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KERALASTATE POLLUTION CONTROL BOARD

Pattom P.O., Thiruvananthapuram – 695 004

PCB/HO/EE3/NGT/673/2018/VOL-VIII/02/2021 Date: 20/05/2021

From

The Member Secretary

To

The Secretary
Ministry of Jal Shakthi,
Department of Water Resources, River Development &
Ganga Rejuvenation, Shram Shakti Bhawan,
Rafi Marg, New Delhi -110001

Sub:- Forwarding Monthly Progress Report for the month of April 2021-reg.

Ref:-Order of the Hon'ble NGT in the matter of O.A.No. 673/2018

Sir,

This has reference to the above. The report prepared in revised format with respect to the progress of the implementation of action plan of 21 polluted river stretches, for the month of April 2021is submitted herewith.

It may kindly be noted that due to the outbreak of covid-19 pandemic and the exponential increase in number of positive cases had forced the Government to impose restrictions and lockdowns, hence the incremental improvements in majority of the works could not be facilitated.

Yours faithfully,

Sd/-

MEMBER SECRETARY

Encl: As above

National Mission for Clean Ganga
Format for submission of Monthly Progress Report in the NGT Matter OA No. 673 of 2018 (in compliance to NGT order dated 24.09.2020)

For the State of Kerala

Overall status of the State:

I. 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.

II. Estimated Sewage Generation (MLD):

A draft dossier on Sewage and Sullage generation in the State of Kerala has been prepared by the Board. Based on the draft report:

- Estimate Sewage and Sullage generation in Urban area - 1058 MLD (Sewage – 317 MLD, Sullage- 741 MLD)
- Estimate Sewage and Sullage generation in Rural area - 2917 MLD (Sewage – 875 MLD, Sullage- 2042 MLD)
- Total Sewage and Sullage generation – 3975 MLD (Sewage – 1192 MLD, Sullage- 2783 MLD)

III. Details of Sewage Treatment Plant:

- Existing no. of common STPs/FSTPs: 16 common STPs and 3 common FSTPs
- No. of functional common STPs in the state: 15
- 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: 124.42 MLD
- Total septage treatment capacity in the state through existing common FSTPs: 0.21 MLD
- Sewage treatment capacity via individual STPs in establishments: 69 MLD
- Treatment of sewage by septic tank- soak pit (Individual residences) -1011 MLD
- Gap in treatment of sewage: 56.37 MLD
- (STPs are being planned for Irinjalakkuda Municipality, Thripunithura Municipality, Thikkakkara Municipality, additional STP requirement for 60 crores for Thiruvanathapuram 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

utilization of 107 MLD plant at Muttathara, Thiruvananthapuram are also being proposed)

- (FSTPs are being planned for Irinjalakkuda Municipality, Chengannur Municipality and Thiruvalla Municipality)
- STPs completed as per the Action Plan submitted – 1) STP of capacity 0.01 MLD at Kumarichantha, Thiruvananthapuram 2) STP of capacity 0.03 MLD at Tirur Municipal Bus Stand, Malappuram.
- Institutional level sewage/ septage treatment plant details received from Suchitwa Mission, Local Self Government Department, has additionally included in the MPR (2 existing STP details, 8 ETPs /STPs under construction and 26 ETPs /STPs proposed in the State).

Details of existing STPs/ Common STPs/ common Septage treatment plants in the State:

Sl. No.	**City/Town**	**STP location**	**Status**	**STP Installed capacity**	**Utilization**	**Process**
1	Thiruvananthapuram**(PRS)**	Common Sewage Treatment Plant, Muttathara, Trivandrum maintained by Kerala Water Authority	Operational (Parameters complied with standards stipulated except for TSS)	107 MLD	80 MLD	ASP
	(PRS)	STP at Kumarichanda	Operational	0.01MLD	0.01 MLD	Bio membrane bioreactor Technology
2	Pathanamthitta	Sewage Treatment Plant at Sannidhanam (5MLD) Maintained by Travancore Devaswom Board	Seasonally Operated during festival season **(**Parameters complied with standards)	5 MLD	3.5 MLD	UASB and SBR
		Sewage Treatment Plant at Pamba (3.5 MLD) maintained by Travancore DevaswomBoard	Seasonally Operated during festival season(Parameters complied with standards stipulated**)**	3.5 MLD	3.5 MLD	Coagulation &settling

3	Kottayam	STP for Houseboat (0.09 MLD)at Kumarakom maintained by Distric Tourism Promotion Council, Kottayam	Operational	0.09MLD	0.09 MLD	ASP
4	Ernakulam	Sewage treatment unit, Kerala Water Authority, Elamkulam, (3 MLD)	Operational	4.5MLD	3 MLD	ASP
		STP owned by Greater Cochin Development Authority, Kadavanthra, Kochi (0.45 MLD)	Operational	0.45ML D	0.45 MLD	ASP
		Septage Treatment Plant at BrahmapuramKochi Corporation, Ernakulam	Operational	0.1MLD	0.1 MLD	MBBR
		Septage Treatment Plant at Wellington Island, Kochi Corporation	Operational	0.1MLD	0.1 MLD	MBBR
		STP at Kalamassery Market, Kalamassery Municipality(PRS)	Operational	0.01 MLD	started operation	
5	Kannur	Sewage treatment Plant at Taliparambu (0.5MLD) Taliparambu Municipality,Kannur	Operational	0.5MLD	0.5MLD	ASP

6	Thrissur	Sewage treatment Plant at Guruvayur inThrissur District	Commissioned	3 MLD	Not started functioning	ASP
		FSTP at Mattampuram	Completed. Not started functioning	0.01 MLD	Not started functioning	BIOLOGICAL
7	Malappuram **(PRS)**	Sewage treatment Plant-at Malappuram Municipal Bus stand	Operational	0.03 MLD	0.03 MLD	MBBR
		Sewage treatment Plant-at Tirur (fish market)	Operational	0.045 MLD	0.045 MLD	BIOLOGICAL
8	Adimaly Grama Panchayat, Idukki	Sewage treatment Plant at Comfort station, Adimaly Grama Panchayat, Idukki	Operational	0.01 MLD	Started functioning	Electro coagulation
9	Kozhikode **(PRS)**	Common Sewage Treatment Plant at Narayana nagaram, near stadium, Vatakara, Opp. New bus stand	Operational	0.1MLD	0.1MLD	MBBR
10	Wayanad	Sewage Treatment Plant at Taluk Hospital, Sulthan Bathery , Wayanad	Working in half capacity (initiatives of inauguration going on)	0.14 MLD	0.05 MLD	*MBBR*

11	Thrissur	Revamping of 35 KLD STP at Kuriyanchira Slaughter House Corportation , Thrissur	Operational	0.035 MLD	0.035 MLD	*MBBR*
PRS – Polluted River Stretches						

Details of under construction ETPs / STPs in the State

No.	Location	Capacity of the plant in MLD	Physical Progress in %	Status of I&D or House sewer connections	Incremental progress	Completion Time line
1	STP at Pambad Housing Colony Malappuram Municipality, Malappuram	0.110	95 % Completed	The work was stalled. The civil work was tendered without TS. The proposal was placed in the Coordination committee for ratification. Coordination committee has decided to entrust the Executive Engineer to take valuation of the work and to do necessary actions for giving payment. The work will be Resumed within a week's time.	Civil structure completed. Mechanical and Electrification going on	15/06/2021
2	ETP in Fish Marketing Ponmundam GP , Malappuram	0.01	98 % Completed	The work was expected to be finished in March. But Revised Estimate was necessary. It was not prepared and sanctioned on time. Now RE is prepared and it is expected to be sanctioned this month and work will be resumed by March	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	30/06/2021

3	STP at CHC Cherpu BP, Thrissur	0.01	10 % Completed	Work in progress. Actions were taken to speed up the work	Construction of civil tanks going on	31/06/2021
4	STP at Chitumala Old Age Home. Chitumala BP, Kollam	0.015	92 % Completed	Work is in progress. Pipe work going on and also need to give connections to the tank. Trial runs need to be conducted.	Civil structure and mechanical completed. Partition, pipe and plastering work going on	18/06/2021
5	Construction of 6 KLD ETP for Kumali Slaughter House Kumali GP, Idukki	0.006		Work completed Trial run conducted		
6	Construction of 45 KLD waste water treatment plant at Kalpetta Government Ayurveda Hospital DP , Wayanad	0.045		work is stalled. Awaiting PCB clearance for Consent to Establish	Earthwork excavation completed	30/11/2021
7	135 KLD Capacity decentralized sullage Treatment plant at Uppala Town Mangalpadi, Kasaragod	0.135		Awaiting dpc approval for the spillover project. Once AS is approved work can be tendered	Tendering stage	26/11/2021
8	STP at Private Bus station, Kothaikunnu, Thodupuzha	0.03		Work will be tendered once MCC is lifted		

