		
	Establishment	65	0		
No. existing	MCF	1	3	1	
	RRF	0	1		
No. needed	MCF	4	59	5	
	RRF	0	4	1	

B.3.1. Segregation and Collection				
Name of District	Pathanamthitta			
Name of Municipality	Adoor	Pathanamthitta	Thiruvalla	Pandalam
User fee	75000/-per month	House hold- Rs-60/- Per month Establishment- Asper quantity	House hold- Rs-60/- Per month Establishment- Asper quantity	
Remarks		Establishment waste collected through a pvt agency aproved by council		

B.3.2. Centralised System

Name of District	Pathanamthitta			
Name of Municipality	Adoor	Pathanamthitta	Thiruvalla	Pandalam
Quantity of Waste generated (TPD) based on population	12	16	22	17
Quantity of Waste generated (TPD)	10.96TPD			

Quantity of Waste collected (TPD)	10.96TPD			
Quantity of Waste treated (TPD)				
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			
Existing capacity of Waste Processing Facilities: (TPD)	10.96TPD			
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			
	Adoor	Pathanamthitta	Thiruvalla	Pandalam
Name of Municipality				
No of units supplied:	1210, 8 Units, 9 Nos	Ring 350, Bio Bin 150, Bio Gas 250		
No of units working:	1010, 3 Unit, 9 Nos	700		
No of units not working:	200, 5 Unit, 9 Nos	50		
Reason for failure:	Mismanagement from beneficiaries, construction not completed	lack of Proper maintenance		

Total quantity of waste treated through decentralised facilities (TPD) as reported by localbodies				
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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

Name of District		Pathanamthitta			
Name of Municipality		Adoor	Pathanamthitta	Thiruvalla	Pandalam
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
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	7184	9129	
No of Establishment			9800	2000	2452	2250	1412	1423	
No of Household having segregation at source		Dry	45231	1234	1050	9300	6345	8000	
		Wet	45231	0	0	0	1240	0	
No of Establishment having segregation at source		Dry	8054	678		1000	645	80	
		Wet	8054	234	232	0	340	0	
D2D Collection	Households	Number	Dry	45000	1000	11000	5400	4487	8000
			Wet	0	0	0	0	0	Nil
		Percentage	Dry	93.8	11.12	73.76	31	62.5	87.7
			Wet	0	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	80
			Wet	6203		0	0	142	Nil
		Percentage	Dry	82.2	25	5.22	40	0	5.7
			Wet	63.3	0	0	0	10	
Collection		Dry	WEEKELY		DAILY	ONCE A	0	Monthly	

B.4.1. Segregation and Collection									
Name of District				Alappuzha					
Name of Municipality				Alappuzha	Chengannur	Cherthala	Kayamkulam	Mavelikara	Haripad
		Frequency					MONTH		
			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 system	Household			0		NIL	80	0	
	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	

B.4.1. Segregation and Collection						
Name of District	Alappuzha					
Name of Municipality	Alappuzha	Chengannur	Cherthala	Kayamkulam	Mavelikara	Haripad
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

Name of District	Alappuzha					
Name of Corporation /Municipality /Panchayath	Alappuzha	Chengannur	Cherthala	Kayamkulam	Mavelikara	Haripad
Quantity of Waste generated (TPD) based on population	72	10	19	30	11	13
Quantity of Waste generated (TPD)	58/51.388/40		3			1.5
Quantity of Waste collected (TPD)	35/2/00/TPD		2			1

Quantity of Waste treated (TPD)			2			1
Quantity of Waste processed in Composting Sites (TPD)			0.3			1
Quantity of Waste processed in biomethanation (TPD)						Nil
Quantity of Waste processed in waste to energy plants (TPD)						Nil
Quantity of Waste processed in Landfill (TPD)						Nil
Existing capacity of Waste Processing Facilities: (TPD)			0.52			Nil
Existing capacity of Waste Disposal Facilities: (TPD)						1.5
Planned Capacity of Waste Processing Facilities (TPD)						Nil
Planned Capacity of Waste Disposal Facilities (TPD)						0.03
Timeframe for installation of planned capacity of Waste Processing Facilities: (Months)						..
Timeframe for installation of planned capacity of Waste Disposal Facilities: (Months)						5
Number of Legacy waste dumpsites in the State/UTs and plan for their Remediation:			0			0

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

Name of District	Alappuzha					
Name of Municipality	Alappuzha	Chengannur	Cherthala	Kayamkulam	Mavelikara	Haripad

No of units supplied:	17200		1050			72
No of units working:	16400		950			72
No of units not working:	800		100			0
Reason for failure:	Noproper handling		Not properly maintained			NA

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			Nil	1920	0	Nil
	No of units working			Nil		0	Nil
	No of units not working			Nil		0	NA
	Quantity of waste treated using pipe composting facilities (TPD)			Nil		0	NA
Kitchen bin	Total no of units supplied			0		0	Nil
	No of units working			0		0	NA
	No of units not working			0		0	NA

Name of District		Alappuzha					
Name of Municipality		Alappuzha	Chengannur	Cherthala	Kayamkulam	Mavelikara	Haripad
	Quantity of waste treated using kitchen bin facilities (TPD)			0		0	NA
Biogas plant (Household level)	Total no of units supplied			389	364	817	72
	No of units working			39	364	242	72
	No of units not working			350	364	575	0
	Quantity of waste treated using biogas plant (TPD)			100 KG		112 Kg	350 Kg
Biogas plant (Community level)	Total no of units supplied			0	6	0	Nil
	No of units working			0	6	0	NA
	No of units not working			0	6	0	NA
	Quantity of waste treated using biogas plant (TPD)			0	6	0	NA
Aerobins (Community level)	Total no of units supplied			26	Nil	4	Nil
	No of units working			26		4	NA
	No of units not working			0		0	NA
	Quantity of waste treated using aerobins (TPD)			2 TON/ UNIT		126 Kg	NA
biocomposter,	Total no of units supplied			1750 UNIT		0	Nil

Name of District		Alappuzha					
Name of Municipality		Alappuzha	Chengannur	Cherthala	Kayamkulam	Mavelikara	Haripad
biobin, pot bin				BIOBIN			
	No of units working			0		0	NA
	No of units not working			0		0	NA
	Quantity of waste treated using these units (TPD)			0	Nil	0	NA
Others	Total no of units supplied			Nil	Nil	0	Nil
	No of units working			Nil		0	NA
	No of units not working			Nil		0	NA
	Quantity of waste treated using these units (TPD)			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	
No of Establishment having segregation at source		Dry	2800	1801	6	14		0	
		Wet	2000		2	6		0	
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	

B.5.1. Segregation and Collection									
Name of District				Kottayam					
Name of Municipality				Changanassery	Ettumanoor	Erattupetta	Kottayam	Pala	Vaikom
	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
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	

B.5.1. Segregation and Collection						
Name of District	Kottayam					
Name of Municipality	Changanassery	Ettumanoor	Erattupetta	Kottayam	Pala	Vaikom
User fee	100 Rs per houses	50 for HH 150 for Establishments		61 including cess	60, 120	0
Remarks					60(for houses) 120(establishments)	0

B.5.2. Centralised System

Name of District	Kottayam					
Name of Municipality	Changanassery	Ettumanoor	Erattupetta	Kottayam	Pala	Vaikom
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

Name of District	Kottayam					
	Changanassery	Ettumanoor	Erattupetta	Kottayam	Pala	Vaikom
Name of Municipality	Changanassery	Ettumanoor	Erattupetta	Kottayam	Pala	Vaikom
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
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

Name of District		Kottayam					
Name of Municipality		Changanassery	Ettumanoor	Erattupetta	Kottayam	Pala	Vaikom
	No of units not working			Nil		662	Nil
	Quantity of waste treated using pipe composting facilities (TPD)			Nil	700kg	6750 kg.	Nil
Kitchen bin	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 kitchen bin facilities (TPD)			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)	Total no of units supplied	36bins		28	Nil		18
	No of units working	36		28	Nil		0

Name of District		Kottayam					
Name of Municipality		Changanassery	Ettumanoor	Erattupetta	Kottayam	Pala	Vaikom
level)	No of units not working	0		0	Nil		18
	Quantity of waste treated using aerobins (TPD)	2tons		300 Kg	Nil	50kg.	0
biocomposter, biobin, pot bin	Total no of units supplied	0		Nil	Nil		0
	No of units working	0		Nil	Nil		0
	No of units not working	0		Nil	Nil		0
	Quantity of waste treated using these units (TPD)	0		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
			Wet	10000	7815
No of Establishment having segregation at source			Dry	2500	2000
			Wet	2200	820
D2D Collection	Households	Number	Dry	10000	7815
			Wet	0	4800
		Percentage	Dry	79.4	75.1
			Wet	0	46.1
		Collection Frequency	Dry	Weekly	Monthly
			Wet	Nil	nil
	Establishments	Number	Dry	2500	2000
			Wet	80	65

B.6.1. Segregation and Collection					
Name of District			Idukki		
Name of Municipality			Thodupuzha	Kattapana	
	Percentage	Dry	80.5	80	
		Wet	2.6	2.6	
	Collection Frequency	Dry	Daily	Daily	
		Wet	Daily	Daily	
	No of collectors			81	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	

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

B.6.2. Centralised System

Name of District	Idukki	Idukki
Name of Municipality	Thodupuzha Municipality	Kattappa Municipality
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

Name of District	Idukki	Idukki
Name of Municipality	Thodupuzha Municipality	Kattappa Municipality
Quantity of Waste processed in biomethanation (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
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

Name of District	Idukki	
	Thodupuzha	Kattapana
No of units supplied:	1300	1325
No of units working:	1300	1325
No of units not working:	0	0
Reason for failure:	Nil	nil

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

Name of District		Idukki	
		Thodupuzha	Thodupuzha
pipe compost	Total no of units supplied	69	
	No of units working	69	
	No of units not working	Nil	

Name of District		Idukki	
Name of Municipality		Thodupuzha	Thodupuzha
	Quantity of waste treated using pipe composting facilities (TPD)	10 k g	
Kitchen bin	Total no of units supplied	69	
	No of units working	Nil	
	No of units not working	Nil	
	Quantity of waste treated using kitchen bin facilities (TPD)	Nil	
Biogas plant (Household level)	Total no of units supplied	928	
	No of units working	928	
	No of units not working	nil	
	Quantity of waste treated using biogas plant (TPD)	500 kg	
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)	Total no of units supplied	Nil	

Name of District		Idukki	
Name of Municipality		Thodupuzha	Thodupuzha
level)	No of units working	Nil	
	No of units not working	Nil	
	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	Koothatukulam	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			5641	8421	10307	4832	27924	12000	7414	
No of Establishment			2214	2500	1015	1072	3360	2950		
No of Household having segregation at source			Dry	2400	4500	10307	5	11800	1075	1800
			Wet	1673	4500	10307	5	11800	source level management	source level management
No of Establishment having segregation at source			Dry	520	3000	925	5	1345	600	200
			Wet	150	3000	155	195	1345	800	250
D2D Collection	Households	Number	Dry	2400	0	Harithakar masena	nil	11800	450	500
			Wet	1673	0	Source level management		11800	source level management	source level management
		Percentage	Dry	42.6	0			42.3	3.8	6.8
			Wet	29.7	0		0	42.3		
		Collection	Dry	monthly	0	Monthly		weekly	MONTHLY	monthly

B.7.1. Segregation and Collection										
Name of District			Ernakulam							
Name of Municipality			Aluva	Angamaly	Eloor	Koothat tukulam	Kalamassery	Kothamangalam	Muvattupuzha	
Establishments	Frequency	Wet	daily	0	not collected		alternate days	NOT COLLECTED	not collected	
	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	#DIV/0!	
		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
	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 karma sena	
Percentage having source level treatment of wet waste in operation		Household	80	42	85	-	0	95	90	
		Establishment	80	80	80	-	4	95	90	

B.7.1. Segregation and Collection								
Name of District		Ernakulam						
Name of Municipality		Aluva	Angamaly	Eloor	Koothat tukulam	Kalamassery	Kothamangalam	Muvattupuzha
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
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

Name of District	Ernakulam						
Name of Corporation /Municipality /Panchayath	Aluva	Angamaly	Eloor	Koothattukulam	Kalamassery	Kothamangalam	Muvattupuzha
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 (TPD)	nil	nil	Nil		Nil	nil	Nil
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						
Name of Municipality	Aluva	Angamaly	Eloor	Koothattukulam	Kalamassery	Kothamangalam	Muvattupuzha
No of units supplied:	53		598	Nil	Nil	204	1224
No of units working:	53	3000	326	Nil	Nil	204	1000
No of units not working:	0		272	Nil	Nil	204	224
Reason for failure:	na		Flood	Not established	Nil	nil	flood

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					nil	1175
	No of units working	43						
	No of units not working	NIL						
	Quantity of waste treated using pipe composting facilities (TPD)							
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	NIL					202	15
	No of units working	NIL					202	15
	No of units not working	NIL					0	0
	Quantity of waste treated using biogas plant (TPD)	NIL					nil	
Biogas plant	Total no of units supplied	NIL					0	

Name of District		Ernakulam						
Name of Municipality		Aluva	Angamaly	Eloor	Koothattukulam	Kalamassery	Kothamangalam	Muvattupuzha
(Community level)	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	NIL					0	50
	No of units working	NIL					0	
	No of units not working	NIL					0	
	Quantity of waste treated using aerobins (TPD)	NIL					0	
biocomposter, biobin, pot bin	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 these units (TPD)	NIL					0	
Others	Total no of units supplied	NIL					0	
	No of units working	NIL					0	
	No of units not working	NIL					0	

Name of District		Ernakulam						
Name of Municipality		Aluva	Angamaly	Eloor	Koothattukulam	Kalamassery	Kothamangalam	Muvattupuzha
	Quantity of waste treated using these units (TPD)	NIL					0	