9	*STP at Medical College - Phase I & II, Thiruvanathapuram (AMRUT) (PRS)*	*5*	*87%*	*No house connections envisaged*	*Works are in progress.*	*30.06.2021*
10.	*STP at Kureepuzha- Phase I & II, Kollam (AMRUT)*	*12*	*2%*	*No house connections envisaged*	*Offer received for tree cutting has been approved by the Council held on 22/04/21. Tree cutting to be started.*	*31.12.2021*
11.	*STP at Elamkulam, Kochi (AMRUT)*	*5*	*12%*	*No house connections envisaged*	*Piling works are in progress*	*31.03.2022*

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	Under Technical Scrutiny	30/11/2021
2	Taluk Hospital Pambady, Pambady Block panchayath , Kottayam	0.085	At DPR Stage	Under Technical Scrutiny	30/11/2021
3	Taluk Hospital Adimaly ,Adimaly Block Panchayath, Idukki	0.060	At DPR Stage	Under Technical Scrutiny	30/11/2021
4	General Hospital, Irinjalakuda Municipality , Thrissur (PRS)	0.150	At DPR Stage	DPR under preparation	30/11/2021
5	District Hospital Perunthalmanna , District Panchayath, Malappuram		At DPR Stage	Under Technical Scrutiny	30/11/2021
6	Taluk Hospital ,Neelaswaram, Kasaragod	0.040	At DPR Stage	DPR returned for modification	30/11/2021
7	CHC Alathoor, Alathoor Block Panchath , Palakkad	0.090	At DPR Stage	DPR returned for modification	30/11/2021
8	CHC Kadayiruppu ,Vadavukode Block		At DPR Stage	DPR returned for modification	30/11/2021

	Panchayath , Ernakulam				
9	CHC Sooranadu, Sasthancotta Block Panchath, Kollam		At DPR Stage	Under Technical Scrutiny	30/11/2021
10	CHC Kilimanoor, Kilimanoor Block Panchayath , Trivandrum	0.096	At DPR Stage	DPR returned for modification	30/11/2021
11	CHC Mangalpadi, Manjeswar Block Panchayath, Kasragod	0.014	At DPR Stage	DPR returned for modification	31/12/2021
12	CHC Konni, Konni Block Panchayath ,Pathanamthitta		At DPR Stage	DPR returned for modification	30/11/2021
13	Sewage Treatment plant at Private Bus stand,Thodupuzha Thodupuzha Municipality , Idukki	0.030	At DPR Stage	T.S issued	30/11/2021
14	65 KLD Sewage Treatment Plant at Taluk Head Quarters Hospital Vithiri,Kalpetta BP, Wayanad	0.065	At DPR Stage	DPR returned for modification	30/11/2021
15	10 KLD Sewage Treatment Plant at EMS Memorial Municipal Town Hall, Koyilandy Municipality, Kozhikkode	0.01	At DPR Stage	DPR returned for modification	30/11/2021

16	11 KLD effluent Treatment plant at Kuravilangad Fish Market, Kuravilangad Grama Panchayath , Kottayam	0.011	At DPR Stage	Under Technical Scrutiny	30/11/2021
17	Eco Friendly waste water Treatment Plant (60 KLD) for Women and Children Hospital Ponnani Municipality, Malappuram	0.06	At DPR Stage	DPR returned for modification	30/11/2021
18	Waste water Treatment (90 KLD) System for coastal housing and Tsunmai resettlement facility at karikuzhi mayyanad Grama Panchayath , Kollam	0.09	At DPR Stage	DPR returned for modification	30/11/2021
19	STP for Convention Centre,Pinaryi Grama Panchayath , Kannur	0.02	At DPR Stage	DPR returned for modification	30/11/2021
20	STP at CHC Mullashery Block Panchayath , Thrissur	0.01	At DPR Stage	DPR returned for modification	30/11/2021
21	Eco Friendly waste water	0.01	At DPR Stage	DPR returned for	30/11/2021

	Treatment plant 10 KLD in vettam community Health centre , Tirur BP			modification	
22	Sewage Treatment Plant 20 KLD at Shopping Complex cum multiplex Theatre,Kallumutti, Irutti Payam, GramaPanchayath, Kannur	0.02	At DPR Stage	DPR returned for modification	30/11/2021
23	Sewage Treatment Plant 50 KLD, Angal Block Panchayath , Kollam	0.05	At DPR Stage	DPR returned for modification	30/11/2021
24	ETP 10 KLD Capacity, Nedumangad Municipality, Thiruvananthapuram	0.01	At DPR Stage	DPR returned for modification	30/11/2021
25	ETP Karavaram Grama Panchayath, Thiruvananthapuram	0.01	At DPR Stage	DPR returned for modification	30/11/2021
26	STP at Community Health Centre Payanoor Block Panchayath ,Thirssur	0.025	At DPR Stage	DPR returned for modification	30/11/2021
27	STP at Municipal Bus Stand, Tirur**(PRS)**	0.05	Civil works of tanks and other physical structures completed. Interconnections	Completed and Started Functioning	Completed

			to be established. Trial run conducted on 20.10.2020. Completed and Started Functioning		
28	FSTP at Cherthala municipality, Alappuzha	0.25	Technical committee verified the project. Suggested modification. DPR modification is going on	Project has been forwarded to RKI for funding	-
29	STP at Decentralised Sewerage Scheme - Thrissur Corporation (AMRUT) **(PRS)**	2.5	**To be retendered:** The land selected falls under Kole Wet Land category and hence category change to be made in the Govt. data bank. Revenue Dept. directed the ULB (Lr. Date-17/11/2020) to place the issue before SLMC for approval. Letter was sent from the ULB to the Dist. Collector & Agricultural Production Commissioner, TVM regarding convening of SLMC on 30/01/21. **TS to be revised:** Revised estimate &other details were sent to CE,	A meeting was held on 23/02/21 with the Dist. Collector &it was agreed to take up the matter to SLMC through DLMC at the earliest. The ULB asked to submit the necessary documents for this& the same is being prepared. The same was submitted to Agricultural Field Officer on 12/03/21. *& from there the same was forwarded to the Secretary, Agricultural Dept. (NCA) on 09/04/21.* The same to be forwarded to SLMC. In the meeting held on 01/03/21 details regarding the temporary platform for piling work were sought by the CE, LSGD & the same to be submitted by the	31.03.2022

			LSGD office on 20/11/2020 for approval from ULB. The estimate was returned to the ULB from CE, LSGD Office on 06/01/2021 for correction. Corrected drawing & other details were submitted to the CE, LSGD on 04/02/2021 by SE, LSGD. Corrections sought by CE, LSGD were made in the Price software by the Consultant. *Work to be retendered after approval of revised estimate & issuance of revised Technical Sanction by CE, LSGD.*	Consultant. *In the meeting held on 22/04/21 the CE, LSGD suggested certain changes & additions in the revised estimate. The revised estimate is being corrected by the Consultant.*	
30	STP at Decentralised SewerageSystem - Kochi Corporation Div-15 (AMRUT)	1.4	**Selection notice issued but agreement to be executed:** Bid received (36.64% above) in the 6th tender to be finalized. Council held on 06/02/21 decided to request the Govt. to exempt the Corporation from bearing half of the cost due to tender excess. The 27th SHPSC held on 20/02/21 directed the Secretary to explain to the Council that 50% of cost due to tender excess has to be borne by the Corporation & get the decision in this regard. To be placed in the next Council for approval. Approval obtained from Hon' Mayor on 10/03/21.	*Selection notice was issued on 04/05/21.*	31.03.2022
31	STP at Decentralised Sewerage System - Kochi Corporation Div-	1.1	**Selection notice issued but agreement to be executed:** Bid received (25.95% above) in the 4th tender to be finalized. Council held on 06/02/21 decided to request	*Selection notice was issued on 04/05/21.*	31.03.2022

	16 (AMRUT)		the Govt. to exempt the Corporation from bearing half of the cost due to tender excess. The 27th SHPSC held on 20/02/21 directed the Secretary to explain to the Council that 50% of cost due to tender excess has to be borne by the Corporation & get the decision in this regard. To be placed in the next Council for approval. Approval obtained from Hon' Mayor on 10/03/21.		
32	Decentralized SewerageSystem(with STP) - KochiCorporation Div-17,Perumpadappu(STP opposite St.Juliana Public School, Pai Road) (AMRUT)	*1.4*	**Selection notice issued but agreement to be executed:** Bid received (25.92% above) in the 4th tender to be finalized. Council held on 06/02/21 decided to request the Govt. to exempt the Corporation from bearing half of the cost due to tender excess. The 27th SHPSC held on 20/02/21 directed the Secretary to explain to the Council that 50% of cost due to tender excess has to be borne by the Corporation & get the decision in this regard. To be placed in the next Council for approval. Approval obtained from Hon' Mayor on 10/03/21	*Selection notice was issued on 04/05/21*	31.03.2022
33	STP at Division 1 - 4 under Cochin Smart City Mission	6.5	Awarded not started	Awarded not started	-
34	5 STPs are coming up under the KMRL's	10 + 10 + 2+	To be tendered	To be tendered	-

	Integrated Water transport System project at Elaamkulam,Venn ala, Edapally, Puthukalavattom, Perandur	5+ 4 =31			
35	FSTP at Andamukkam, Kollam Corporation (AMRUT)	0.1	**Cancelled:** Core Committee held on 19/01/21 recommended to cancel the work. Council held on 11/02/21 decided to cancel the work & use the amount for laying sewer pipeline works (balance of KSUDP). The SHPSC held on 20/02/21 agreed to the suggestion of the Hon'ble Mayor of Kollam to cancel the septage project & use the amount available from the project as well as the unused amount till date in Sewerage Sector of Kollam under AMRUT for implementing the balance sewer network (balance of KSUDP).	*In the meeting conducted by the Chief Secretary on 05/04/21, it was directed that the decision to cancel the septage plant may be reconsidered & accordingly a letter was sent from AMRUT to the ULB on 09/04/21 regarding the same. The ULB replied on 28/04/21 that they had tried to implement the project but their efforts in this regard were thwarted due to public protests at the proposed location. In order to avoid the loss of AMRUT fund set aside for the Septage projects they had decided to cancel the*	-

				Septage Plants and utilize the same for sewer network laying works (balance of KSUDP) as the same is necessary for implementing a complete sewerage system in Kollam Corporation along with the 12 MLD STP being implemented under AMRUT at Kureepuzha.	
36	FSTP at Vasoorichira, Kollam Corporation (AMRUT)	0.1	**Cancelled:** Core Committee held on 19/01/21 recommended to cancel the work. Council held on 11/02/21 decided to cancel the work & use the amount for laying sewer pipeline works (balance of KSUDP). The SHPSC held on 20/02/21 agreed to the suggestion of the Hon'ble Mayor of Kollam to cancel the septage project & use the amount available from the project as well as the unused amount till date in Sewerage Sector of Kollam under AMRUT for implementing the balance sewer network (balance of KSUDP).	*In the meeting conducted by the Chief Secretary on 05/04/21 it was directed that the decision to cancel the septage plant may be reconsidered & accordingly a letter was sent from AMRUT to the ULB on 09/04/21 regarding the same. The ULB replied on 28/04/21 that they had tried to implement the project but their efforts in this regard were thwarted due to public protests at the proposed location. In order to avoid the loss of AMRUT fund set*	-

				aside for the Septage projects they had decided to cancel the Septage Plants and utilize the same for sewer network laying works (balance of KSUDP) as the same is necessary for implementing a complete sewerage system in Kollam Corporation along with the 12 MLD STP being implemented under AMRUT at Kureepuzha.	
37	FSTP at Karikkuzhi Ela, Kollam Corporation (AMRUT)	0.1	**Cancelled:** Core Committee held on 19/01/21 recommended to cancel the work. Council held on 11/02/21 decided to cancel the work & use the amount for laying sewer pipeline works (balance of KSUDP). The SHPSC held on 20/02/21 agreed to the suggestion of the Hon'ble Mayor of Kollam to cancel the septage project & use the amount available from the project as well as the unused amount till date in Sewerage Sector of Kollam under AMRUT for implementing the balance sewer network (balance of KSUDP).	*In the meeting conducted by the Chief Secretary on 05/04/21 it was directed that the decision to cancel the septage plant may be reconsidered & accordingly a letter was sent from AMRUT to the ULB on 09/04/21 regarding the same. The ULB replied on 28/04/21 that they had tried to implement the project but their efforts in this regard were thwarted due to public protests at the proposed location. In order to*	-

				avoid the loss of AMRUT fund set aside for the Septage projects they had decided to cancel the Septage Plants and utilize the same for sewer network laying works (balance of KSUDP) as the same is necessary for implementing a complete sewerage system in Kollam Corporation along with the 12 MLD STP being implemented under AMRUT at Kureepuzha.	
38	FSTP at Ramavarmapuram, Thrissur (AMRUT) **(PRS)**	0.1	**Selection notice issued but agreement to be executed:** Selection notice was issued on 31/12/2019. Council held on 15/07/2020 decided to proceed further with this project only after obtaining consent to establish from KSPCB. Online application submitted to KSPCB on 20/11/2020. KSPCB returned the application on 19/02/21 asking for details (4th time) regarding water reuse & road to the plant.	*The application was resubmitted (4th time) to KSPCB on 23/03/21 along with the details sought but the same was returned again by KSPCB on 13/04/21 (5th time). This time KSPCB asked for confirmation of the quality of treated water proposed to be reused. ULB to resubmit the application along with the details sought.*	*31.12.2021*
39	FSTP at Yakkara, Palakkad Municipality (AMRUT)	0.1	**Selection notice issued but agreement to be executed:** Selection notice was issued on 04/08/2020. Agreement to be signed.	*In the meeting conducted by the Chief Secretary on 05/04/21 it was*	*31.03.2022*

			Permissive sanction for the selected land is awaited from Revenue Dept. Mutual transfer of land has to happen between Revenue Dept. & Medical College, Kozhikode. Letter sent from SMMU to Land Revenue Commissioner on 19/01/2021 requesting urgent action in this regard. Land Revenue Commissioner has submitted the proposal in this regard to Revenue Secretary on 28/01/2021. Principal Secretary, Revenue informed vide letter dated 10/02/21 that they have forwarded the file to SC/ST Dept. for their comments & reply is awaited.	*directed that the Revenue Dept. may be approached for providing the necessary permissive sanction within a fixed time frame of 3 weeks. Accordingly a letter was sent from AMRUT to the Principal Secretary, Revenue Dept. & reply is awaited.*	
40	FSTP at Chellora, Kannur Corporation (AMRUT)	0.1	***Work started but stalled:*** *Legacy waste dumped at the proposed location to be cleared fully for starting the works. The legacy waste clearance work (separate work done by the ULB as part of the Waste to Energy Project) had started but the same has been stopped due to huge increase in the anticipated quantity of legacy waste.*	*Core Committee held on 29/04/21 approved the proposal of getting the site cleared as separate work. Accordingly letter was sent to M/s. Zonta on 30/04/21 that they shall restart the legacy waste clearance works by 10/05/21, otherwise the ULB will arrange the work separately & the cost incurred will be deducted from their project cost.*	30.09.2021

41	FSTP at Chakkumkan dam, Guruvayur Municipality, Thrissur (AMRUT)	0.1	**Work started but stopped:** Land filling works started but was stopped since Feb-2020 due to want of permission from Revenue Dept. RDO informed on 29/12/2020 that the land selected for the work is coming under wet land category &recommendation of LLMC is required for changing the category of land in the databank. Letter was sent to Agricultural Office on 06/01/2021from ULB for convening LLMC meeting. *LLMC was convened on 15/02/21. Minutes of the meeting was given on 20/04/21 to the ULB & as per the same the selected land falls under wet land category.*	*The ULB is checking the possibility of constructing the plant on a KWA land which is already filled & near the proposed location.*	31.12.2021
42 & 43	Mobile Septage Units- 2 nos, Alappuzha (AMRUT)	0.02 (0.01 *2 nos.)	**Technical Sanction to be issued:** The report submitted by the Technical Resource Bank team was forwarded to the Consultant on 24/01/21. Accordingly, the revised DPR was submitted by the Consultant on 18/02/21. Estimate in Price software was prepared by the Consultant & submitted to CE, LSGD on 23/02/21.	*LMR analysis & supporting quotations were submitted by the Consultant on 09/04/21 & the same were forwarded to CE, LSGD.*	31.12.2021
44	STP at General Hospital, Alappuzha	0.24	**Selection notice issued but agreement to be executed:** Selection notice was	*. Health Dept. informed on 31/03/21 that they*	31.12.2021

	(AMRUT)		issued on 29/12/2020. Agreement to be signed. Existing structure at the site to be demolished. Permission awaited from Health Dept. Health Dept. informed the ULB on 19/02/21 to provide the details regarding quotations invited for regarding demolition work. The details were given to Health Dept. on 10/03/21	*will also conduct an auction for demolishing the existing building & offers that will be received will be compared with the offer received for the same by the ULB and the better offer will be finalized. A reminder in this regard was sent from the ULB to Health Dept. on 27/04/21*	
45	STP at ShatabdhiMandiram, Alappuzha (AMRUT) **(PRS)**	0.015	**Technical Sanction to be issued:** The report submitted by the Technical Resource Bank team was forwarded to the Consultant on 24/01/21. Accordingly, the revised DPR was submitted by the Consultant on 18/02/21. Estimate in Price software was prepared by the Consultant & submitted to CE, LSGD on 23/02/21. The same is under scrutiny at CE, LSGD Office.	*LMR analysis & supporting quotations were submitted by the Consultant on 17/04/21 & the same was forwarded to CE, LSGD.*	31.03.2022
46	STP at Thottumadi Colony, Alappuzha (AMRUT)	0.05	**Technical Sanction to be issued:** The report submitted by the Technical Resource Bank team was forwarded to the Consultant on 29/01/21.Accordingly, the revised DPR was submitted by the Consultant on 18/02/21. Estimate in Price software was prepared by the Consultant &	LMR analysis & supporting quotations were submitted by the Consultant on 19/04/21 & the same were forwarded to CE, LSGD. The estimate was returned by the CE, LSGD for certain	31.03.2022