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	
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	

B.7.1. Segregation and Collection									
Name of District			Ernakulam						
Name of Municipality			North Paravur	Maradu	Perumbavoor	Piravam	Thrikkakkara	Thripunithura	
			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%	
No. disposing to centralised system		Household	29	1		3621	0	450	
		Establishment	1	1		545	0	Nil	
Percentage having disposal to centralised		Household	100	65		40%	nil	Nil	

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

B.7.2. Centralised System

Name of District	Ernakulam
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Name of Corporation /Municipality /Panchayath	North paravur	Maradu	Perumbavoor	Piravom	Thrikkakara	Tripunithura
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 biomethanation (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
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

Name of District	Ernakulam					
Name of Corporation /Municipality /Panchayath	North paravur	Maradu	Perumbavoor	Piravom	Thrikkakara	Tripunithura
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			31	13741
No of units working:	1500	450	Biogas plant-140, Pot compost -895, Ring compost-616	1167	31 BIOGAS	13741
No of units not working:	300	450	21	NIL	0	Nil

Name of District	Ernakulam					
Name of /Municipality	North Paravur	Maradu	Perumbavoor	Piravam	Thrikkakkara	Thripunithura
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)	2kg		0.174	0.6 TPD	0	0
Kitchen bin	Total no of units supplied	nil		0	0	0	26
	No of units working	nil		0	0	0	8

Name of District		Ernakulam					
Name of Municipality		North paravur	Maradu	Perumbavoor	Piravom	Thrikkakara	Tripunithura
	No of units not working	nil		0	0	0	18
	Quantity of waste treated using kitchen bin facilities (TPD)	nil		0	0	0	0.1
Biogas plant (Household level)	Total no of units supplied	20		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

Name of District		Ernakulam					
Name of Municipality		North paravur	Maradu	Perumbavoor	Piravom	Thrikkakara	Tripunithura
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
Others	Total no of units supplied	0		650	0	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	0	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

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	12297		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					5.39		
Total bio waste generated (TPD)			10.1					5.196		
Total non bio waste generated (TPD)			9.8					0.194		
Total waste collected (TPD)			15							
Total waste treated (TPD)	Centralised units		2							
	decentralised units		1.7							
	Other									
Total waste treated (TPD)			3.7			5.6		12.17		
D2D Collection	Households	Number	Dry	14850	3600	4400	7563	14896	13156	6000
			Wet	12297	NIL	880	1200	0	0	Nil
		Percentage	Dry	100	36.2	24.5	47.5	76.5	100	34.3
			Wet	82.8		4.9	7.6	0	0	

B.8.1. Segregation and Collection											
Name of District				Thrissur							
Name of Municipality				Chalakkudy	Chavakkad	Guruvayoor	Irinjalakuda	Kodungallur	Kunnamkulam (Model Town)	Vadakkanchery	
	Collection Frequency	Dry		14850	once in a month	monthly	monthly	weekly	monthly	1/month	
		Wet			nil	alternative days	alternative days	source reduction method	nil	Nil	
	Establishments	Number	Dry		2682	756	2683	2500	1412	3148	4844
			Wet		2012	nil	193	150	0	148	100
		Percentage	Dry		100	51	100	86.3	49.7	100	100
			Wet		75		7.2	5.2	0	4.7	2.1
	Collection Frequency	Dry			once in a week	weekly	weekly		weekly	1/month	
		Wet			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		12297	1082 Municipality is taken action to disribute 2600 kitchen bins and 500 Bio - gas plant to promote source level treatment of	13000	4600	6200	9500	17536	

B.8.1. Segregation and Collection								
Name of District		Thrissur						
Name of Municipality		Chalakkudy	Chavakkad	Guruvayoor	Irinjalakuda	Kodungallur	Kunnamkulam (Model Town)	Vadakkanchery
			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	2682	nil	90	2500	0	50	100
Percentage having disposal to centralised system	Household	0	N.A	3.2	47.47	0		0
	Establishment	100%	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

B.8.1. Segregation and Collection								
Name of District		Thrissur						
Name of Municipality		Chalakkudy	Chavakkad	Guruvayoor	Irinjalakuda	Kodungallur	Kunnamkulam (Model Town)	Vadakkanchery
No. needed	MCF	2	1	10	2	10	37	3
	RRF	1	1	2	1	3	1	1
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. Full collection of dry waste could not be done.	

B.8.3. Centralised System

Name of District	Thrissur						
	Chalakkudy	Chavakkad	Guruvayoor	Irinjalakuda	Kodungallur	Kunnamkulam	Vadakkanchery
Quantity of Waste generated (TPD) based on population	21	17	29	26	40	23	22.68
Quantity of Waste generated (TPD)	19.81	0.8 to 1 TPD	18	25.8	4.72 TPD	15	22.68
Quantity of Waste collected (TPD)	13.6	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)	2.5	0.5 to 1 TPD	2.75	0	Nil	3.197 TPD	2
Quantity of Waste processed in biomethanation (TPD)	0.85	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)	3.95	0.5 to 1	4	0.6	10TPD	5 TPD-Dry waste	2TPD
Existing capacity of Waste Disposal Facilities: (TPD)	3.95	0.5 to 1 TPD	4	5	9TPD		2TPD
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	

Name of District	Thrissur						
Name of Municipality	Chalakkudy	Chavakkad	Guruvayoor	Irinjalakuda	Kodungallur	Kunnamkulam	Vadakkanchery
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:	1300		bio gas 294,pot bin 500	4600	3450 PIPE COMPOST		219
No of units working:	1300	1082	bio gas 290,pot bin 490	4590	2860	Biogas plant - 196, Biobin - 4226	217
No of units not working:	NIL	NA	bio gas 4,pot bin 10		590	Nil	2
Reason for failure:	NA	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			nil	6972	Nil
	No of units working	0	2600				6972	
	No of units not working	0	0					
	Quantity of waste treated using kitchen bin facilities (TPD)	0	3.9 TPD					
Biogas plant (Household level)	Total no of units supplied	363	100	294		412	196	219
	No of units working	363	95	290		378	196	219
	No of units not working	0	5	4		34		
	Quantity of waste treated using biogas plant (TPD)	0.85	0.38 TPD	290		1.9TDP		
Biogas plant	Total no of units supplied	0	0	0		16	Nil	Nil
	No of units working	0	0	0		16	0	

Name of District		Thrissur						
Name of Municipality		Chalakkudy	Chavakkad	Guruvayoor	Irinjalakuda	Kodungallur	Kunnamkulam	Vadakkanchery
(Community level)	No of units not working	0	0	0		0	0	
	Quantity of waste treated using biogas plant (TPD)	0	0	0		1TPD	0	
Aerobins (Community level)	Total no of units supplied	0	TS obtained for 36 bins in 7 places and agreement executed with IRTC	3		NIL	3(school level)	Nil
	No of units working	0		0		NIL	3	
	No of units not working	0		3		NIL	0	
	Quantity of waste treated using aerobins (TPD)	0		3.5 TON		NIL		
biocomposter, biobin, pot bin	Total no of units supplied	408	0	500		NIL	4850	Nil
	No of units working	408	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	308	0			NIL		Nil
	No of units working	308	0					
	No of units not working	0	0					
	Quantity of waste treated	0	0					

Name of District		Thrissur						
Name of Municipality		Chalakkudy	Chavakkad	Guruvayoor	Irinjalakuda	Kodungallur	Kunnamkulam	Vadakkanchery
	using these units (TPD)							

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	42124	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	
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	40.1	0	100
			Wet		11.3	0	0	5.3	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	81.8	
		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	Household		Nil	NIL	0		1.20%	0	0	

B.9.1. Segregation and Collection

Name of District		Palakkad						
Name of Corporation/Municipality/Panchayath		Cheruplassery	Chitttur-Thattamangalam	Mannarkadu	Ottapalam	Palakkad	Pattambi	Shornur
system	Establishment	Nil	NIL	0		0	0	0
No. existing	MCF	1 Temperory	7 Nos	1	1	7	1	1
	RRF	Under Constructio n	1 Nos	Under Constructi on	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 30establish ment 50	50/100/250	Household 25 to 30pm Establish ment 50/Week	40	House Hold Dry waste-100 Wet waste-150 Establish ment -300	ESTABLI SHMENT 10/DAY.5 /DAY	Househo ld 50/- pm Establish ment 150 to 300/- pm
Remarks			collected userfess in Rs.50 /- per house and Rs.100 / 250 per				AMOUNT I	na

B.9.1. Segregation and Collection

Name of District		Palakkad					
Name of Corporation/Municipality/Panchayath	Cheruplassery	Chitttur-Thattamangalam	Mannarkadu	Ottapalam	Palakkad	Pattambi	Shornur
		establishment					

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)		9.7 Ton	2.6	1.4ton	42	3TPD	1.5
Quantity of Waste collected (TPD)		3 Ton	2	0.980ton	18	500KG	1.5
Quantity of Waste treated (TPD)		2.85 Ton	2	0.980ton	15	50KG	1.5
Quantity of Waste processed in Composting Sites (TPD)		2.85 Ton	Nil	880 ton	8	NA	NIL
Quantity of Waste processed in biomethanation (TPD)			Nil	0	15	NA	NIL
Quantity of Waste processed in waste to energy plants (TPD)		NIL	Nil	0	nil	NA	NIL
Quantity of Waste processed in Landfill (TPD)		NIL	Nil	0	Nil	NA	NIL

Name of District	Palakkad						
Name of Corporation /Municipality /Panchayath	Cheruplassery	Chitttur-Thattamangalam	Mannarkadu	Ottapalam	Palakkad	Pattambi	Shornur
Existing capacity of Waste Processing Facilities: (TPD)		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
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
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Name of Municipality	Cheruplassery	Chittur-Thattamangalam	Mannarkadu	Ottapalam	Palakkad	Pattambi	Shornur
No of units supplied:		1537		4426	4550	1800	2902
No of units working:		998	55	4426	2650	0	2092
No of units not working:		539	Nil	0	1900	0	0
Reason for failure:		not availability 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		NIL	40		2500	Nil	
	No of units working		NIL	40		2500	NIL	
	No of units not working		NIL	0		NIL	NIL	
	Quantity of waste treated using pipe composting facilities (TPD)		NIL	75 Kg.		3200	NIL	

Name of District		Palakkad						
Name of Municipality		Cheruplassery	Chittur-Thattamangalam	Mannarkadu	Ottapalam	Palakkad	Pattambi	Shornur
Kitchen bin	Total no of units supplied		NIL	Nil		NIL	Nil	
	No of units working		NIL	N.A		NIL	NIL	
	No of units not working		NIL	N.A		NIL	NIL	
	Quantity of waste treated using kitchen bin facilities (TPD)		NIL	N.A		NIL	NIL	
Biogas plant (Household level)	Total no of units supplied		42	20		NIL	69	
	No of units working		42	20		NIL	NIL	
	No of units not working		NIL	0		NIL	NIL	
	Quantity of waste treated using biogas plant (TPD)		250	125 Kg		NIL	IM3 Capacity	
Biogas plant (Community level)	Total no of units supplied		NIL	Nil		1	Nil	
	No of units working		NIL	Nil		NIL	NIL	
	No of units not working		NIL	N.A		1	NIL	
	Quantity of waste treated using biogas plant (TPD)		NIL	N.A		500KG/DAY	NIL	
Aerobins (Community level)	Total no of units supplied		NIL	Nil		NIL	Nil	
	No of units working		NIL			NIL	NIL	
	No of units not working		NIL			NIL	NIL	
	Quantity of waste treated		NIL			NIL	NIL	

Name of District		Palakkad						
Name of Municipality		Cheruplassery	Chittur-Thattamangalam	Mannarkadu	Ottapalam	Palakkad	Pattambi	Shornur
	using aerobins (TPD)							
biocomposter, biobin, pot bin	Total no of units supplied		NIL	315		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	475 Kg./day		NIL	NIL	
Others	Total no of units supplied		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		
No of vehicles used		1 Owned and	1	2	2	1	1		

B.10.1. Segregation and Collection							
Name of District		Malappuram					
Name of Municipality		Kondotty	Kottakkal	Malappuram	Manjeri	Nilambur	Parappanangadi
		1 Hired					
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, Establishment - 100	HH- 30/- per month Estmnt- 50/- per week	300/-	60	Rs 30 (House) RS 100(Shop)
Remarks			User fee based on openlyQuantity of waste		The user free Charged in kg		

B.10.1. Segregation and Collection

B.10.1. Segregation and Collection						
Name of District	Malappuram					
Name of Municipality	Kondotty	Kottakkal	Malappuram	Manjeri	Nilambur	Parappanangadi
				base		

B.10.2. Centralised System

Name of District	Malappuram					
Name of Municipality	Kondotty	Kottakkal	Malappuram	Manjeri	Nilambur	Parappanangadi
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 TDP(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

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

Name of District		Malappuram					
Name of Municipality		Kondotty	Kottakkal	Malappuram	Manjeri	Nilambur	Parappanangadi
Biogas plant (Household level)	Total no of units supplied	NA			0	104	13
	No of units working	18			0	71	13
	No of units not working	Nil			0	33	0
	Quantity of waste treated using biogas plant (TPD)	45 Kg/day			0	0.18	
Biogas plant (Community level)	Total no of units supplied	Nil			0	NIL	
	No of units working	Na			0	NIL	
	No of units not working	Na			0	NIL	
	Quantity of waste treated using biogas plant (TPD)	Na			0	NIL	
Aerobins (Community level)	Total no of units supplied	Na			0	NIL	
	No of units working	Na			0	NIL	
	No of units not working	Na			0	NIL	
	Quantity of waste treated using aerobins (TPD)	Na			0		
biocomposter, biobin, pot bin	Total no of units supplied	Nil			0	75	
	No of units working	Na			0	75	