			submitted to CE, LSGD on 23/02/21. The same is under scrutiny at CE, LSGD Office.	corrections on 23/04/21. The corrected estimate was submitted to CE, LSGD on 07/05/21.	
47	STP at General Hospital, Thrissur (AMRUT) **(PRS)**	0.36	**Awarded but not Started:** Agreement was executed on 14/10/20. Consent to Establish (dated 11/12/20) was issued by KSPCB. Letter was sent to the Contractor on 21/12/20 asking for submission of additional performance guarantee. *The Contractor informed on 27/02/21 that they will submit the additional performance guarantee when the site is ready to be handed over to them. Site to be handed over to the Contractor after demolition of the existing structure at the location.*	*Electrical connection to be disconnected / shifted for starting the demolition of the existing building at the location. TCED has submitted an estimate for this & the same to be paid by the ULB.*	30.09.2021
48	STP at District Hospital, Palakkad (AMRUT)	0.27	**Work started:** Site clearance and survey have been done by the Contractor. Contractor submitted the details of variations required &its estimate on 12/02/21 & the same was forwarded to the Consultant. Reply was given by the Consultant on 26/02/21 & the same was forwarded from the ULB to the Contractor on 01/03/21 after scrutiny. Reply is awaited from Consultant regarding increase in depth of excavation & change in manhole type to RCC. *Excavation works for plant*	*A letter was sent to the Contractor from the ULB on 06/05/21 asking them to restart plant related works. The Contractor replied on 08/05/21 that they need clarifications regarding payment conditions & they are awaiting reply from the ULB regarding the technical queries raised earlier by them.*	31.10.2021

			foundation has been done. Contractor is yet to start other works.		
49	Sewage Treatment Plant & associated network at Sundaram Colony, Palakkad (AMRUT)	0.8	**Tendered but not Awarded:** Bid received (18.5% above) in the 5th 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. Council held on 24/02/21 approved the bid. Selection notice to be issued.	Application for consent to establish was submitted to KSPCB on 20/03/21 *& fee was paid on 05/05/21.*	31.03.2022
50 & 51	Sewage treatment plant at Medical College with Septage treatment, Kozhikode (AMRUT) **(PRS)**	2 MLD Plant (with septage treatment) &1MLD plant	**Work started:** Site cleared & setting out works to be started by the Contractor. Network design submitted by the Contractor to be discussed & finalized by in the next TS Committee meeting. Structural designs of plants were submitted by the Contractor on 17/02/21. Contractor to get the same vetted by a Govt. Engg College. *Vetted plant designs were received from the Govt. Engg. College on 03/04/21. The same was approved by the ULB on 08/04/21.*	. Site cleared & setting out works for 2.1 MLD plant to be started by the Contractor. *Contractor had started the sewer network laying works but the same had to be stopped due to Covid*	*30.09.2021*
52	STP at Sewerage system in Zone	6.0	**Tendered but not awarded:** Judgment is awaited for the ongoing case in Court regarding ownership of the land. Work was tendered 3 times (STP and Network combined) but	Quote for network negotiated to 30% above. Council approval to be taken for both quotes.	31.03.2022

			quote received in the last 2 tenders were very high. Hence STP and Network were tendered separately on 04/09/2020 (1st Tender). L1 for STP is 0.75% below and Network is 34.81% above.		
53	STP at Sewerage system in Zone A, Package A, Avikkal Thodu, Kozhikode (AMRUT) **(PRS)**	7.0	***Awarded but not Started:*** EIA & CRZ status reports to be prepared for submitting application to KCZMA for approval. The application for consent to establish was resubmitted to KSPCB along with the corrected drawing on 01/02/2021.Agreements were signed on 24/02/21.Site was visited by KSPCB officials on 25/02/21. Site was visited by KSPCB officials on 25/02/21. KSPCB returned the application on 16/03/21 & asked to submit effluent reuse details. The application was resubmitted to KSPCB on 20/03/21 along with the details sought. EE, KSPCB has forwarded the proposal to CE, KSPCB, TVPM on 27/03/21 for approval.	*IRS, Chennai officials visited the site on 17/04/21 & they submitted the draft CRZ Report on 29/04/21.*	31.03.2022
54	STP at Decentralised sewerage network with STP in old Kannur Municipal area, Kannur (AMRUT)	1.0	**Selection notice issued but agreement to be executed:** New Council held on 08/01/21 decided that half of the cost due to tender excess can't be borne by the Corporation & place agenda again in the next SHPSC. The 27th SHPSC held on 20/02/21 noted that network & road restoration are part of the same project	*Contractor was asked on 23/04/21 to complete all formalities & start the works. They informed on 07/05/21 that they require more time for the same due to Covid.*	*31.03.2022*

			(single project ID) and hence overall expenditure is well within the AS amount. However, in case of any additional fund requirement, the ULB has to bear 50% of the same Selection notice was issued on 24/02/21.*Agreement was signed (dated 26/02/21). Work to be started* * Contractor has requested the ULB on 08/03/21 to provide mobilization advance (25%). In this regard a meeting was held with Contractor's officials on 24/03/21.		
55	STP at Ottappalam Municipality, Palakkad District (IMPACT KERALA Ltd)	1.50MLD Co-treatment	DPR approved by KIIFB, PCB NOC obtained. Technical Sanction Process including obtaining Statutory Clearances ongoing. *Placed in Technical committee.*	*DPR approved by KIIFB. Consultant making corrections as per technical committee comments.*	31.12.2022
56	STP at Kunnamkulam Municipality, Thrissur (IMPACT KERALA Ltd)	1.00MLD Co-treatment	DPR approved by KIIFB. PCB NOC pending. PCB had conducted a meeting of all concerned stakeholders on 01/02/2021 and have suggested corrections in DPR. Municipality yet to submitas they need redesign.	DPR approved by KIIFB	31.12.2022
57	STP at Vadakara Municipality, Kozhikkode	0.5 MLD Sewage TP 20KLD Septage TP	DPR appraisal ongoing in KIIFB. Necessary TAR corrections being made in the DPR by consultant.	DPR modification ongoing	-

	(IMPACT KERALA Ltd) **(PRS)**				
58	STP at Cherthala Municipality , Alappuzha (IMPACT KERALA Ltd)	250KLD Septage TP	Submitted to RKI for AS	AS awaited	-
59	STP at Wadakkanchery Municipality, Thrissur (IMPACT KERALA Ltd) **(PRS)**	1.00MLD Co-treatment	Puramboke land. NOC to be obtained from district collector.	DPR under preparation	-
60	STP at Varkala Municipality, Thiruvananthapuram (IMPACT KERALA Ltd)	140KLD Septage	Municipality required change in scope of DPR. Consultant making corrections as per requirement *To be submitted to RKI for AS.*	DPR Preparation ongoing	-
61	STP at Mayyand GP, Kollam (IMPACT KERALA Ltd)	590KLD Co-treatment	DPR placed in Technical committee for forwarding to RKI. Committee suggested modifications. Necessary corrections being made in the DPR by consultant. Technology being reworked by consultant. *To be submitted to RKI for AS.*	*DPR Correction ongoing as per technical committee comments.*	-
62	STP at OttupparaMarket, Wadakkanchery Municipality, Trissur (IMPACT KERALALtd) **(PRS)**	18 KLD STP	DPR submitted to KIIFB as a partof the project "Modernisationof Ottupara Market in WadakkancheryMunicipality". DPR Approved by KIIFB, KIIFB Proceedings awaited	DPR Approved by KIIFB, KIIFB Proceedings awaited	-

63	STP at Athani market, Wadakkanchery Municipality, Trissur**(PRS)** (IMPACT KERALALtd)	13.9 KLD STP	DPR submitted to KIIFB as part of the project ”Modernisation of Athani Market in Wadakkanchery Municipality”. DPR Approved by KIIFB, KIIFB Proceedings awaited	DPR Approved by KIIFB, KIIFB Proceedings awaited	-
64	STP at Fish market, Payyannur Municipality, Kannur **(PRS)**	10 KLD STP	Technical committee verified the project. Suggested modification. DPR modification is going on	DPR modification is going on	-
65	STP at Athani, Wadakkanchery Municipality, Trissur **(PRS)**	350 KLD STP	Site identified. DPR under preparation	DPR under preparation	-
66	Sewerage system (with STP) in Zone A, Package B, Kothi, Kozhikode (AMRUT) (PRS)	6	**Awarded but not Started:** EIA & CRZ status reports to be prepared for submitting application to KCZMA for approval. The application for consent to establish was resubmitted to KSPCB on 20/01/21. Agreements were signed on 24/02/21.Site was visited by KSPCB officials on 25/02/21 KSPCB returned the application on 16/03/21 & asked to submit effluent reuse details.	*IRS, Chennai officials visited the site on 17/04/21 & they submitted the draft CRZ Report on 29/04/21.*	31.03.2022

			The application was resubmitted to KSPCB on 20/03/21 along with the details sought. EE, KSPCB has forwarded the proposal to CE, KSPCB, TVPM on 27/03/21 for approval. • Request for NoC was given to KSEB & KWA on 29/01/21 as the same is required for KCZMA approval. Reply is awaited from KSEB & KWA. • The 27th SHPSC held on 20/02/21 decided to approve the 30% tender excess subject to the condition that the Corporation will bear 50% of the additional cost due to tender excess.		