Name of District		Malappuram					
Name of Municipality		Kondotty	Kottakkal	Malappuram	Manjeri	Nilambur	Parappanangadi
	No of units not working	Na			0	NIL	
	Quantity of waste treated using these units (TPD)	Na			0	0.19	
Others	Total no of units supplied	123 Ring Compost			0	NIL	
	No of units working	123			0	NIL	Ongoing
	No of units not working	Nil			0	NIL	
	Quantity of waste treated using these units (TPD)	50 Kg/day			0	NIL	

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	Dry	6242	11475	8490	5500	12769	NA

B.3.1. Segregation and Collection									
Name of District			Malappuram						
Name of Corporation/Municipality/Panchayath			Perinthalmanna	Ponnani	Thanoor	Thiroorangadi	Tirur	Valanchery	
source		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
			Wet	Nil	Nil	0	Nil	0	
	Establishments	Number	Dry	1102	1778	150	500	8412	Nil
			Wet	193	0	0	0	0	Nil
		Percentage	Dry	34.5	70	10	25	100	
			Wet	6.1	0	0	0	0	
		Collection Frequency	Dry	Daily	Twice/month	once in week	fortnightly	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	

B.3.1. Segregation and Collection

Name of District		Malappuram					
Name of Corporation/Municipality/Panchayath		Perinthalmanna	Ponnani	Thanoor	Thiroorangadi	Tirur	Valanchery
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
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
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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 facilities (TPD)		0.546	Nil	2.86	0.21	Nil
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		nil	Nil	NIL	1.2	Nil

Name of District		Malappuram					
Name of Municipality		Peinthalmanna	Ponnani	Thanoor	Thiroorangadi	Tirur	Valanchery
	(TPD)						
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

Name of District		Malappuram					
Name of Municipality		Peinthalmanna	Ponnani	Thanoor	Thiroorangadi	Tirur	Valanchery
Others	No of units not working		0	Nil	NIL		Nil
	Quantity of waste treated using these units (TPD)		1	Nil	NIL		Nil
	Total no of units supplied		235(bucket compost)	67(Ring Compost)	NIL		Nil
	No of units working		235	67	NIL		Nil
	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	10123	18000
No of Establishment	1750	1292	2860	2022	1400	1400	5938

B.11.1. Segregation and Collection										
Name of District		Kozhikode								
Name of Corporation		Faroke	Koduvally	Koyilandy	Mukkam	Payyoli	Ramanattukara	Vadakara		
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	-	10200	7315	Nil	16000	
			Wet	6500	-	NIL	nil	Nil	nil	
		Percentage	Dry	44.7		59.7	90	0		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	
	Establishments	Number	Dry	59	-	225	1836	nil	5938	
			Wet	12	-	225	nil	nil	nil	
		Percentage	Dry	3.4		7.9	90.9	0		100
			Wet	0.7		7.9		0		
Collection Frequency		Dry	once in a week	-	DAILY	monthly		Nil	4000	
		Wet	daily	-	DAILY	nil		Nil	nil	
No of collectors		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	Household	6500	-	4200	237		Nil	8890		

B.11.1. Segregation and Collection								
Name of District		Kozhikode						
Name of Corporation		Faroke	Koduvally	Koyilandy	Mukkam	Payyoli	Ramanattukara	Vadakara
in operation	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
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	Only dry waste D2D collection. Wet waste at source level					

B.11.1. Segregation and Collection							
Name of District	Kozhikode						
Name of Corporation	Faroke	Koduvally	Koyilandy	Mukkam	Payyoli	Ramanattukara	Vadakara
	collection	treatment. Daily 600 Kg wet waste collecting from Town street by 8 Sanitary workers.					

B.11.2. Centralised System

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

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				750	Nil	3000
	No of units working	1500				100	Nil	520
	No of units not working	3000				650	Nil	2480
	Quantity of waste treated using pipe composting facilities (TPD)	1.5 tpd				Nil	Nil	1.25

Name of District		Kozhikode						
Name of Municipality		Faroke	Koduvally	Koyilandy	Mukkam	Payyoli	Ramanattukara	Vadakara
Kitchen bin	Total no of units supplied					500	Nil	Nil
	No of units working					300	Nil	Nil
	No of units not working	no				200	Nil	Nil
	Quantity of waste treated using kitchen bin facilities (TPD)					Nil	Nil	Nil
Biogas plant (Household level)	Total no of units supplied	50				Nil	Nil	100
	No of units working	50				Nil	Nil	75
	No of units not working	0				Nil	Nil	25
	Quantity of waste treated using biogas plant (TPD)	75 kg				Nil	Nil	75
Biogas plant (Community level)	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 biogas plant (TPD)					Nil	Nil	Nil
Aerobins (Community)	Total no of units supplied					Nil	Nil	18
	No of units working	1				Nil	Nil	18

Name of District		Kozhikode						
Name of Municipality		Faroke	Koduvally	Koyilandy	Mukkam	Payyoli	Ramanattukara	Vadakara
level)	No of units not working	50 kg/day				Nil	Nil	Nil
	Quantity of waste treated using aerobins (TPD)					Nil	Nil	2
biocomposter, biobin, pot bin	Total no of units supplied	nil				Nil	Nil	49
	No of units working					Nil	Nil	49
	No of units not working					Nil	Nil	Nil
	Quantity of waste treated using these units (TPD)					Nil	Nil	1
Others	Total no of units supplied	nil				Nil	Nil	1065
	No of units working					Nil	Nil	1020
	No of units not working					Nil	Nil	45
	Quantity of waste treated using these units (TPD)					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

B.12.1. Segregation and Collection							
Name of District			Wayanad				
Name of Municipality			Kalpetta	Mananthavady	Sulthanbathery		
No of Household			7519	12538	15889		
No of Establishment			2100	1724	2200		
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	

B.12.1. Segregation and Collection				
Name of District		Wayanad		
Name of Municipality		Kalpetta	Mananthavady	Sulthanbathery
	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
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

Name of District	Wayanad		
Name of Municipality	Kalpetta	Mananthavady	Sulthanbathery
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
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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

Name of District		Wayanad		
Name of Municipality		Kalpetta	Kalpetta	Kalpetta
	Quantity of waste treated using biogas plant (TPD)			NIL
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 having segregation at source	Dry	ONCE A MONTH	1900	1980	1214		2300		6000	450		
	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	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	

B.13.1. Segregation and Collection

Name of District				Kannur								
Name of Municipality				Anthoor	Panoor	Koothuparambu	Iritty	Mattanur	Payyanur	Sreekantapuram	Thalassery	Thaliparambu
	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
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				

B.13.1. Segregation and Collection

Name of District		Kannur								
Name of Municipality		Anthoor	Panoor	Koothuparambu	Iritty	Mattanur	Payyanur	Sreekantapuram	Thalassery	Thaliparambu
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 SHOPE S	Rs.30 for House Rs.50 for shope	Rs 40 for every household per month	HOUSE 30 Establish ment (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
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				MCF the Kavumbai recycling unit temperarly close due to strike	existing MCF is insufficien t to store plastic waste collected by Haritha karmasena	

B.13.1. Segregation and Collection

B.13.1. Segregation and Collection									
Name of District	Kannur								
Name of Municipality	Anthoor	Panoor	Koothuparambu	Iritty	Mattanur	Payyanur	Sreekantapuram	Thalassery	Thaliparambu
			people are reluctant to pay the amount regularly.						

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 biomethanation (TPD)			Nil	0			Nil	0	Nil

Name of District	Kannur								
Name of Municipality	Anthoor	Panoor	Koothuparambu	Iritty	Mattanur	Payyanur	Sreekantapuram	Thalassery	Thaliparambu
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 Processing Facilities: (Months)			24 months	12				As per DPR	
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
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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			100 Kg			-	Nil	4 - 7.5 Kg/day	

Name of District		Kannur								
Name of Municipality		Anthoor	Panoor	Koothuparambu	Iritty	Mattanur	Payyanur	Sreekantapuram	Thalassery	Thaliparambu
	plant (TPD)									
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 plant (TPD)	NIL		400 Kg			-	Nil	Nil	
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	

Name of District		Kannur								
Name of Municipality		Anthoor	Panoor	Koothuparambu	Iritty	Mattanur	Payyanur	Sreekantapuram	Thalassery	Thaliparambu
	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	85.6	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	

B.14.1. Segregation and Collection						
Name of District				Kasaragod		
Name of Municipality				Kanhangad	Kasaragod	Nileshwaram
		Collection Frequency	Wet	16	0	0
			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
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

B.14.1. Segregation and Collection			
Name of District	Kasaragod		
Name of Municipality	Kanhangad	Kasaragod	Nileshwaram
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

Name of District	Kasaragod		
Name of Municipality	Kanhangad	Kasaragod	Nileshwaram
Quantity of Waste generated (TPD) based on population	45	55	17
Quantity of Waste generated (TPD)	45	11 mt	
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 biometanation (TPD)	NIL.	2.5	

Name of District	Kasaragod		
Name of Municipality	Kanhangad	Kasaragod	Nileshwaram
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
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	-

Name of District		Kasaragod		
		Kanhangad	Kasaragod	Nileshwaram
Name of Municipality				
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	-
	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

Name of District		Kasaragod		
Name of Municipality		Kanhangad	Kasaragod	Nileshwaram
	No of units not working	0	Nil	
	Quantity of waste treated using these units (TPD)	0.04	Nil	0.5TPD



KERALASTATE POLLUTION CONTROL BOARD

കരളസംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്

Pattom P.O., Thiruvananthapuram – 695 004

പട്ടം പി.ഒ., തിരുവനന്തപുരം - 695 004

PCB/HO/SEE2/Aluva Municipality /2019

Date: 17/02/2021

Regd. with A/D

SHOWCAUSE NOTICE UNDER SECTION 5 OF THE ENVIRONMENTAL PROTECTION ACT, 1986

Sub: Non-compliance of Solid Waste Management Rules, 2016.

- Ref: 1. The Hon'ble NGT order dated 16/01/2019 in OA no. 606/2018.
2. The Hon'ble NGT order dated 22/11/2018 in O.A. No. 353/2016.
3. The Hon'ble NGT order dated 20/11/2018 in O.A No. 117/2014, 499/2014 and 102/2014.
4. Letter No. PCB/HO/RULES/SWM-ERNAKULAM/2018 dated 13/02/2019
5. Letter No. H4-2655/19 dated 27/03/2019.
6. Letter No. PCB/RO-EKM/NEW-97/12 dated 22/05/2019 from CEE, RO, Ernakulam.
7. Notice of even No. dated 12/10/2019.
8. Your letter dated 24/08/2020
9. Minutes of Video Conference held on 19/11/2020.
10. Letter No. PCB/RO-EKM/GEN-258/19 dated 10/01/2021.

WHEREAS the Central Government notified the Environmental (Protection) Act, 1986 for the protection and improvement of environment and for matters connected therewith;

WHEREAS as per Section 3, 6 and 25 of the Environment (Protection) Act, 1986, the Central Government re-notified the Solid Wastes Management Rules, 2016 hereinafter referred as SWM Rules) vide notification S.O. 1357(E) dated 8/4/2016;

WHEREAS as per Rule 22 (1) of the SWM Rules, suitable sites for setting up solid waste processing facilities are to be identified;

WHEREAS as per Rule 22(3) of the SWM Rules, suitable sites for setting up solid waste processing facility and sanitary landfill facilities are to be procured;

WHEREAS as per Rule 22 (5) of the SWM Rules, door to door collection of segregated waste and its transportation in covered vehicles to processing or disposing facility shall be ensured by 8-4-2019;

WHEREAS as per Rule 22 (7) of the SWM Rules, solid waste processing facilities for the complete quantity of waste generated from the local body at 0.4 to 0.5 kg/person/day, shall be set up by 8-4-2019;

WHEREAS facilities with the technologies specified in CPHEEO manual and SWM Rules are to be in place for the effective treatment and disposal of the solid waste generated in the local body;

WHEREAS as per Rule 22 (6) of the SWM Rules, separate storage, collection and transportation of construction and demolition waste shall be provided;

WHEREAS as per Rule 22 (11) of the SWM Rules, bio-remediation or capping of old and abandoned dump site shall be ensured;

WHEREAS as per NGT order dated 25/04/2019 in O.A. 606/2018 (ref.1 above), all environmental statutes are to be complied by the model city/town/village by 25.10.2019 and all other local bodies by 25.04.2020;

WHEREAS repeated instructions were issued including the communications read 4th and 6th above, for the compliance of the SWM Rules;

WHEREAS it is pointed out vide the letter cited 6th above that you had been continuously violating the rules by evading from adopting suitable measures for Solid Waste Management;

WHEREAS the Board issued direction vide communication read 7th to take step to provide bio-methanation plant for the waste generated within Aluva Municipality;

WHEREAS it is noted vide ref. 8 that you are still disposing biodegradable waste to the Brahmapuram plant which is in dilapidated condition;

WHEREAS it is noted vide ref. 8 that you are disposing non-biodegradable waste to the hazardous landfill of KEIL, which is meant for the disposal of Hazardous Wastes as per Hazardous Waste Management Rule and is against the rule;

WHEREAS in the meeting held on 19/11/2020 through video conference with municipality, Chief Environmental Engineer, Regional Office had been directed to submit a detailed report in Solid Waste Management;

WHEREAS the Hon'ble National Green Tribunal, Principal Bench, New Delhi in the order dated 22/11/2018 in O.A. No. 353/2016 clarified that apart from prosecution, the statutory authorities under the Environment (Protection) Act, 1986, the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974, must, in exercise of their incidental powers, prescribed scale of compensation to be collected from the polluters on the "Polluter Pay's Principle". Such scale which may be laid down at various levels, having regard to the local condition or as per direction in the hierarchy of the authorities. In various other application also, the Hon'ble NGT passed similar orders, for instance, in the Order dated 20/11/2018 in O.A No. 117/2014, 499/2014 and 102/2014 the Hon'ble NGT noted as; "Needless to say that statutory authorities under the Environment (Protection) Act, 1986, Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974 are entitled to assess and recover damages as "Polluter Pay's Principle" in exercise of incidental powers to protect environment".

WHEREAS the Chief Environmental Engineer, Regional Office, Ernakulum made assessment for levying Environmental Compensation, details of assessment were furnished vide letter No.PCB/RO-EKM/GEN-258/19 dated 10/01/2021(Ref.9 above) as follows for the non-compliance with the Solid Waste Management Rules, 2016;

Population(2011)	22,428
Class	Class III
Total waste generation (kg per person per day)	0.3
Waste generation (TPD)	6.73
Waste disposed as per Rules (TPD)	0.67
Waste Management Capacity Gap(TPD)	$6.73-0.67=6.06$
EC - Capital Cost Component (Rs in lakhs) (Min:100 & Max:1000)	$2.4 \times 6.06 = 14.54$ (Taken as 100)
EC - O&M Component(Rs in lakhs/day) (Min: 0.1 & Max: 1)	$0.02 \times 6.06 = 0.12$
Environmental Externality(Rs in lakhs/day) (Min: 0.05 & Max: 0.1)	$5 \times 6.06 / 100000 = 0.0003$ (Taken as 0.05)
No. of days (N) (Taken as days from 09.04.2019 to 31.12.2020)	663
Environmental Compensation (Rs in lakhs)	$100 + 0.12 \times 663 + 0.05 \times 663 = 212.71$

AND WHEREAS an amount of **Rs. 212.71 lakhs (Rupees Two hundred twelve lakh and seventy one thousand only)** is assessed as environmental compensation from 09/04/2019 to 31/12/2020 against you for the non-compliance of the Solid Waste Management Rules, 2016;

NOW THEREFORE, in exercise of the powers vested under Section 5 of the Environment Protection Act, 1986, read with Government of India Notification S.O. 327(E) dated 10/04/2020 you are directed to show cause within 15 days of receipt of this notice as to why the Board shall not recover Environmental Compensation of **Rs. 212.71 lakhs (Rupees Two hundred twelve lakh and seventy one thousand only)** from 09/04/2019 to 31/12/2020 against you for the non-compliance of Rule 22 of the SWM Rules, 2016.


CHAIRMAN

To

The Secretary
Aluva Municipality

Copy to:

1. The Chairman
State Level Monitoring Committee.
2. The Additional Chief Secretary
Local Self Government Department.
3. The District Collector, Ernakulam.
4. The Director, Urban Directorate.
5. The Chief Environmental Engineer, Regional Office, Ernakulam.
6. The Environmental Engineer, District Office, Ernakulam.

ANNEXURE 3

☎: 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



KERALASTATE POLLUTION CONTROL BOARD

കരളസംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്

Pattom P.O., Thiruvananthapuram – 695 004
പട്ടം പി.ഒ., തിരുവനന്തപുരം - 695 004

PCB/HO/SEE2/KOCHI CORPN/2019

Date: 13/01/2021

Regd. with A/D

DIRECTION UNDER SECTION 5 OF THE ENVIRONMENTAL PROTECTION ACT, 1986

Sub: Non-compliance of Solid Waste Management Rules, 2016.

- Ref: 1. Order dated 23/10/2018 of the Hon'ble NGT in O.A. 533-535/2018.
2. Order dated 9/11/2018 of the Hon'ble High Court in WP(c) No. 36204/2018(A)
3. Order dated 16/01/2019 in OA no. 606/2018
4. This office notice No. PCB/HO/RULES/SWM-ERNAKULAM/2018 dated 12/10/ 2019
5. Letter no. PCB/RO-EKM/GEN-221/19 dated 18/10/2019 from the Chief Environmental Engineer, Regional Office, Ernakulum
6. This office notice No. PCB/HO/SEE2/KOCHI CORPN/2019 dated 11/12/2019
7. Letter No. MOE2/10948/2017 dated 01/ 01/ 2020 and 06/01/2020 of Secretary, Kochi Corporation
8. Order dated 30/01/2020 in OA no. 442/2013 by the Hon'ble NGT.
9. Letter no. PCB/RO/EKM/GEN-258/19 dated 20/02/2020.
10. Minutes of the meeting on 16-3-2020 with the Secretary, Kochi Corporation
11. Order dated 03/07/2020 in OA no.514/2019
12. Letter No PCB/RO-EKM/GEN-258/19 D dated 23.07.2020 from the Chief Environmental Engineer, Regional office, Ernakulum
13. Minutes of the video conference held on 17/08/2020 with Secretary, Kochi Corporation and allied municipalities
14. Letter No. MOE2/10948/2017 dated 11/09/2020 of Secretary, Kochi Corporation.
15. Order dated 22/11/2018 in O.A. No. 353/2016
16. Order dated 20/11/2018 in O.A No. 117/2014, 499/2014 and 102/2014
17. Order dated 16/09/2020 in OA no.514/2018.
18. Show cause notice of even No. dated 15/10/2020.
19. Letter No.MOE2-10948/17 dated 02/11/2020 from Kochi Corporation.

WHEREAS the Central Government notified the Environmental (Protection) Act, 1986 for the protection and improvement of environment and for matters connected therewith;

WHEREAS as per Section 3, 6 and 25 of the Environment (Protection) Act, 1986, the Central Government re-notified the Solid Wastes Management Rules, 2016 (hereinafter referred as SWM Rules) vide notification S.O. 1357(E) dated 8/4/2016;

WHEREAS as per Rule 22 (1) of the SWM Rules, suitable sites for setting up solid waste processing facilities are to be identified;

WHEREAS as per Rule 22(3) of the SWM Rules, suitable sites for setting up solid waste processing facility and sanitary landfill facilities are to be procured;

WHEREAS as per Rule 22 (5) of the SWM Rules, door to door collection of segregated waste and its transportation in covered vehicles to processing or disposing facility shall be ensured by 8-4-2018;

WHEREAS as per Rule 22 (7) of the SWM Rules, solid waste processing facilities for the complete quantity of waste generated from the local body at 0.4 to 0.5 kg/person/day, shall be set up by 8-4-2018;

WHEREAS facilities with the technologies specified in CPHEEO manual and SWM Rules are to be in place for the effective treatment and disposal of the solid waste generated in the local body;

WHEREAS as per Rule 22 (6) of the SWM Rules, separate storage, collection and transportation of construction and demolition waste shall be provided;

WHEREAS as per Rule 22(11) of the SWM Rules, bio-remediation or capping of old and abandoned dump site shall be ensured;

WHEREAS the Hon'ble NGT vide order dated 23/10/2018 read first above, ordered to complete the new integrated solid waste treatment processing plant in six months to commence the treatment of legacy waste, impose a penalty of Rs. 1 crore on Kochi Corporation and to deposit a performance guarantee of Rs. 3 crore with Kerala State Pollution Control Board and the Hon'ble High Court vide the order read 2nd above, ordered to place bank guarantee of Rs. 50 lakh each to Central Pollution Control Board and Kerala State Pollution Control Board and to exempt you from depositing Rs. 3 crore towards bank guarantee and accordingly bank guarantee was placed by the Kochi Corporation;

WHEREAS during the second meeting on 15/3/2019 of the State Level Monitoring Committee constituted by the Hon'ble NGT vide the order under ref.3, the resolutions were made to conduct bio mining of legacy waste part by part; keep ESCROW amount for handling emergency situation; provide adequate cover, leachate collection tank and log book for waste transporting vehicles and allow waste transportation only by those vehicles by Health Supervisor; engage Ex-service armed security at the site in the dump yard; to make the roads, NH Bypass, Sahodaran Ayyappan Road and Banerjee Road as Zero Waste road; to insist door to door collection and prohibit the deposition of waste on roads and other public places and insist for segregation of waste before disposal; ban the plastic carry bags below the prescribed limit and to proceed against violators under the law of penalization; to give adequate protective equipment namely gumboots, gloves, masks etc., proceed against the violators disposing sewage, septage and chicken waste in the water resources; apartments, hospitals, hospitals which are not operating their sewage treatment plants and to evolve methods for the effective disposal of plastics and not to dispose plastic by burning;

WHEREAS Chairman SLMC during their 4th meeting on 08/05/19 directed to submit specific and detailed time bound action plan to the Kerala State Pollution Control Board, to adopt mechanized system for the disposal of legacy waste, to implement heavy fining/insisted surveillance cameras/strict squad to prevent waste dumping on roads, to insist on segregation of wastes at source, to transport vehicles with adequate cover, leachate collection tank and logbook, to provide adequate personal protective equipments to workers and to compel them to wear the same,

to prohibit deposit of wastes on roads and other public places, to deploy Haritha Karma Sena for door to door collection, to report on the action taken to the SLMC;

WHEREAS the fifth meeting of the State Level Monitoring Committee on 14/06/2019, noticed with distress that a good number of directions issued were yet to be complied with and therefore expressed displeasure over the same and it was again directed to issue directions by the Corporation to the bulk generators to take steps to channelize their own wastes as the same is homogenous and clean, channelization can be done easily; to submit the details of wards, in which segregation is complete; segregate plastic waste for shredding to be stored in areas attached to the zonal office of the Corporation; and to submit action plan in each ward for solid waste management, projects to be implemented and to improve the existing waste management facility, existing material collection facility and resource recovery facility; to publish the information on waste management in the website; to take legal action against open burning of non-biodegradable waste and dumping of waste in water bodies; to take steps to establish MCFs in all wards and RRF at least in six wards; issue identity card to all workers engaged in waste management and to prepare action plan for developing a business model for effective treatment of waste;

WHEREAS it is noted that you have not identified the land for managing Construction and Demolition waste and sanitary landfill;

WHEREAS notice dated 12/10/2019 was issued vide reference 4th above for not taking steps to provide biomethanation plant for the food wastes generated within Kochi Corporation;

WHEREAS the Chief Environmental Engineer, Regional Office, Ernakulam vide the letter dated 18/10/2019 cited 5th above, reported about the improper functioning of solid waste plant and non installation of proper leachate treatment plant at the site;

WHEREAS the Board issued notice dated 11/12/2019 read 6th above to the Secretary, Kochi Corporation to show cause why the Environmental compensation of Rs. 1.122 Crore shall not be levied for not providing leachate treatment plant and the replies of the Kochi Corporation under ref. 7th above were received;

WHEREAS the Hon'ble National Green Tribunal vide the order read 8th above on 30-1-2020 directed that, on receipt of the explanation from the Corporation to the notice issued by Board, the Pollution Control Board is to pass appropriate orders and complete the proceedings initiated on the basis of their inspection and dispose of the same in accordance with law and come with compliance report before the Tribunal;

WHEREAS the Chief Environmental Engineer, Regional Office, Emakulam in the report (ref. 9) dated 20/02/2020 to the Chairman, State Level Monitoring Committee, reported that the Corporation is not taking earnest steps to solve the issue which is a long pending case from the Corporation side and to assess environmental compensation as done on 18/10/2019;

WHEREAS the Chief Environmental Engineer, Regional Office, Emakulam vide letter No. PCB/RO-EKM/GEN-258/2019 dated 28-2-2020 reported that the Corporation is allowing five municipalities and two grama panchayaths to bring their biodegradable waste in addition to Corporation's biodegradable waste and non biodegradable waste and the total actual quantity of waste estimated as 365.19TPD;

WHEREAS on receiving the reply from the Secretary, Kochi Corporation, hearing was conducted with the Secretary, Kochi Corporation on 16/3/2020 vide ref., 10 reported status to the NGT;

WHEREAS the Hon'ble NGT on 3/7/2020 in OA514/2019 (ref. 11) observed the delay in setting up of waste to energy plant and was doubtful whether leachate can be treated in an ordinary septage treatment plant as it contains heavy metals and the tribunal also observed that the progress appears to be very slow and in disregard to the statutory and constitutional obligation of providing clean environment;

WHEREAS it was reported by the Chief Environmental Engineer, Regional office Ernakulam vide letter No. PCB/RO-EKM/GEN-221/19 dated 23/07/2020 (ref. 12) that during the inspection conducted by the Board on various occasions, it was noticed

- a) The facilities provided for the treatment and disposal of solid waste provided at Brahmapuram are not maintained properly;
- b) The windrow composting shed is in dilapidated condition and the mixed solid waste including plastic waste is dumped in the yard in open condition;
- c) The manure produced seems to be marginal compared to the daily waste collected at the plant;
- d) Manure produced did not meet the fertilizer standard as per the SWM Rule, 2016 and contain heavy metals;
- e) Due to the unscientific treatment of biodegradable solid waste, huge quantity of rejects have been dumped at various places and which in turn got converted to legacy waste;
- f) Fire accident were occurred in the legacy waste dump yard at Brahmapuram 3 or 4 times during the period of 2019 and 2020 which lead to air pollution in and around the dump site
- g) Leachate from the windrow composting shed and the biodegradable solid waste dumping area is not collected and treated properly due to improper drains and there are chances of leachate reaching the Kadambayar river, one of the polluted river stretch identified by CPCB;
- h) The leachate treatment plant provided prior to the visit of Regional Monitoring Committee (RMC) appointed by the Hon'ble NGT is not operational now;
- i) During the inspection conducted on 16.07.2020 it was noticed that no progress in the installation of leachate treatment plant except the construction of a new collection tank having capacity of 100 m³ on which the Hon'ble Court made adverse remarks;
- j) No effective steps were taken for construction activities for the installation of waste to energy plant and for the removal of legacy waste. The Corporation authorities are still not able to assess the quantum of legacy waste settled there;

WHEREAS hearing was conducted by the Chairman on 17/8/2020 with the Kochi Corporation (ref. 13) and accordingly details were submitted by you vide the letter under ref. 14;

WHEREAS from the above observations, it is noted that you have not fully complied with the directions of Hon'ble SLMC, Solid Waste Management Rules and also not obtained authorization under SWM Rules, 2016;

WHEREAS the Hon'ble National Green Tribunal, Principal Bench, New Delhi in the order dated 22/11/2018 in O.A. No. 353/2016 (ref. 15) clarified that apart from prosecution, the statutory authorities under the Environment (Protection) Act, 1986, the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974, must, in exercise of their incidental powers, prescribe scale of compensation to be collected from the polluters on the "Polluter Pay's Principle". Such scale which may be laid down at various levels, having regard to the local condition or as per direction in the hierarchy of the authorities;

WHEREAS in various other application also, the Hon'ble NGT passed similar orders, for instance, in the Order dated 20/11/2018 in O.A No. 117/2014, 499/2014 and 102/2014 (ref. 16) the Hon'ble NGT noted as; "Needless to say that statutory authorities under the Environment (Protection) Act, 1986, Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974 are entitled to assess and recover damages as "Polluter Pay's Principle" in exercise of incidental powers to protect environment".