IV. V. Details of IndustrialPollution:

- No. of industries in the State: 143990(Registered in the web portal of KSPCB)
- No. of water polluting industries in the State:4629
- Quantity of effluent generated from the industries in MLD: 168.7684

- Quantity of Hazardous Sludge generated from the Industries inTPD:2584.572
- Number of industrial units having ETPs:3786 nos
- Number of industrial units connected to CETP: As per the available data-**64 nos**
- NumberandtotalcapacityofETPs(detailsofexisting/underconstruction/proposed)
- Compliance status of the ETPs: **Out of 3715ETPs, 3685are complying**
- Number and total capacity of CETPs (details of existing/under construction /proposed)
  - 7 nos of CETPs are functional (Total Capacity – 7.925MLD), 1 CETP having capacity 0.25 MLD not operational due to non availability of raw material. Proposed CETPs – 3 nos. (Total Capacity- 5.5 MLD). 1 CETP having capacity 1 MLD is under construction (12 CETPs- capacity- 14.425 MLD)

Details of existing/under construction/proposed CETPs in the State

No.	CETP location	CETP Installed capacity	CETP Utilisation capacity	Operational Status
1.	Kinfra Apparel Park, St. Xavier's College P.O, Thumba, Thiruvananthapuram	4.5MLD	4.5MLD	**Operational**
2.	Sea Food Park (India) Ltd., Aroor, Alappuzha	0.3 MLD	0.3 MLD	***Operational(Parameters complied with standards stipulated)***
3.	SEZ, Kakkanad, Cochin Special Economic Zone Ernakulam	1.6MLD	1.6MLD	**Operational**
4.	Kinfra Small Industries Park Nellad, Mazhuvanoor, Ernakulam – 686 721	0.4MLD	0.4MLD	***Operational (Parameters complied with standards stipulated)***
5.	Rubber Park India Private Limited, CommonEffluent Treatment Plant, 2A, Kaudileeyam, Rubber Park, Valayanchirangara, Ernakulam – 683556	0.25 MLD	0.25 MLD	***Operational(Parameters complied with standards stipulated)***
6.	Kinfra Techno Industrial Park, KakkancheryChelambara P.O, Malappuram	0.675MLD	0.675MLD	***Operational(Parameters complied with standards stipulated)***
7.	Kinfra Textile Centre, Nadukani, Pallivayal P.O, Thaliparambu, Kannur – 670 142	0.2 MLD	0.2 MLD	***Operational(Parameters complied with standards stipulated)***
8.	KSIDC, Valiyavelicham, Kuthuparamba Kannur	0.25 MLD	-	**Not Operational due to non availability of waste water**
9.	ACCEPT, Aroor Industrial Estate, Alappuzha	1.5 MLD	-	**Proposed**

10.	CETP, Chandiroor	1.5 MLD	-	**Proposed**
11.	CETP, Food Park, Cherthala	2.5 MLD	-	**Proposed**
12.	CSEZ, Kakkanad, Cochin Special Economic Zone Ernakulam	1 MLD	-	**Under Construction**

V. Solid Waste Management:

- Total number of Urban Local Bodies and their Population :**93 Urban Local Bodies (6 Corporation and 87 Municipalities) , Total Urban Population : 79,36,885 (As per 2011 Census).**
- Current Municipal Solid Waste Generation :**3452 TPD (Based on Population)**
- Processing Capacity : **2844.48TPD**
- Number, installed capacity and utilization of existing MSW processing facilities in TPD (bifurcated by type of processing eg- Waste to Energy (Tonnage and Power Output), Compost Plants (Windrow, Vermi, decentralized pit composting), biomethanation, MRFetc:
- The proposal for EPR Registration as per Solid Waste Management Rules, 2016 has been submitted to the State Government for approval. The main objective is to collect fee from brand owners based on the weight of packaging and to divert the fee amount to the authorized collectors of the local bodies.

Status of Present MSW processing facilities is given below:

Facility	Type of plant	Number	Location and Capacity
Centralised plant	Windrow composting plants (large)	2	Ernakulam, Kozhikode (100TPD)
	Windrow composting plant(Small)	12	1. Attingal(13TPD), 2.NorthParavur(3TPD), 3. Chalakkudy(2TPD), 4. Kodungallur (4 TPD), 5.Kothamangalam, 6. Kunnamkulam, 7. Guruvayoor(2.TPD), 8.ChitturThathamangalam(4TPD), 9. Ottappalam (5TPD), 10. Palakkad(4TPD), 11.Thaliparambum, 12. Payyannur
Community level	Vermi composting plants(Small)	7	1.Attingal(0.25TPD); 2.Thodupuzha; 3. North Paravur(1 TPD); 4.Chavakkad(1.5 TPD); 5. Manjeri(0.5TPD); 6.Koothuparamba; 7.Mattannur(5TPD)
	Aerobins	406	
	Biogas plants	287	
	Biobins in flats	500+	Thiruvananthapuram, Ernakulam, Thrissur
	Material Collection Facility	483	
	Resource recover facility	68	
Household level	Pipe compost	1,34,270	Total-3,62,294
	Kitchen bin	50,399	
	Biogas plant	25,255	
	Biocomposter, biobin, pot bin	49,730	
	Ring compost	20,283	
	Bucket compost	6,903	
	Compost pit	75,454	
Institutional level	Biogas plants, aerobins, biobins		

Status of Waste- to- Energy Plants:

Sl. No.	Plant Location	Status of operation	Power generation (MW)
1.	Kozhikode	Work awarded – Construction to be started	
2.	Sulthan Bathery	Work awarded – work started	
3.	Kannur	Tendering for WtE plant completed and bidders were identified	DPR stage
4.	Kollam	Tendering for WtE plant completed and bidders were identified	DPR stage
5.	Palakkad	Tendering for WtE plant at completed and bidders were identified	DPR stage
6.	Kochi	Retendering	Retendering stage
7.	Thiruvananthapuram	Tendering	Tendering stage
8.	Munnar	Tendering	Tendering stage
9	Thrissur	Land identified	
10.	Malappuram	Land identified	

- Action plan to bridge gap between Installed Capacity and Current Utilization of processing facilities (if Gap >20%)
- No. and capacity of C&D waste processing plants in TPD (existing, proposed and under construction)
- Total no. of wards, no. of wards having door to door collection service, no. of wards practicing segregation at source
- Details of MSW treatment facilities proposed and under construction (no., capacity, and technology):

Solid Waste processing facilities setup:

Sl. No.	Composting	Vermi-composting	Biogas	RDF/Pelletization
1.	Centralised windrow composting plants– 2(Large);12(Small)	Community level-7	Community level- 287 Household level-	Nil
2.	Community level- 1,193(aerobin, biobins)		25255	
3.	Household level - 3,37,039			

Solid Waste Processing facility operational:

Sl. No.	Composting	Vermi-composting	Biogas	RDF/Pelletization
1. 2. 3.	Centralised windrow composting plants – 2(Large); 12(Small)	Community level-7	Community level- 287 Household level- 25255	Nil
	Community level- 1,193(aerobin, biobins)			
	Household level- 3,37,039			

Solid Waste Processing facility under installation/planned:

Sl. No.	Composting	Vermi-composting	Biogas	RDF/Pelletisation
	Being planned/installation for decentralized units	-	Being planned/installation for decentralized units	-

A. Progress in establishing Waste to Energy plants in eightcities/towns having population above 1lakh

Sl. No	Corporation/ Municipality	Identified site	Area (acre)	Status
1)	Kozhikode	Njaliyanpara- mbu (Govt. land)	12.67	1.1 Waste to Energy Plant • Work awarded to Zonta Infratech Private Limited for the construction of Waste to Energy Plant at Njaliyanparambu. 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

				1.2 Biomining at Njaliyanparambu 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. The work is in progress at the site.
2)	Kannur	Chelora (Govt. Land)	9.7 acres	2.1 Waste to Energy Plant Blue Planet Kannur Waste Solutions Private Limited was formed to take up the development of the project. Waste Characteristion study was Contucted 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 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. 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 concenssionarire has reported that the field studies including waste characterization and waste

				quantification studies, as part of DPR preparation will be commencing next week.
				2.2 Legacy waste 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 for rehabilitation of MSW dumpsite at Chelora.
3)	Palakkad	Kanjikode (Land takenover from Kerala State Electricity Board Ltd. in advance possession)	15	3.1 Waste to Energy Plant Blue Planet Kannur 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.