WHEREAS as per Hon'ble NGT order dated 23/09/2019 in O.A 585/2018, if the rules are violated, the Pollution Control Board can independently proceed against local bodies who are not complying with the rules including initiation of prosecution of those person who are not complying with the same and assessment of damage caused to the Environment;

WHEREAS the Hon'ble NGT vide order dated 16/9/2020 in OA 514/2018 (ref. 17), observed the failure in taking effective steps on the matter;

WHEREAS based on the recommendation of the Chief Environmental Engineer, Regional Office, Ernakulum made for levying Environmental Compensation against Kochi Corporation Show Cause Notice was issued to the Corporation vide notice No. PCB/HO/SEE2/KOCHI CORPN/2019 dated 15/10/2020 (ref. 18) for furnishing reasons for not levying the Environmental Compensation of Rs. 1395.42 lakhs (Rupees One thousand three hundred and ninety five lakhs and forty two thousand only);

WHEREAS reply was received from Kochi Corporation vide letter No.MOE2-10948/17 dated 02/11/2020 (ref. 19);

ANDWHEREAS the Chief Environmental Engineer, Regional Office, Ernakulum made recommendations for reassessment of levying Environmental Compensation, vide letter No.PCB/RO-EKM/GEN-258/19 dated 10/01/2021 is as follows;

Population(2011)	6,77,381
Class	Class I
Waste generation (TPD)	315.96
Waste disposed as per Rules (TPD)	31.60
Waste Management Capacity Gap(TPD)	284.36
Calculated EC(capital cost component) in Lakhs, Rs.	682.47
Minimum and Maximum values of EC (Capital cost component) recommended by the Committee (Lakhs, Rs.)	Min. 100 Max. 1000
Final EC (capital cost component) in Lakhs, Rs.	682.47
Calculated EC (O&M component) in Lakhs, Rs./day	5.69
Minimum and maximum values of EC (O&M cost component) recommended by the Committee	Min. 0.1 Max. 1.0
Final EC(O&M component) in Lakhs, Rs./day	1.00

Calculated Environmental Externality (Lakhs Rs./day)	0.01
Minimum and maximum values of Environmental Externality recommended by the committee(Lakhs, Rs./day)	Min. 0.05 Max.0.1
Final Environmental Externality (Rs. Per day)	0.05
EC to be collected (Rs. in Lakhs from 22/11/2018 to 31/12/2020 i.e 771 days)	1492.02

NOW THEREFORE, in exercise of the powers vested under Section 5 of the Environment Protection Act 1986, read with Government of India Notification S.O. 327(E) dated 10/04/2001, you are directed to remit an amount of Rs. 1492.02 lakhs (Rupees One thousand four hundred and ninety two lakh and two thousand only) towards the Environmental Compensation for non-compliance of the Solid Waste Management Rules, 2016, for the period from 22/11/2018 to 31/12/2020 within 15 days of receipt of this direction.


CHAIRMAN

To

The Secretary,
Kochi Corporation

Copy to:

1. The Chairman
State Level Monitoring Committee with C/L
2. The Additional Chief Secretary
Local Self Government Department with C/L
3. The Principal Secretary
Environment Department with C/L
4. The District Collector, Ernakulam
5. The Director, Urban Directorate
6. The Chief Environmental Engineer, Regional Office, Ernakulam
7. The Environmental Engineer, District Office 1 and 2, Ernakulam

ANNEXURE 4

☎: 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



KERALASTATE POLLUTION CONTROL BOARD

കേരളസംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്

Pattom P.O., Thiruvananthapuram – 695 004

പട്ടം പി.ഒ., തിരുവനന്തപുരം - 695 004

PCB/HO/SEE2/OA 515-2018/2019

Date:16/01/2021

Regd. with A/D

SHOW CAUSE NOTICE UNDER SECTION 5 OF THE ENVIRONMENTAL PROTECTION ACT, 1986

Sub: Issue of notice for the non-compliance of the Solid Waste Management Rules, 2016

- Ref:
1. The Hon'ble NGT order dated 16/01/2019 in OA No. 606/2018.
 2. Letter No. PCB/HO/SEE2/RMC-Meeting/2018 dated 09.10.2018, 22.10.2018 and 24.10.2018
 3. Letter No. PCB/HO/SEE2/SWM-TVM CORPN/2018 dated 09.01.2019
 4. Letter No. PCB/KO/G/51/09 dated 21/03/2019 from District Office, KSPCB, Kollam
 5. Letter No. PCB/RO/Kollam/MSW/2012 dated 26/03/2019 from Regional Office, KSPCB, Trivandrum
 6. Notice No. PCB/HO/EE4/NGT/SWM DIRECTIONS TO LB/2019 dated 17.04.2019
 7. The Hon'ble NGT order in OA No. 439/2013 and OA 456/2013 dated 09.10.2018, 07.01.2019, 11.12.2019 and 13.07.2020
 8. Letter No. PCB/KO/MSW/4/06 dated 04.09.2020 from Environmental Engineer, District Office, Kollam
 9. This office letter of even no. dated 24.09.2020

WHEREAS the Central Government notified the Environmental (Protection) Act, 1986 for the protection and improvement of environment and for matters connected therewith;

WHEREAS as per Section 3, 6, and 25 of the Environment (Protection) Act, 1986, the Central Government re-notified the Solid Wastes Management Rules, 2016 (herein after referred as SWM Rules) vide notification S.O. 1357(E) dated 8-4-2016;

WHEREAS as per Rule 22 (5) of the SWM Rules, door to door collection of segregated waste and its transportation in covered vehicles to processing or disposing facility shall be ensured by 8-4-2018;

WHEREAS as per Rule 22 (7) of the SWM Rules, solid waste processing facilities for the complete quantity of waste generated from the local body at 0.4 to 0.5 kg/person/day, shall be set up by 8-4-2018;

WHEREAS as per Rule 22 (6) of the SWM Rules, separate storage, collection and transportation of construction and demolition waste shall be provided by 08.04.2018;

WHEREAS repeated instructions were issued vide the communications read above, for the compliance of the SWM Rules vide ref. 2 to 5;

WHEREAS it is noted that you have not fully complied with the above provisions of the Rules;

WHEREAS the Hon'ble National Green Tribunal, Principal Bench, New Delhi in the order dated 22.11.2018 in O.A. No. 353/2016 clarified that apart from prosecution, the statutory authorities under the Environment (Protection) Act 1986, the Air (*Prevention and Control of Pollution*) Act, 1981 and the Water (*Prevention and Control of Pollution*) Act 1974, must, in exercise of their incidental powers, prescribed scale of compensation to be collected from the polluters on the "Polluters Pay's Principle" in such scale which may be laid down at various levels, having regard to the local condition or as per direction in the hierarchy of the authorities. In various other application also, the Hon'ble NGT passed similar orders. For instance, in the Order dated 20.11.2018 in O.A. No. 117/2014, 499/2014 and 102/2014 the Hon'ble NGT noted as; "Needless to say that statutory authorities under the Environment (Protection) Act 1986, the Air (*Prevention and Control of Pollution*) Act, 1981 and the Water (*Prevention and Control of Pollution*) Act 1974 are entitled to assess and recover damages as "Pollution Pays Principle" in exercise of incidental powers to protect environment";

WHEREAS the Board has issued notice vide ref. 6 above in view of the NGT Orders and in view of the responsibility of the Board under the Rule 16(a) to enforce SWM Rules 2016;

WHEREAS the Hon'ble NGT vide order in OA No. 439/2013(sz) dated 13.07.2020 directed the Kerala State Pollution Control Board to inspect the legacy waste dumping yard at Kureepuzha and submit a status report showing the real state of affairs including violations if any of non-implementation of provisions of the Solid Waste Management Rules, 2016 in Kollam Corporation and any damage that has been caused on account of the negligence, act of mismanagement of legacy waste and then to assess Environmental Compensation (EC), and take steps to realize the same from the defaulter.

WHEREAS based on the inspection conducted by the Board, environmental compensation was assessed for an amount of 889.28 lakhs for 665 days from 22/11/2018 to 17/09/2020 and the matter was informed vide ref. (9) above and hearing conducted vide Video Conference on 29/09/2020;

WHEREAS in the video conference conducted on 29/09/2020, it was instructed to submit action taken report for the treatment and disposal of both biodegradable and non-biodegradable waste from both households and establishments;

WHEREAS as per the order dated 02/11/2020 in OA No. 456/2013 (sz), and OA No. 439/2013 one more opportunity was given to Kollam Corporation to come up with corrected details;

WHEREAS based on the details submitted by the Secretary, Kollam Corporation, reassessment of environmental compensation was done from the District Office of the Board at Kollam and the assessment details are as follows;

Population (as per census 2011)	348657
Total waste generation (kg per person per day)	0.3

Waste Generation (TPD)	104.60
Dry waste disposed (dry waste collected by HKS)	25.563 TPD
Wet Waste disposed (house hold level + community level + informal waste collectors)	65.9TPD
Total waste disposed	91.463TPD
Waste Management Capacity Gap (TPD)	104.60 – 91.463= 13.137TPD
EC - Capital Cost Component (Rs in lakhs) (Min:100 & Max:1000)	2.4 x 13.137 = 31.529 (Taken as 100)
EC - O&M Component(Rs in lakhs/day) (Min: 0.1 & Max: 1)	0.02 x 13.137 = 0.263
Environmental Externality(Rs in lakhs/day) (Min: 0.05 & Max: 0.1)	5x13.137/100000= 0.0006; taken as 0.05
No. of days (N) (Taken as no. of days elapsed since 22.11.2018)	782
Environmental Compensation (Rs in lakhs)	100+0.263x 782+0.05 x 782 = 344.766

WHEREAS an amount of Rs. 344.766 Lakhs (Rupees Three hundred and forty four lakhs seven hundred sixty six thousand only) is assessed as environmental compensation from 22/11/2018 to 13/01/2021;

AND WHEREAS continued failure to comply with SWM 2016 shall incur Environmental compensation at rates that are multiples of the rates assessed above;

NOW THEREFORE, in exercise of the powers vested under section 5 of the Environment Protection Act, 1986, read with Government of India notification S.O. 327 (E) dated 10-4-2001 you are directed to show cause within 15 days as to why the Board shall not recover Environmental compensation for a period from 22/11/2018 to 13/01/2021 for the non compliance of the Solid Waste Management Rules, 2016;

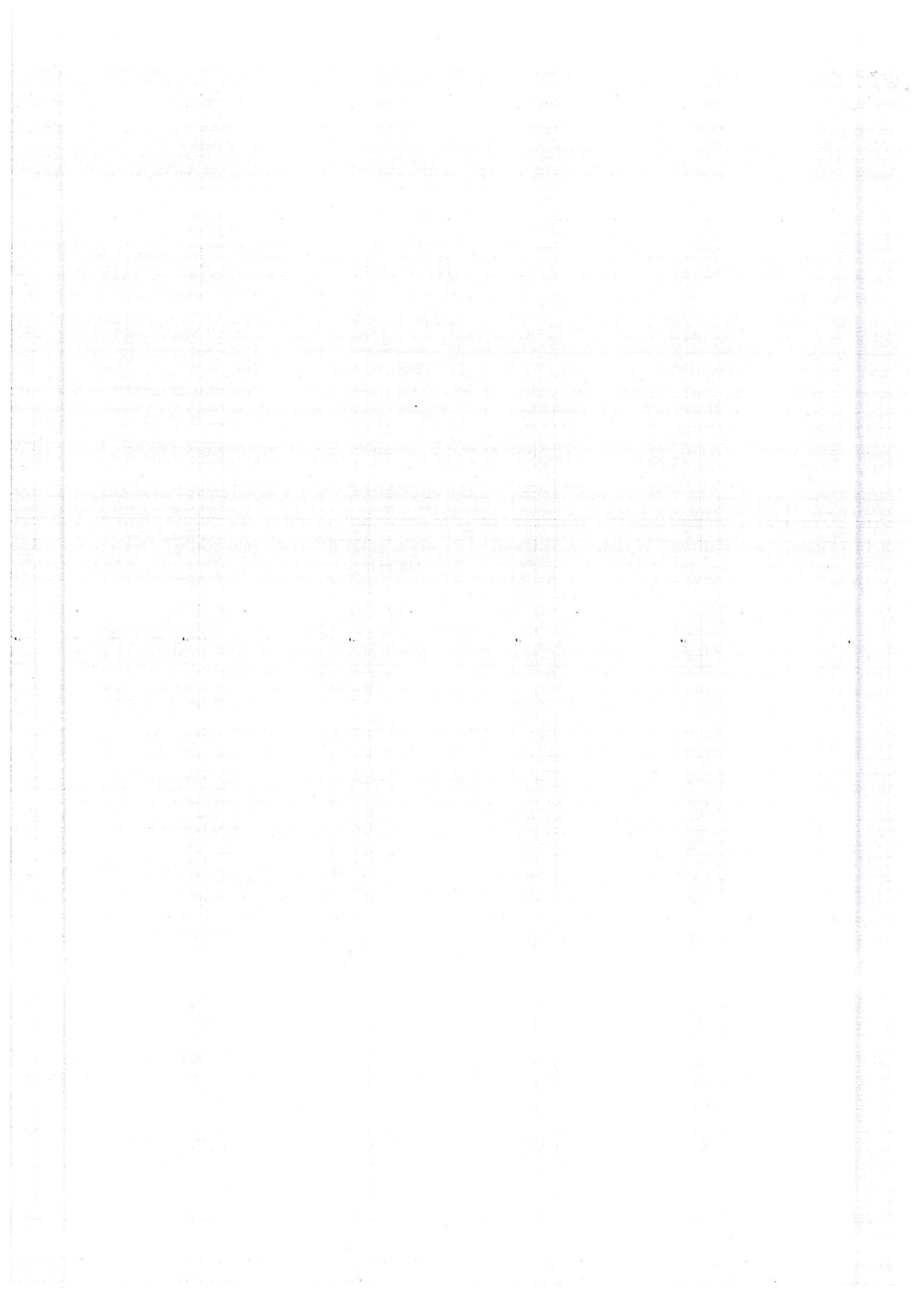

CHAIRMAN

To

The Secretary,
Kollam Corporation

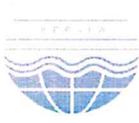
Copy to:

1. The Additional Chief Secretary
Local Self Government Department.
2. The District Collector, Kollam.
3. The Director, Urban Directorate.
4. The Chief Environmental Engineer, Regional Office, Thiruvananthapuram.
5. The Environmental Engineer, District Office, Kollam.



ANNEXURE 5

☎: 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



KERALASTATE POLLUTION CONTROL BOARD കരളസംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്

Pattom P.O., Thiruvananthapuram – 695 004
പട്ടം പി.ഒ., തിരുവനന്തപുരം - 695 004

PCB/HO/SEE2/KOCHI CORPN/2019

Date:15/10/2020

Regd. with A/D

NOTICE UNDER SECTION 5 OF THE ENVIRONMENTAL PROTECTION ACT, 1986

Sub: Non-compliance of Solid Waste Management Rules, 2016.

- Ref: 1. Order dated 23/10/2018 of the Hon'ble NGT in O.A. 533-535/2018
2. Order dated 9/11/2018 of the Hon'ble High Court in WP(c) No. 36204/2018(A)
3. Order dated 16/01/2019 in OA no. 606/2018
4. This office notice No. PCB/HO/RULES/SWM-ERNAKULAM/2018 dated 12/10/2019
5. Letter no. PCB/RO-EKM/GEN-221/19 dated 18/10/2019 from the Chief Environmental Engineer, Regional Office, Ernakulam
6. This office notice No. PCB/HO/SEE2/KOCHI CORPN/2019 dated 11/12/2019
7. Letter No. MOE2/10948/2017 dated 01/01/2020 and 06/01/2020 of Secretary, Kochi Corporation
8. Order dated 30/01/2020 in OA no. 442/2013 by the Hon'ble NGT.
9. Letter no. PCB/RO/EKM/GEN-258/19 dated 20/02/2020.
10. Minutes of the meeting on 16-3-2020 with the Secretary, Kochi Corporation
11. Minutes of the meeting on 17-3-2020
12. Order dated 03/07/2020 in OA no.514/2019
13. Letter No PCB/RO-EKM/GEN-258/19 D dated 23.07.2020 from the Chief Environmental Engineer, Regional office, Ernakulam
14. Minutes of the video conference held on 17/08/2020 with Secretary, Kochi Corporation and allied municipalities
15. Letter No. MOE2/10948/2017 dated 11/09/2020 of Secretary, Kochi Corporation.
16. Order dated 22/11/2018 in O.A. No. 353/2016
17. Order dated 20/11/2018 in O.A No. 117/2014, 499/2014 and 102/2014
18. Letter No PCB/RO-EKM/GEN-258/19 D dated 11/08/2020 from the Chief Environmental Engineer, Regional office, Ernakulam
19. Order dated 16/09/2020 in OA no.514/2019.

KERALA STATE POLLUTION
CONTROL BOARD
THIRUVANANTHAPURAM

16 OCT 2020

DESPATCHED

WHEREAS the Central Government notified the Environmental (Protection) Act, 1986 for the protection and improvement of environment and for matters connected therewith;

WHEREAS as per Section 3, 6, and 25 of the Environment (Protection) Act, 1986, the Central Government re-notified the Solid Wastes Management Rules, 2016 (hereinafter referred as SWM Rules) vide notification S.O. 1357(E) dated 8/4/2016;

WHEREAS as per Rule 22 (1) of the SWM Rules, suitable sites for setting up solid waste processing facilities are to be identified;

WHEREAS as per Rule 22(3) of the SWM Rules, suitable sites for setting up solid waste processing facility and sanitary landfill facilities are to be procured;

WHEREAS as per Rule 22 (5) of the SWM Rules, door to door collection of segregated waste and its transportation in covered vehicles to processing or disposing facility shall be ensured by 8-4-2019;

WHEREAS as per Rule 22 (7) of the SWM Rules, solid waste processing facilities for the complete quantity of waste generated from the local body at 0.4 to 0.5 kg/person/day, shall be set up by 8-4-2019;

WHEREAS facilities with the technologies specified in CPHEEO manual and SWM Rules are to be in place for the effective treatment and disposal of the solid waste generated in the local body;

WHEREAS as per Rule 22 (6) of the SWM Rules, separate storage, collection and transportation of construction and demolition waste shall be provided;

WHEREAS as per Rule 22(11) of the SWM Rules, bio-remediation or capping of old and abandoned dump site shall be ensured;

WHEREAS the Hon'ble NGT vide order dated 23/10/2018 read first above, ordered to complete the new integrated solid waste treatment processing plant in six months to commence the treatment of legacy waste, impose a penalty of Rs. 1 crore on Kochi Corporation and to deposit a performance guarantee of Rs. 3 crore with Kerala State Pollution Control Board and the Hon'ble High Court vide the order read 2nd above, ordered to place bank guarantee of Rs. 50 lakh each to Central Pollution Control Board and Kerala State Pollution Control Board and to exempt from depositing Rs. 3 crore towards bank guarantee and accordingly bank guarantee was placed by the Kochi Corporation;

WHEREAS during the second meeting on 15/3/2019 of the State Level Monitoring Committee constituted by the Hon'ble NGT vide the order under ref.3, resolutions were made to conduct bio mining of legacy waste part by part; keep ESCROW amount for handling emergency situation; provide adequate cover, leachate collection tank and log book for waste transporting vehicles and allow waste transportation only by those vehicles by Health Supervisor; engage Ex-service armed security at the segregation in the dump yard; to make the roads, NH Bypass, Sahodaran Ayyappan Road and Banerjee Road as Zero Waste road; to insist door to door collection and prohibit the deposition of waste on roads and other public places and insist for segregation of waste before disposal; ban the plastic carry bags below the prescribed limit and to proceed against violators under the law of penalization; to give adequate protective equipment namely gumboots, gloves, masks etc., proceed against the violators disposing sewage, septage and chicken waste in the water resources; apartments, hospitals, hospitals which are not operating their sewage treatment plants and to evolve methods for the effective disposal of plastics and not to dispose plastic by burning;

WHEREAS Chairman SLMC during their 4th meeting on 08/05/19 directed to submit specific detailed time bound action plan to the Kerala State Pollution Control Board, to adopt mechanized system for the disposal of legacy waste, to implement heavy fining, provide surveillance cameras/ strict squad to prevent waste dumping on roads, to insist on segregation of wastes at source, to transport vehicles with adequate cover, to provide proper leachate collection tank and logbook, to provide adequate personal protective equipments to workers and to compel

them to wear the same, to prohibit deposit of wastes on roads and other public places, to deploy haritha karma sena for door to door collection, to report on the action taken and to submit to the SLMC;

WHEREAS the fifth meeting of the State Level Monitoring Committee held on 14/06/2019, noticed with distress that a good number of directions issued are yet to be complied with and therefore expressed displeasure over the same and it was again directed to issue directions by the Corporation to the bulk generators to take steps to channelize their own wastes as the same is homogenous and clean, channelization can be done easily; to submit the details of wards, in which segregation is complete; segregated plastic waste for shredding is to be stored in areas attached to the zonal office of the Corporation; and to submit action plan in each ward for solid waste management, projects to be implemented and to improve the existing waste management facility, existing material collection facility and resource recovery facility; to publish the information on waste management in the website; to take legal action against open burning of non-biodegradable waste and dumping of waste in water bodies; to take steps to establish MCFs in all wards and RRF at least in six wards; issue identity card to all workers engaged in waste management and to prepare action plan for developing a business model for effective treatment of waste;

WHEREAS it is noted that you have not identified the land for managing Construction and Demolition waste and sanitary landfill;

WHEREAS noticed dated 12/10/2019 was issued vide reference 4th above for not taking steps to provide biomethanation plant for the food wastes generated within Kochi Corporation;

WHEREAS the Chief Environmental Engineer, Regional Office, Ernakulam vide the letter dated 18/10/2019 cited 5th above, reported about the improper functioning of solid waste plant including no action taken to install proper leachate treatment plant at the site;

WHEREAS the Board issued notice dated 11/12/2019 read 6th above to the Secretary, Kochi Corporation to show cause why the Environmental compensation of Rs. 1.122 Crore shall not be levied for not providing leachate treatment plant and the replies of the Kochi Corporation under ref. 7th above were ;

WHEREAS the Hon'ble National Green Tribunal vide the order read 8th above on 30-1-2020 directed that, on receipt of the explanation from the Corporation to the notice issued by Board, the Pollution Control Board is to pass appropriate orders and complete the proceedings initiated on the basis of their inspection and dispose of the same in accordance with law and come with compliance report before the Tribunal;

WHEREAS the Chief Environmental Engineer, Regional Office, Ernakulam in the report (ref. 9) dated 20/02/2020 to the Chairman, State Level Monitoring Committee, reported that the Corporation is not taking earnest steps to solve the issue which is a long pending case from the Corporation side and to assess environmental compensation as done on 18/10/2019;

WHEREAS the Chief Environmental Engineer, Regional Office, Ernakulam vide letter No. PCB/RO-EKM/GEN-258/2019 dated 28-2-2020 reported that the Corporation is allowing five municipalities and two grama panchayaths to bring their biodegradable waste in addition to Corporation's biodegradable waste and non biodegradable waste and the total actual quantity of waste estimated as 365.19TPD;

WHEREAS on receiving the reply from the Secretary, Kochi Corporation, hearing was conducted with the Secretary, Kochi Corporation on 16/3/2020 vide ref., 10 and 11 and reported

status to the NGT;

WHEREAS the Hon'ble NGT on 3/7/2020 in OA514/2019 (ref. 12) observed the delay in setting up of waste to energy plant and was doubtful whether leachate can be treated in an ordinary septage treatment plant as it contains heavy metals and the tribunal also observed that the progress appears to be very slow and in disregard to the statutory and constitutional obligation of providing clean environment;

WHEREAS it was reported by the Chief Environmental Engineer, Regional office Ernakulam vide letter No. PCB/RO-EKM/GEN-221/19 dated 23/07/2020 (ref. 13) reported that during the inspection conducted by the Board on various occasions, it was noticed that

- a) The facilities provided for the treatment and disposal of solid waste provided at Brahmapuram are not maintained properly;
- b) The windrow composting shed is in dilapidated condition and the mixed solid waste including plastic waste is dumped in the yard in open condition;
- c) The manure produced seems to be marginal compared to the daily waste collected at the plant;
- d) Manure produced did not meet the fertilizer standard as per the SWM Rule, 2016 and contain heavy metals;
- e) Due to the unscientific treatment of biodegradable solid waste, huge quantity of rejects have dumped at various places and which in turn got converted to legacy waste;
- f) Fire accident were occurred in the legacy waste dump yard at Brahmapuram 3 or 4 times during the period of 2019 and 2020 which lead to air pollution in and around the dump site
- g) Leachate from the windrow composting shed and the biodegradable solid waste dumping area is not collected and treated properly due to improper drains and there are chances of leachate reaches the Kadambayar river, one of the polluted river stretch identified by CPCB;
- h) The leachate treatment plant provided prior to the visit of Regional Monitoring Committee (RMC) appointed by the Hon'ble NGT is not operational now;
- i) During the inspection conducted on 16.07.2020 it was noticed that no progress in the installation of leachate treatment plant except the construction of a new collection tank having capacity of 100 m³ on which the Hon'ble Court made adverse remarks ;
- j) No effective steps were taken for construction activities for the installation of waste to energy plant and for the removal of legacy waste. The Corporation authorities are still not able to assess the quantum of legacy waste settled there;

WHEREAS hearing was conducted by the Chairman on 17/8/2020 with the Kochi Corporation (ref. 14) and accordingly details were submitted by you vide the letter under ref. 15;

WHEREAS from the above observations, it is noted that you have not fully complied with the directions of Hon'ble SLMC, provisions of Solid Waste Management Rules, 2016 and also not obtained authorization under SWM Rules, 2016;

WHEREAS the Hon'ble National Green Tribunal, Principal Bench, New Delhi in the order dated 22/11/2018 in O.A. No. 353/2016 (ref. 16) clarified that apart from prosecution, the statutory authorities under the Environment (Protection) Act, 1986, the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974, must, in exercise of their incidental powers, prescribed scale of compensation to be collected from the

polluters on the “Polluter Pay’s Principle”. Such scale which may be laid down at various levels, having regard to the local condition or as per direction in the hierarchy of the authorities;

WHEREAS in various other application also, the Hon’ble NGT passed similar orders, for instance, in the Order dated 20/11/2018 in O.A No. 117/2014, 499/2014 and 102/2014 (ref. 17) the Hon’ble NGT noted as; “Needless to say that statutory authorities under the Environment (Protection) Act, 1986, Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974 are entitled to assess and recover damages as “Polluter Pay’s Principle” in exercise of incidental powers to protect environment”.