Sl. No	Corporation/ Municipality	Identified site	Area (acre)	Status
4)	Kollam	Kureepuzha (Govt. land)	7.05	4.1 Waste to Energy Plant • 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. • Concenssionaire has taken steps to submit applications to the concerned departments and agencies for statutory approvals and clearances.
				4.2 Biomining • 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 the present tender and go for re-tender immediately. Again the project has been retendered by the Corporation.
Sl. No	**Corporation/ Municipality**	**Identified site**	**Area (acre)**	**Status**

5)	Thiruvananthapuram	Vizhinjam		5.1 Waste to Energy Plant • 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 obtainedfrom 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.
6)	Ernakulam	Brahmapur am (Govt. land)	20 acres	6.1 Waste to energy plant • 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.

				6.2 Biomining • 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)	Thrissur			7.1 Waste to Energy Plant • Thrissur Corporation identified land at Ollookkara village in Thrissurdistrict. • 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 theproject Secretary, Thrissur Municipal Corporation to report the status of price negotiation done with the owners of the land identified.
				7.2 Biomining of legacy waste Proposal submitted to Suchitwamission for sanction.

Sl. No	Corporation/ Municipality	Identified site	Area (acre)	Status
8)	Malappuram		8.09	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.

B. Progress in establishing Waste to Energy plants in two towns having population below1lak

Sl. No	Municipality	Identified site	Area (acre)	Status
9)	Wayanad	SulthanBat hery (Govt. Land)	0.5	• Construction of platform completed • Action to be taken on the installation of machinery
10)	Idukki	Munnar (Land handed over by M/s Kannan Devan Hills Plantations Pvt. Ltd)	2	10.1 Waste to Energy Plant • 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
				10.2 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 briquests for construction purpose.

- No. and area (in acres) of uncontrolled garbage dumpsites and SanitaryLandfills:

Disposal of solid waste:

- Landfill sites identified : 2 (One at the regional level at Ernakulum)
- Landfill constructed : Nil
- Landfill underconstruction : **1**

For Regional Sanitary Landfill, land (25 acre) has been identified at sit e of FACT at Ambalamedu, Ernakulam and action is being taken for take over.

Solid Waste Dumpsites :

- Total number of existing dumpsites :51
- Dumpsites reclaimed :9
- **Biomining** started at Njalianparmbu dumpsite and work awarded at Kureepuzha Kollam. Tendering stage at Kottayam, Bhramapuam, Chelora..
- Proposal for **co-incineration** facility at Malabar cements is underconsideration.

Monitoring at Waste processing/Landfills sites

Sl. No.	Name of facilities	Ambient air	Groundwater	Leachate quality	Compost quality	VOCs
1.	Windrow composting plant, Kozhikode	Yes	Yes	Yes	No	No
2.	Windrow Composting plant, Brahmapuram	Yes				

- No.and area(inacres)oflegacywastewithin1kmbuffer of both side of the rivers:
- No.ofdrainsfallingintoriversandno.ofdrainshavingfloatingracks/screens

  installed to prevent solid waste from falling into therivers:

Status of ULB wise Management of Solid Waste

Sl.No	District	Local body	Population as per 2011 Census	Projected population (2019)	Quantity of Waste generated based on population (TPD)	Percentage of D2D Collection(Dry waste)		No of collectors	As reported by localbodies		Quantity of waste processed(TPD)	Waste treatment technology used	Institutional level SWM Plants	Community Level SWM Plants	Household Level SWM Plants	Centralized	Non-Biodegradable Waste Management	Site identified for Sanitary land fill	Dump sites identified	Authorization Applied	Authorization granted	Annual report (Form IV)
						Household (%)	Non-residentialpremises (%)		Quantity of waste Collected (TPD)	Quantity of waste processed (TPD)												
1	Thiruvanthapuram	Thiruvanthapuram City	958000	996204	456	19.4	92.1	12 service providers	42.95	242.23	222	De centralized management facility	Biobin 109 of 15 TPD	Biogas Plant 18 Nos of 18.4TPD Aerobin(Thumboormuzhi model)53Nos having 12 TPD	Pipe compost-87000 Nos., (50,000 working) of 43.5TPD Kitchen Bin-19000Biocomposter-15833 Biogas plant-3982 Nos of 2.39TPD; other units-109	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 landonleasetoKSIDC.The Board approval is to be communicated to the Port Department to issue necessary orders. Tendering has been done for the WtEplant	Material Collection Facility in 54 locations Resource Recovery Unit - 4 numbers Plastic Shredding Units - 2 Nos Bailing Unit - 1 Number	Regional landfill site identified at Kochi	3 (Of which one dumpsite cleared)	Yes	Under processing	Yes

2	Kollam	Kollam City	397000	412832	183	59.9	48.9	124	10.5	10.5	147	De centralized management facility	Not reported	13 biogas plants of 5.6TPD; 13aerobins of 3.9TPD	Biogas plant-1273 Nos. (working)of 2.5 TPD; Pipe compost -462 (working) of 1 TPD; 720 biocomposter, biopot of1.5 TPD	Letter of Intent (LOI)issued to the consortium by M/s. Zonta Infratech Pvt Ltd.,the successful bidder of the project on 12-3-2020 and consortium accepted the LOI and the Consortium has taken steps to incorporate the SPV and reserved Venad Waste Management Private Limited as the name oftheSPVwiththeMinistry of CorporationAffairs. Consortium requested for an extension of time for the incorporation of SPV due to current lock down announced as part of Covid 19 pandemic	Material collection facility (200 sq ft)-one Plastic shredding machine (150 sq ft) - one number	Regional landfill site identified at Kochi	1(Kureepuzha) • For biomining the site, the Corporation informed that draft agreement to be executed with M/s.Zonta InfratechPvt Limited is vetted by the Corporation's Standing Counsel and the same will be placed in the next Council meeting for approval.	Yes	Yes	No

3	Ernakulam	Kochi City	677000	703999	352	90	60	1200	308	215	304	Centralized treatment - Windrow composting at Brahmapuram	Not reported	Nil	Biogas plant-60 Compost pits-1212	Biodegradable waste in dumping yard at Brahmapuram . Windrow composting. Retenderingof waste to energy plant at Brahmapuram	MCF- 8, RRF-5	Regional landfill site identified at Kochi	1(Retendering of biominingof dumpsite at Brahmapuram)	Yes	Under processing	Yes
4	Thrissur	Thrissur City	317526	330189	153	23.3	19.7	145	103	103	114	Decentralised facility	Total quantity of biodegradable managed-6.71TPD Non biodegradable 0.7TPD	Organic Waste Converter-2 Nos of 4 and 8TPD Biogas plant-9	Biogas plant-632;Compost pit- 20118;50 biocomposter, biobin and four other units	Thrissur Corporation identified land at Ollookkaravillage 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.The matter is being placed before the Council for approval and further proceedings.	Material collection facility-8 Resource recovery facility-3	Regional landfill site identified at Kochi	1 (Laloor)	No	No	Yes

5	Kozhikode	Kozhikode	550000	571934	300	66.4	69.3	602	98	95	140	Centralized treatment - Windrow composting at Njaliyanprambu	Non-biodegradable-0.75TPD	Biogas plant at public utility place-4Nos Aerobins-28	Biogas-261 Pipe compost-10250	Windrow Composting. Work awarded to Zonta Infratech Private Limitedfor the construction of Wasteto Energy Plant at Njaliyanparambu. A company namely M/s.Malabar Waste Management Limited was formed and they applied for registration in KeralaSingle Window Clearance Portal (KSWIFT) and to individual departments forclearance. The company obtainedNOC from State Environmental Impact Assessment Authority. Suchitwa Mission submitted the proposal to Ministry of Housing and Urban Affairs for approval of their sharein the VGF for theproject. Clarification on the points was called for by the Ministry and the same is being processed.	Material collection facility-2	Regional landfill site identified at Kochi	1(Njaliyanparambu) Biomining started	Yes	Yes	Yes

6	Kannur	Kannur	356000	370197	109	63.5	89.3	44	15	15	107	LandFilling	Not reported	Biomethanation of 0.25 TPD Trenching	Kitchen bin-102 Biogas - 40(working) Pipe Compost 1682(working)	M/s Organic Recycling Systems Private Limitedand M/s. Blue Planet Environment SolutionsIndia Limited have completed the incorporation of SPVs inthe name of Blue Planet Kannur Waste Solutions Private Limited to take up the development oftheproject. Consortium has selected agency for the preparationof DPR, waste quantification and characteristic study in Kannur district and the agency could notcommence due to lock downannounced in connection with Covid19 pandemic. 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.	Material collection facility-2 Plastic shredding unit at Chelora-1	Regional landfill site identified at Kochi	1(Chelora)MoU with KSIDC for clearing the existing legacy waste at dump site in Chelora	Yes	Under processing	Yes

7	Thiruvanathapuram	Attingal	37648	39150	17	48.5	100	43	16	16	17	Centralised and decentralised systems	Biogas Plant(Dheenabandhu) 6 Nos with capacity of 1TPD Biogas plant (Portable) 5 Noswith capacity of 107.5 kg/day	Windrow composting plant of 13TPD, Biogas Plant 6 Nos - 3.25 TPD Vermi Compost 1 No wih capacity of 0.25 TPD	Biogas Plant 407 Nos-0.85TPD	Windrow composting plant, vermic composting plant, and biogas plant	Resource Recovery Facility - SWM Plant, Chudukadu Plastic Shredding Machine-SWM Plant, Chudukadu	Yes	1	Yes	Under processing	Yes
8		Nedumangad	60161	62561	25	6.2	62.5	22	1.5	1.5	8	Decentralised treatment		Aerobins-37 Ring compost -15	Biogas plant-200 Kitchen bin-2617	Nil	MCF-1; RRF-1	At regional level	Nil	No	No	Yes
9		Neyyattinkara	70850	73676	30	48	18.3	88	3	3	10	Decentralised treatment	Boiogas plant-20	Aerobins 21 Biogas plant 10	Biogas plant-104 Compost pit-14360	Nil	MCF- 1	At regional level	Nil	No	No	Yes

10		Varkala	40048	41646	17	69	88	18	4.8	4.8	9	Decentralised treatment		Compost (Thumboormuzhi Model) 33 bins at 33 locations with capacity of 33 Cubicles Biogas Plant 1 No-100Kg	Biogas Plant - 200 Nos Pipe Compost - 2500	Nil	MCF-3; RRF-1	At regional level	Yes -one	Yes	Yes	Yes
11	Kollam	Karunagapally	47483	49377	21	29.4	20.6	35	7	1	6	Decentralised treatment	2.9TPD of biodegradable waste and 0.3TPDof biodegradable waste is managed.	Compost pit, Vermicomposting.	Biogas plant-21 Compost pit-8521	Nil	MCF-1; RRF-1	At regional level	Nil	Yes	Yes	Yes
12		Kottarakara	31256	32503	13	66.6	20.1	58	1.34	1	4	Decentralised treatment	Biogas Plant - 1 No - Taluk Hospital Biogas Plant (Portable) 1 No-Boys HSS Total -16 biogas plants	Biogas Plant 1 No - Market, Chandamukku Aerobic compost - 8	Biogas Plant - 106 Nos Ringcompost-250 Pipe Compost 28	Nil	MCF-29; RRF-1	At regional level	Nil	Yes	Yes	Yes
13		Paravur (South)	36798	38266	15	100	100	32	2	2	5	Decentralised treatment	10 biogas plant	8 biogas plant,Aerobins-4	Pipecompost-162 Biogas plant-121	Nil	MCF	At regional level	Nil	Yes	Under processing	Yes

14		Punalur	48648	50589	20	100	100	127	20	10.5	20	Decentralised treatment	Not reported	Aerobic compost -2 bins at 2 locations withcapacity of 12 cubicles	Biogas-1250 Pipe Compost-5000 Compost pit - 6500	Nil	Material Collection Facility - 233sq ft - 233 locations Small collection facilities)	At regional level	Nil	Yes	Yes	Yes
15		Adoor	29171	30335	12	0	3.5	4	1	0.8	4	Decentralised treatment	1.4TPDof biodegradable waste is managed	Aerobins- 6 bins 3 unit	Pipe compost-1010 s Ring compost - 250	Nil	MCF-1; RRF-0	At regional level	Nil	No	No	Yes
16		Pandalam	41604	43264	17	60	0		1.5	1.5	5	Decentralised treatment	0.89TPD of waste is managed		Compost bins 2650	Nil	Not given	At regional level	Nil	No	No	Yes

17	Pathanamthitta	Pathanamthitta	38002	39518	16	28	8	17	1	1	5	Decentralised treatment	0.92TPD of biodegradable waste and 0.35TPD of non biodegradable waste managed	Biogas Plant 2 Nos Aerobin-5	Biogas plant - 400 Compost pits-520	Nil	MCF-3; RRF-1	At regional level	Nil	Yes	Under processing	Yes
18		Thiruvalla	52883	54992	22	100	100	55		1.4	12	Decentralised treatment	4.79TPD of biodegradable waste and 1.5TPD of non biodegradable waste	Biogas Plant 2 with capacity of 350kg Biogas Plant 1 with capacity of 750Kg	Biogas Plant - 170Nos Pipe Compost 2360 Nos	Nil	MCF-1	At regional level	Nil	No	No	Yes
19		Alappuzha	174000	180953	72	94	82	76	58	25.15	21	Decentralised treatment	Not given	Aerobic Compost (Thumboormuzhi Model) 29 units	Biogas Plant-1964Nos. Pipe compost-1263Nos. Biobin- 6000 Nos	Nil	MCF-23; RRF-3	At regional level	1 (Sarvodayapuram)	Yes	Under processing	Yes

20	Chengannur	23456	24393	10	13	60	25	0.5	0.85	3	Decentralised treatment	Not given	Aerobic Compost (Thumboormuzhi Model) - 12 bins at 1 location		Nil	MCF-1	At regional level	Nil	Yes	Under process i ng	Yes

21	Alappuzha	Cherthala	45827	47658	19	74	98	35	0.6	0.6	6	Decentralised treatment	Not given	Aerobic Compost (Thumboormuzhi Model) - 26 bins at 2 locations	Composting units-90 Biogas plant-350 Compost pits-850	Nil	MCF-1 RRF - 1	At regional level	Nil	yes	Under processing	Yes
22		Haripad	15588	16211	13	93	77	30	1	1	5	Decentralised treatment	2.02TPD is managed	Aerobic unit 5	Composting units-783 Biogasplants-87 Compost pits-1579	Nil	Plastic Shredding Machine - 1 Number	At regional level	Nil	Yes	Under processing	Yes
23		Kayamkulam	71376	74228	30	31	40	9	2.72	2.5	10	Decentralised treatment	0.06 TPD is managed	Biogas Plant Aerobic compost (Thumboormuzhi Model4 bin) Location withcapacity of 24 kg/day	Composting unit-1431 Biogas plant-364 Compost pits-4450 Pipe Compost 1950	Nil	Material Collection Facility - 1location Resource Recovery Facility 1 location	At regional level	Nil	Yes	Under processing	Yes
24		Mavelikara	26421	27477	11	69	85	6	1.3		3	Decentralised treatment	Not given	Aerobic Compost (Thumboormuzhi Model) 12 bins at 1 location with capacity of 10kg/day	Biogas plant-242 Pipe Compost 165	Nil	MCF-1 RRF - 1	At regional level	Nil	Yes	Under processing	Yes

25	Kottayam	Changanassery	127987	133102	54	21	0	Not given		3	20	Decentralised treatment	Not given	Aerobins -36 treating 2TPD	8800 Ring compost 1800 Biobin unit included in 2019-20 project and is under process	Nil	MCF-1 RRF - 1	At regional level	1	No	No	Yes
26		Erattupetta	29675	30861	13	78	2	62	3.5	3	7	Decentralised treatment	Not given	Aerobic composting (Thumboormuzhi mode) - 24 bins Biogas plant: 28 nos	750 biobin included in 2019-20 project and will supply from march 2020	Nil	MCF-1 RRF - 1	At regional level	1	No	No	Yes
27		Ettumanoor	26423	27479	11	10	57	56			4	Decentralised treatment	Not given	Biogas Plant at location withcapacity of 500kg	Ring Compost - 450 Nos Bucket Compost- 150 Nos	Nil	MCF-1 RRF - 1	At regional level	Nil	No	No	No
28		Kottayam	136812	142279	57			104			18	Decentralised treatment	Not given	Aerobic Compost (Thumboormuzhi Model)- 62 Biogas Plant 52	Biogas plant - 1400 Nos Pipe Compost- 2300 Nos	Nil	MCF-1 RRF - 1	At regional level	1 (Vadavathoor)	No	No	No

29		Pala	123000	127915	52	35	21	14	2	7	26	Decentralised treatment	Not given	Aerobic Compost (Thumboormuzhi Model) - 6 bins at 1 location with capacity of 30kg Biogas Plant 1 location withcapacity 100 Kg	Biobin - 43 Nos Vermi Compost - 26 Nos Biodigester Pot - 4 Nos Ring Compost - 59 Nos Bucket Compost -170 Nos Pipe Compost 5162 Nos	Nil	MCF-1	At regional level	Nil	No	No	Yes
30		Vaikom	23234	24162	10			64			3	Decentralised treatment	Aerobic composting (Thumboormuzhi mode)-4 bins at 2 locations Biogas Plant - 1 bin at 1 location	Aerobic composting (Thumboormuzhi mode)-3 bins at1 location	Biogas Plant - 135	Nil	MCF-1	At regional level	Nil	No	No	No
31	Idukki	Kattapana	42646	44350	18	77	98	82	3.24	3.24	11	Decentralised treatment	Not given	Not given	Composting unit-1505 Biogas plants-345 Compost pit-450	Nil	MCF-1 Nos RRF-1 No	At regional level	Nil	No	No	Yes