WHEREAS as per Hon’ble NGT order dated 23/09/2019 in O.A 585/2018, if the rules are violated, the Pollution Control Board can independently proceed against local bodies who are not complying with the rules including initiation of prosecution of those persons who are not complying with the same and assessment of damage caused to the Environment;

WHEREAS the Hon’ble NGT vide order dated 16/9/2020 in OA 514/2018 (ref. 19), observed the failure in taking effective steps on the matter;

AND WHEREAS the Chief Environmental Engineer, Regional Office, Ernakulummade recommendation for levying Environmental Compensation against Kochi Corporation and forwarded the following assessment details vide the letter dated 11/8/2020 cited 18th above;

City	Kochi Corporation
Population(2011)	6,77,381
Class	Class I
Waste generation (kg per person per day)	-
Waste generation (TPD)	315.96
Waste disposed as per Rules (TPD)	31.60
Waste Management Capacity Gap(TPD)	284.36
Calculated EC(capital cost component) in lakhs, Rs.	682.47
Minimum and Maximum values of EC (Capital cost component) recommended by the Committee (lakhs, Rs.)	Min. 100 Max. 1000
Final EC (capital cost component) in lakhs, Rs.	682.47
Calculated EC (O&M component) in lakhs, Rs./day	5.69
Minimum and maximum values of EC (O&M cost component) recommended by the Committee	Min. 0.1 Max. 1.0
Final EC(O&M component) in lakhs, Rs./day	1.00
Calculated Environmental Externality (lakhs Rs./day)	0.01
Minimum and maximum values of Envriionmetnal Externality recommended by the committee(lakhs, Rs./day)	Min. 0.05 Max.0.1

Final Environmental Externality (Rs. Per day)	0.05
EC to be collected (Rs. in lakhs from 22/11/2018 to 30/9/2020 i.e.679 days)	1395.42

NOW THEREFORE, in exercise of the powers vested under Section 5 of the Environment Protection Act 1986, read with Government of India Notification S.O. 327(E) dated 10/04/2001, you are directed to show cause within 15 days of receipt of this notice, why the Board shall not recover Environmental Compensation of Rs. 1395.42 lakhs (Rupees One thousand three hundred and ninety five lakhs and forty two thousand only) from 22/11/2018 to 30/09/2020 towards the noncompliance of Solid Waste Management Rules, 2016.


CHAIRMAN

To

The Secretary,
Kochi Corporation

Copy to:

1. The Chairman
State Level Monitoring Committee with C/L
2. The Additional Chief Secretary
Local Self Government Department with C/L
3. The Principal Secretary
Environment Department with C/L
4. The District Collector, Ernakulam
5. The Director, Urban Directorate
6. The Chief Environmental Engineer, Regional Office, Ernakulam
7. The Environmental Engineer, District Office 1 and 2, Ernakulam

ANNEXURE 6

☎: 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



KERALASTATE POLLUTION CONTROL BOARD **കേരളസംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്**

Pattom P.O., Thiruvananthapuram – 695 004

പട്ടം പി.ഒ., തിരുവനന്തപുരം - 695 004

PCB/HO/SEE-2 /SWM- KASARAGOD /2018

Date: 20/01/2021

Regd. with A/D

SHOWCAUSE NOTICE

Sub: Non-compliance of Solid Waste Management Rules, 2016.

- Ref:
1. The Hon'ble NGT Order dated 16/01/2019, 25/04/2019 & 02/07/2020 in OA No. 606/2018
 2. Letter No. PCB/KSRD/MSW/909/2001 dated 28/05/2019 from District Office Kasaragod
 3. Showcause Notice No. PCB/KSRD/MSW/909/2001 dated 03/08/2019 from Regional Office Kozhikode.
 4. Letter No.P.H2-14162/19 dated 20/08/2019 from Kasaragod Municipality
 5. Showcause Notice No. PCB/KSRD/MSW/909/2001 dated 17/10/2019 from Regional Office Kozhikode
 6. Letter No. PCB/KSRD/MSW/909/2001 dated 10/12/2019 from District Office, Kasaragod
 7. Letter No. PCB/KSRD/COMP/KASARGOD/2019 dated 13/01/2020 from District Office, Kasaragod
 8. Showcause Notice No. PCB/KSRD/MSW/909/2001 dated 14/01/2020 from District Office, Kasaragod.
 9. Video Conference held on 04/09/2020 from the Chairman, Kerala State Pollution Control Board with Secretary, Kasaragod Municipality.
 10. Letter No PH2-10916/2020 dated 07/08/2020 & 11/09/2020 from Secretary, Kasaragod Municipality.
 11. Letter No. PCB/KSRD/G/EC/142/2019 dated 17/11/2020 from District Office, Kasaragod.

WHEREAS the Central Government notified the Environmental (Protection) Act, 1986 for the protection and improvement of environment and for matters connected therewith;

WHEREAS as per Section 3, 6, and 25 of the Environment (Protection) Act, 1986, the Central Government re-notified the Solid Wastes Management Rules, 2016 (hereinafter referred as SWM Rules) vide notification S.O. 1357(E) dated 8-4-2016;

WHEREAS as per Rule 22 (1) of the SWM Rules, suitable sites for setting up solid waste processing facilities are to be identified by 8-4-2017;

WHEREAS as per Rule 22 (2) of the SWM Rules, 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 by 8-4-2017;

WHEREAS as per Rule 22 (3) of the SWM Rules, suitable sites for setting up solid waste processing facility and sanitary landfill facilities are to be procured by 8-4-2018;

WHEREAS as per Rule 22 (4) of the SWM Rules, the practice of segregation of bio degradable, recyclable, combustible, sanitary waste, domestic hazardous and inert solid waste shall be ensured at source for waste generators at source by 8-4-2018;

WHEREAS as per Rule 22 (5) of the SWM Rules, door to door collection of segregated waste and its transportation in covered vehicles to processing or disposing facility shall be ensured by 8-4-2018;

WHEREAS as per Rule 22 (6) of the SWM Rules, separate storage, collection and transportation of construction and demolition waste shall be ensured by 8-4-2018;

WHEREAS as per Rule 22 (7) & Rule 22(8) of the SWM Rules, solid waste processing facilities for the complete quantity of waste generated from the local body at 0.4 to 0.5 kg/person/day, shall be set up by 8-4-2019;

WHEREAS facilities with the technologies specified in CPHEEO manual and SWM Rules are to be in place for the effective treatment and disposal of the solid waste generated in the local body;

WHEREAS as per Rule 22 (11) of the SWM Rules, bio-remediation or capping of old and abandoned dump site shall be ensured;

WHEREAS repeated instructions were issued to the local body for the compliance of the SWM Rules;

WHEREAS during the inspection conducted on 15-5-2019 based on the application for authorization under SWM Rules submitted by the Kasargod Municipality, it was observed that plastic shredding unit was not functional and the incinerator plant is in a dilapidated condition and hence instructions were issued vide letter no. letter No. PCB/KSRD/MSW/909/2001 dated 28/05/2019 from District Office Kasaragod;

WHEREAS as there was no reply to the said instructions, show cause notice was issued from Regional Office of the Board at Kozhikode for not complying with the directions, but its reply was not satisfactory;

WHEREAS during the further inspection from the District Office on 27-11-2019 and on 05/12/2019 to the waste disposal facility of Kasaragod Municipality, it was observed that the plastic waste collected were being burnt in the incinerator whose chimney was broken at the neck of the chamber itself; plastic wastes were not processed; old wastes mostly plastic wastes were dumped in the area, and no MRFs and MCFs existed for the local body and recommended for levying environmental compensation vide the letter No. PCB/KSRD/MSW/909/2001 dated 10/12/2019 from District Office, Kasaragod;

WHEREAS show cause was again issued vide notice No. PCB/KSRD/MSW/909/2001 dated 09/01/2020 to the Kasargod Municipality for non compliance of SWM Rules and the reply was not satisfactory;

WHEREAS hearing was conducted by the undersigned with the Kasargod Municipality on 04/09/2020 and instructed to comply with the provisions of SWM Rules and the details submitted by Letter no. PH2-10916/2020 dated 11/09/2020 was not satisfactory and also noted that waste from hotels and establishments are taken to pig farm which is violation of SWM Rules;

WHEREAS as per order dated 25/04/2019 in OA 606/2018, the time limit for compliance of environmental statutes by the local bodies elapsed on 24/04/2020;

WHEREAS the Hon'ble National Green Tribunal vide dated 02/07/2020 in OA 606/2018 laid down compensation scale for continued failure in implementation of Solid Waste Management Rules 2016, after 31-3-2020 and reiterated that the compliance of the rules requires taking of several steps in Rule 22, from serial no. 1 to 10 and the Court directed that any such continued failure will result in liability of every local body to pay compensation at the rate of Rs. 10 lakhs per month per local body for population above 10 lakhs; Rs. 5 lakhs per month per local body for population between 5 lakhs and 10 lakhs and Rs. 1 lakh per month per other local body from 01/04/2020 till compliance and final compensation may be assessed and recovered by the State PCB/PCCs in the light of the above order;

WHEREAS as per the said direction of Hon'ble NGT, template for the assessment of final compensation for non compliance of solid waste management by urban local bodies has been prepared and forwarded to SPCBs by CPCB;

WHEREAS as per the CPCB template, the local body shall be liable to pay compensation if there is any gap in the solid waste generated and treated; there is no cent percent door to door collection; there is no segregation of waste; segregated waste is not transported in covered vehicle; there is no adequate material recovery facility, plastic waste recycling facility, composting, biomethanation, RDF, WtE plant and not carried out legacy waste management;

WHEREAS Environmental Engineer, District Office, Kasaragod vide letter No. PCB/KSRD/G/EC/142/2019 dated 17/11/2020, reported that during their inspection on 04/11/2020, the Municipality had not achieved cent percent door to door collection of waste from many commercial and residential areas like Bank Road, Adkathbail etc and a lot of wastes were seen dumped near the road side behind Government Hospital in municipality area;

WHEREAS it was reported that as per the annual report submitted by municipality, the quantity of waste collected was 3TPD, but the Municipality was processing dry waste of 1.5TPD and the remaining waste of 1.5TPD was not processed which shows that the facility provided is not adequate;

WHEREAS as per the report submitted by the municipality, the required capacity for composting is 3.8 TPD, but the Municipality had provided 749 pipe composts and 238 compost pits with a total capacity of 2.3 TPD of waste and the remaining waste of 1.5 TPD was not processed, which shows that the facility provided is not adequate;

WHEREAS the Municipality is not practicing bio-methanation;

WHEREAS the Municipality has not provided RDF facility, no waste was supplied for co-incineration in cement plant and waste to energy plant and secured landfill was not setup as per Rules;

WHEREAS it is noted that there is gap in solid waste management; there is no cent percent door to door collection; there is no segregation of waste; segregated waste is not transported in covered vehicle; non adequacy of material recovery facility, resource recovery facility, waste recycling facility, composting, biomethanation, RDF, and WtE plant and not carried out legacy waste management;

WHEREAS the continued failure to comply with SWM Rules. 2016 is still continuing in the Kasargod Municipality and is liable to the compensation as per the order dated 02/07/2020 of the Hon'ble NGT in OA 606/2018 and the Environmental Engineer suggested for levying environmental compensation for the failure of the Municipality;

AND WHEREAS on account of this an amount Rs 8 Lakhs is assessed as Environmental Compensation for eight months, from 01.04.2020 to 30.11.2020 at the rate of 1 lakh per month;

NOW THEREFORE, in exercise of the powers vested under section 5 of the Environment Protection Act, 1986, read with Government of India notification S.O. 327 (E) dated 10/04/2001 you are directed to show cause within 15 days as to why the Board shall not recover Environmental compensation of Rs.8 Lakhs (Rupees Eight Lakh only) calculated for a period from 01/04/2020 to

30/11/2020 against the Municipality for the non compliance of the SWM Rules 2016 especially of Rule 22 of the SWM Rules, 2016.


CHAIRMAN

To
The Secretary,
Kasaragod Municipality

Copy to:

1. The Chairman
State Level Monitoring Committee
2. The Additional Chief Secretary
Local Self Government Department
3. The District Collector, Kasargod
4. The Director, Urban Directorate
5. The Chief Environmental Engineer, Regional Office, Kozhikod
6. The Environmental Engineer, District Office, Kasargod

ANNEXURE 7

☎ : 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



KERALASTATE POLLUTION CONTROL BOARD

കേരളസംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്

Pattom P.O., Thiruvananthapuram - 695 004

പട്ടം പി.ഒ., തിരുവനന്തപുരം - 695 004

PCB/HO/SEE2/Thrikkakara Municipality/2019

Date: 18/02/2021

Regd. with A/D

SHOW CAUSE NOTICE ISSUED UNDER SECTION 5 OF THE ENVIRONMENTAL (PROTECTION) ACT, 1986

Sub: Non-compliance of Solid Waste Management Rules, 2016 - Thrikkakara Municipality.

- Ref:
1. The Hon'ble NGT order dated 20/11/2018 in O.A No. 117/2014, 499/2014 and 102/2014
 2. The Hon'ble NGT order dated 22/11/2018 in O.A. No. 353/2016
 3. The Hon'ble NGT order dated 16/01/2019 and 25/04/2019 in OA no. 606/2018.
 4. This office letter No. PCB/HO/Rules/SWM-Ernakulam/2018 dated 13/02/2019 and 04/04/2019.
 5. Your letter No. H2-4958/19 dated 12/06/2019
 6. Letter No. PCB/RO-EKM/NEW-97/12 dated 22.5.19 from CEE, RO, Ernakulam
 7. Notice of even number dated 12.10.19
 8. Minutes of Video Conference held on 19/11/2020.
 9. Letter No. PCB/RO-EKM/GEN-258/19 dated 10/01/2021

WHEREAS the Central Government notified the Environmental (Protection) Act, 1986 for the protection and improvement of environment and for matters connected therewith;

WHEREAS as per Section 3, 6, and 25 of the Environment (Protection) Act, 1986, the Central Government re-notified the Solid Wastes Management Rules, 2016 herein after referred as SWM Rules) vide notification S.O. 1357(E) dated 8-4-2016;

WHEREAS as per Rule 22 (1) of the SWM Rules, suitable sites for setting up solid waste processing facilities are to be identified;

WHEREAS as per Rule 22(3) of the SWM Rules, suitable sites for setting up solid waste processing facility and sanitary landfill facilities are to be procured;

WHEREAS as per Rule 22 (5) of the SWM Rules, door to door collection of segregated waste and its transportation in covered vehicles to processing or disposing facility shall be ensured by 8-4-2018;

WHEREAS as per Rule 22 (7) of the SWM Rules, solid waste processing facilities for the complete quantity of waste generated from the local body at 0.4 to 0.5 kg/person/day, shall be set up by 8-4-2019;

WHEREAS facilities with the technologies specified in CPHEEO manual and SWM Rules are to be in place for the effective treatment and disposal of the solid waste generated in the local body;

WHEREAS as per Rule 22 (6) of the SWM Rules, separate storage, collection and transportation of construction and demolition waste shall be provided;

WHEREAS as per Rule 22 (11) of the SWM Rules, bio-remediation or capping of old and abandoned dump site shall be ensured;

WHEREAS as per NGT order dated 25.04.2019 in O.A. 606/2018 (ref.1 above), all environmental institutions are to be complied by the model city/town/village by 25.10.2019 and all other local bodies by 25.04.2020;

WHEREAS repeated instructions were issued including the communication reads 4th and 6th above, for the compliance of the SWM Rules;

WHEREAS it is pointed out vide the letter cited 6th above that you had been continuously violating the rules by evading from adopting suitable measures for Solid Waste Management;

WHEREAS the Board issued direction vide communication read 7th to take step to provide bio-methanation plant for the waste generated within Thrikkakara Municipality;

WHEREAS in the meeting held on 19/11/2020 through video conference with Thrikkakara Municipality, Chief Environmental Engineer, Regional Office had been directed vide ref.8 to submit a detailed report in Solid Waste Management;

WHEREAS it is noted vide ref. (9) that you are still disposing biodegradable waste to the Brahmapuram plant which is in dilapidated condition;

WHEREAS it is noted vide ref. (9) that you are disposing non-biodegradable waste to the hazardous landfill of KEIL, which is meant for the disposal of Hazardous Wastes as per Hazardous Waste Management Rule and is against the rule;

WHEREAS the Hon'ble National Green Tribunal, Principal Bench, New Delhi in the order dated 22/11/2018 in O.A. No. 353/2016 clarified that apart from prosecution, the statutory authorities under the Environment (Protection) Act, 1986, the Air (Prevention and Control of Pollution) Act, 1981 and the Water (*Prevention and Control of Pollution*) Act, 1974, must, in exercise of their incidental powers, prescribed scale of compensation to be collected from the polluters on the "Polluter Pay's Principle". Such scale which may be laid down at various levels, having regard to the local condition or as per direction in the hierarchy of the authorities. In various other application also, the Hon'ble NGT passed similar orders, for instance, in the Order dated 20/11/2018 in O.A No. 117/2014, 499/2014 and 102/2014 the Hon'ble NGT noted as; "Needless to say that statutory authorities under the Environment (Protection) Act, 1986, Air (Prevention and Control of Pollution) Act, 1981 and the Water (*Prevention and Control of Pollution*) Act, 1974 are entitled to assess and recover damages as "Polluter Pay's Principle" in exercise of incidental powers to protect environment".

WHEREAS the Chief Environmental Engineer, Regional Office, Ernakulum made assessment for levying Environmental Compensation, details of assessment were furnished vide letter No.PCB/RO-EKM/GEN-258/19 dated 10/01/2021 (Ref.9 above) as follows for the non compliance of the Solid Waste Management Rules, 2016;

Population(2011)	77,319
Class	Class II
Total waste generation (kg per person per day)	0.3

Waste generation (TPD)	23.20
Waste disposed as per Rules (TPD)	2.32
Waste Management Capacity Gap(TPD)	23.2-2.32=20.88
EC - Capital Cost Component (Rs in lakhs) (Min:100 & Max:1000)	20.88x2.4=50.112 (Taken as 100)
EC - O&M Component(Rs in lakhs/day) (Min: 0.1 & Max: 1)	0.02x20.88=0.4176 ≈0.42
Environmental Externality(Rs in lakhs/day) (Min: 0.05 & Max: 0.1)	5x20.88/100000=.001 (Taken as 0.05)
No. of days (N) (Taken as days from 09.04.2019 to 31.12.2020)	663
Environmental Compensation (Rs in lakhs) (09/04/2019 to 31/12/2020)	100+0.42x663+0.05x 663=411.61

AND WHEREAS an amount of **Rs. 411.61 lakhs (Rupees Four hundred eleven lakh and sixty one thousand only)** is assessed as environmental compensation from 09/04/2019 to 31/12/2020 against you for the non-compliance of the Solid Waste Management Rules, 2016;

NOW THEREFORE, in exercise of the powers vested under Section 5 of the Environment Protection Act, 1986, read with Government of India Notification S.O. 327(E) dated 10/04/2021 you are directed to show cause within 15 days of receipt of this notice as to why the Board shall not recover Environmental Compensation of **Rs. 411.61 lakhs (Rupees Four hundred eleven lakh and sixty one thousand only)** from 09/04/2019 to 31/12/2020 against you for the non-compliance of Rule 22 of the SWM Rules, 2016.


CHAIRMAN

To
The Secretary,
Thrikkakara Municipality

Copy to:

1. The Chairman
State Level Monitoring Committee.
2. The Additional Chief Secretary
Local Self Government Department.
3. The District Collector, Ernakulam.
4. The Director, Urban Directorate.
5. The Chief Environmental Engineer, Regional Office, Ernakulam.
6. The Environmental Engineer, District Office, Ernakulam.

ANNEXURE 8

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

കേരളസംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്

Pattom P.O., Thiruvananthapuram – 695 004

പട്ടം പി.ഒ., തിരുവനന്തപുരം - 695 004

PCB/HO/RULES/SWM - ERNAKULAM/2018

Date: 08/02/2021

Regd. with A/D

SHOW CAUSE NOTICE ISSUED UNDER SECTION 5 OF THE ENVIRONMENTAL (PROTECTION) ACT, 1986

Sub: Non-compliance of Solid Waste Management Rules, 2016.

- Ref: 1. The Hon'ble NGT order dated 20/11/2018 in O.A No. 117/2014, 499/2014 and 102/2014.
2. The Hon'ble NGT order dated 22/11/2018 in O.A. No. 353/2016.
3. The Hon'ble NGT order dated 16/01/2019 and 25/04/2019 in OA no. 606/2018.
4. Your letter no. PH-14345/81 dated 15/03/2019
5. Letter No. PCB/RO-EKM/NEW-97/12 dated 22.5.19 from CEE,RO, Ernakulam
6. Notice of even number dated 12.10.19
7. Minutes of Video Conference held on 19/11/2020.
8. Letter No. PCB/RO-EKM/GEN-258/19 dated 10/01/2021.

WHEREAS the Central Government notified the Environmental (Protection) Act, 1986 for the protection and improvement of environment and for matters connected therewith;

WHEREAS as per Section 3, 6, and 25 of the Environment (Protection) Act, 1986, the Central Government re-notified the Solid Wastes Management Rules, 2016 hereinafter referred as SWM Rules) vide notification S.O. 1357(E) dated 8-4-2016;

WHEREAS as per Rule 22 (1) of the SWM Rules, suitable sites for setting up solid waste processing facilities are to be identified;

WHEREAS as per Rule 22(3) of the SWM Rules, suitable sites for setting up solid waste processing facility and sanitary landfill facilities are to be procured;

WHEREAS as per Rule 22 (5) of the SWM Rules, door to door collection of segregated waste and its transportation in covered vehicles to processing or disposing facility shall be ensured by 8-4-2018;

WHEREAS as per Rule 22 (7) of the SWM Rules, solid waste processing facilities for the complete quantity of waste generated from the local body at 0.4 to 0.5 kg/person/day, shall be set up by 8-4-2019;

WHEREAS facilities with the technologies specified in CPHEEO manual and SWM Rules are to be in place for the effective treatment and disposal of the solid waste generated in the local body;

WHEREAS as per Rule 22 (6) of the SWM Rules, separate storage, collection and transportation of construction and demolition waste shall be provided;

WHEREAS as per Rule 22 (11) of the SWM Rules, bio-remediation or capping of old and abandoned dump site shall be ensured;

WHEREAS as per NGT order dated 25.04.2019 in O.A. 606/2018 (ref.1 above), all environmental statutes are to be complied by the model city/town/village by 25.10.2019 and all other local bodies by 25.04.2020;

WHEREAS repeated instructions were issued including the communication read 5th above, for the compliance of the SWM Rules;

WHEREAS it is pointed out vide the letter cited 5th above that you had been continuously violating the rules by evading from adopting suitable measures for Solid Waste Management;

WHEREAS the Board issued direction vide communication read 6th to take step to provide bio-methanation plant for the waste generated within Thrippunithura Municipality;

WHEREAS it is noted vide ref. (8) that you are still disposing biodegradable waste to the Brahmapuram plant which is in dilapidated condition;

WHEREAS it is noted vide ref. (8) that you are disposing non-biodegradable waste to the hazardous landfill of KEIL, which is meant for the disposal of Hazardous Wastes as per Hazardous Waste Management Rule and is against the rule;

WHEREAS in the meeting held on 19/11/2020 through video conference with Municipality, Chief Environmental Engineer, Regional Office had been directed to submit a detailed report in Solid Waste Management;

WHEREAS the Hon'ble National Green Tribunal, Principal Bench, New Delhi in the order dated 22/11/2018 in O.A. No. 353/2016 clarified that apart from prosecution, the statutory authorities under the Environment (Protection) Act, 1986, the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974, must, in exercise of their incidental powers, prescribed scale of compensation to be collected from the polluters on the "Polluter Pay's Principle". Such scale which may be laid down at various levels, having regard to the local condition or as per direction in the hierarchy of the authorities. In various other application also, the Hon'ble NGT passed similar orders, for instance, in the Order dated 20/11/2018 in O.A No. 117/2014, 499/2014 and 102/2014 the Hon'ble NGT noted as; "Needless to say that statutory authorities under the Environment (Protection) Act, 1986, Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974 are entitled to assess and recover damages as "Polluter Pay's Principle" in exercise of incidental powers to protect environment".

WHEREAS the Chief Environmental Engineer, Regional Office, Ernakulum made assessment for levying Environmental Compensation, details of assessment were furnished vide letter No.PCB/RO-EKM/GEN-258/19 dated 10/01/2021(Ref.8 above) as follows for the non compliance with the Solid Waste Management Rules, 2016;

Population(2011)	69,390
Class	Class II
Total waste generation (kg per person per day)	0.3
Waste generation (TPD)	20.82

Waste disposed as per Rules (TPD)	2.08
Waste Management Capacity Gap(TPD)	20.82-2.08=18.74
EC - Capital Cost Component (Rs in lakhs) (Min:100 & Max:1000)	2.4x18.74=44.96 (Taken as 100)
EC - O&M Component(Rs in lakhs/day) (Min: 0.1 & Max: 1)	0.02x18.74=0.37
Environmental Externality(Rs in lakhs/day) (Min: 0.05 & Max: 0.1)	5x18.74/100000=0.009 (Taken as 0.05)
No. of days (N) (Taken as days from 09.04.2019 to 31.12.2020)	663
Environmental Compensation (Rs in lakhs)	100+0.37x663+0.05x 663=378.46

ANDWHEREAS an amount of **Rs. 378.46 lakhs (Rupees Three hundred seventy eight lakh and forty six thousand only)** is assessed as environmental compensation from 09/04/2019 to 31/12/2020 against you for the non-compliance of the Solid Waste Management Rules, 2016;

NOW THEREFORE, in exercise of the powers vested under Section 5 of the Environment Protection Act, 1986, read with Government of India Notification S.O. 327(E) dated 10/04/2020 you are directed to show cause within 15 days as to why the Board shall not recover Environmental Compensation of Rs. 378.46 lakhs (Rupees Three hundred seventy eight lakh and forty six thousand only) from 09/04/2019 to 31/12/2020 from you for the non-compliance of Rule 22 of the SWM Rules, 2016.


CHAIRMAN

To

The Secretary
Thrippunithura Municipality

Copy to:

1. The Chairman
State Level Monitoring Committee.
2. The Additional Chief Secretary
Local Self Government Department.
3. The District Collector, Ernakulam.
4. The Director, Urban Directorate.
5. The Chief Environmental Engineer, Regional Office, Ernakulam.
6. The Environmental Engineer, District Office, Ernakulam.