32		Thodupuzha	52045	54125	22	67	1	81	4	4	10	Decentralised treatment	Not given	Biogas Plant 2 Nos 1 Tonne Vermi compost - 7 bin at 1 location	Biogas Plant - 928	Nil	MCF- 2 Nos Resource Recovery Facility (300s ft)- 1 No	At regional level	Nil	No	No	Yes
33		Aluva	24110	25073	10	43	23	Not given	7.84	Not given	3	Centralisedtreatment	Not given	Centralised plant at Brahmapuram	Kitchen bin - 10 Pipe compost 43	Centralised plant at Brahmapuram	RRF - 1	At regional level	Nil	No	No	Yes
34		Angamaly	33465	34802	14	0	0	Not given	0.5	0	4	Decentralised treatment	Aerobins-2	Biogas plant 1No	Biogas - 504 Nos Pipe compost 979		RRF-2 Nos; MCF-1; Biodigester bins-300Nos SWAP shop-1 No.	At regional level	Nil	No	No	Yes

35	Eloor	31468	32726	14	36	91	81	0.87	0.87	5	Decentralised treatment	Biogas Plant - Hospitals, Hotels, TCC Canteen	Aerobic Compost (Thumboormuzhi Model) 4 bins at 4 locations with capacity 1TPD	Biogas Plant - 310 Nos Biodigester Pot - 350 Nos	Nil	MCF-1	At regional level	Nil	No	No	Yes

36	Kalamassery	71038	73877	30	42	40	19	Not given	Not given	9	Centralised treatment	Not given	Centralised plant at Brahmapuram	Biogas plant-9 Compost pit-800	Centralised plant at Brahmapuram	MCF-1; MRF-1	At regional level	1	No	No	Yes
37	Koothattukulam	17942	18659	8	0	Not given	2	0.8	0	3	Decentralised treatment	Not given	Biogas Plant 1 No with capacity 150kg	Biogas 16	Nil	Nil	At regional level	Nil	No	No	Yes
38	Kothamangalam	114574	119153	48	62	52	25	6	6	14	Decentralised treatment	Not given	Windrow compost plant	Biogas plant-202 Compost pit-2303 Kitchen bin 10000	Nil	MCF-1; MRF-1	At regional level	1	No	No	Yes
39	Maradu	44704	46490	19	12	7	66	0	0	6	Centralised treatment	Not given	Not given	Biogas Plant - 166 Nos Biodigester Pot - 215 Nos Bucket Compost - 2330 Nos Pipe Compost 940 Nos	Centralised plant at Brahmapuram	MCF-4; RRF-1	At regional level	Nil	No	No	Yes

40	Ernakulam	Muvattupuzha	30397	31612	13	7	3	28			7	Decentralised treatment	Not given	Composting - 5 bins at 1 location (not working)	Kitchen bin 24	Nil	MCF-1	At regional level	1	No	No	No
41		North Paravur	31503	32762	14	100	89	185	2	2	7	Decentralised treatment	Aerobic composting (Thumboormuzhi model) -1 bin at 1 location with capacity 4 Cubic (Not Operating)	Biogas Plant 1 bin with capacity 100kg (not working) Vermi Compost - 1 bin with capacity 1 TPD Windrow Compost - bin with 3 TPD Capacity	Biogas Plant - 25 Nos Pipe compost 2500 Nos	Nil	MCF-1; RRF-1	At regional level	1	No	No	Yes
42		Perumbavoor	28110	29233	12	29	0	12	2.32	1	8	Decentralised treatment	0.75TPD of biodegradable waste is managed 0.75TPD of non biodegradable waste is managed	Bio-gas, aerobic compost, MRF	Biogas Plant - 161 Nos Biodigester Pot - 1500 Nos Ring Compost - 1000 Nos Pot compost-894	Nil	MCF-1; RRF-1	At regional level	Nil	No	No	Yes

43		Piravam	27229	28317	12	41	100	66	2.04	2.04	5	Decentralised treatment	Not given	Not given	Biogas -150 Pipe compost-874	Nil	MCF-1; RRF-1	At regional level	Nil	No	No	Yes
44		Thrikkakkara	77319	80409	33	80	100	124	7	7	10	Centralized treatment	Not given	Not given	Biogas 31	Centralised plant at Brahmapuram	Nil	At regional level	Nil	No	No	Yes
45		Thripunithura	92522	96219	39	87	86	46	Notgiven	Not given	14	Decentralised treatment	Aerobic composting (Thumboormuzhi model) -2 bins at 2 locations with capacity 14 unit& 8 unit Biogas Plant - 1 No with 100 kg capacity	1.62TPD of biodegradable waste is managed 0.124 non biodegradable waste is managed. Thumburmuzhimodel at Anapparambu -41 ward	Biogas Plant - 300 Nos Biodigester Pot - 125 Nos Bucket Compost - 2400Nos Pipe Compost 10000Nos	Centralised plant at Brahmapuram	Material Collection Facility - 1 No (Non Operation) Plastic Shredding Machine 1 No Baling Machine 1 No	At regional level	Nil	No	No	No

46		Chalakkudy	49525	51504	21	100	60.5	54	5	5	10	Decentralised treatment	5 SWM Plants(50kgcapacity)	Thumburmuzhimodel at Anapparambu (41 ward)Vermicomposting Biogas - 3(33kg/day)	83 SWM Plants(207.5 kg capacity)	Windrow composting (2tpd)	MRF-1; RRF-1	At regional level	Nil	Yes	Under processing	Yes
47		Chavakkad	39098	40660	17	42	100	31	4	Not given	14	Decentralised treatment	Not given	Vermicomposting 1.5TPD	Biogas Plant - 614Nos Pot Compost - 548Nos	Nil	MCF-1; RRF-1	At regional level	1	No	No	Yes
48		Guruvayur	70012	72810	29	32	96	58	4	4	15	Decentralised treatment	Biogas Plant(3.5tpd)	Bio organic management	Biogas Plant-400 Composting units-2545 Compost pits-1899 Kitchen Gardening	Windrow Compost (2TPD),	MCF-1; RRF-1	At regional level	Nil	No	No	Yes

49	Thrissur	Irinjalakuda	62532	65031	26	47	86	130	5.51	1.5	12	Decentralised treatment	SWM plt-2 (600KG)	SWM-2(600kg)	Biogas Plant - 382 Nos Composting units-2577 Compost pits-5702	Nil	MCF-2; RRF-1	At regional level	1	No	No	Yes
50		Kodungallur	94883	98675	40	70	80	84	10	9	22	Decentralised treatment	Aerobic Compost (Thumboormuzhi Model)-6 bins at 3 locations with capacity of 10kg/day	Aerobic composting	Biogas Plant - 650Nos Pipe Compost 2600 Nos Compost pits-4840 Composting units-455	Windrow Compost -1No- with capacity of 4TPD	Non biodegradabl e waste segragated at source level and collected and handed over to Clean Kerala Company andother private agencies for	At regional level	Nil	No	No	Yes
51		Kunnamkulam	54071	56232	23	100	100	6	3	3	10	Decentralised treatment	Aerobic compost (Thumboor Mozhi model)	composting plant 1.889TPD Biodegradable waste managed, 0.81 TPD Non biodegradabl	Bio bin -1628 Nos Biogas-73, Compost pits-2906, Compost unit-508	Windrow Composting Plant-4.5 TPD; 5 Acres of land is available with the llocal bodies for waste processing.	MCF-1; RRF-1	At regional level	Nil	No	No	Yes

52		Vadakkanchery	15674	16300	23	34	100	40	1.6	Nil	9	Decentralised treatment	1.93TPD waste managed(Bio&Nonbiodegradable)		Compost units 1918, Biogas-100,Compost pits-4471	Nil	MCF-2; RRF-1	At regional level	1	No	No	Yes
53		Cherupl assery	30730	31958	13	58	89	22	0.2	1.2	4	Decentralised treatment	0.482 TPD biodegradable waste managed, 0.427 TPD Non biodegradable waste managed.	1.43 TPD Nonbiodegradablewaste managed.	Pipe Compost 1000 Nos Biogas Plant - 200 Nos Composting units-1050	Nil	MCF-1; RRF-1	At regional level	Nil	Yes	Under processing	Yes
54		Chitttur-Thattamangalam	33000	34319	14	100	100	56 Nos	2		7	Decentralised treatment	Biogas Plant - 5 bins at 5 locations	Aerobic bin (Thumboormuzhi) - 8 bins at location with capacity 50kg/day/bin	Biogas Plant - 55 Nos Bucket Compost - 1168 Nos Ring Compost - 239Nos Composting units-1407	Aerobic Windrow Composting Plant -1 bin with capacity 3 Tons/day	MCF-7; RRF-1	At regional level	Nil	Yes	Under processing	Yes
55		Mannarkadu	39463	41040	17	Not given	84	58	0	0	6	Decentralised treatment	Not given	Not given	Pipe compost-40;biogas plant -20; Biocomposter-315	Nil	MCF-1	At regional level	Nil	No	No	Yes

56	Palakkad	Ottapalam	53792	55942	23	81	89	56	1.4		8	Decentralised treatment	Not given	Not given	Biogas plant-58 Pipecompost 182	Windrow compost	MCF-1; RRF-1	At regional level	1	No	No	Yes
57		Palakkad	131000	136235	55	40	11	156	0.2	1	29	Decentralised treatment	Not given	Biogas plant 1	Pipe compost-2500; Ring compost-60	Windrow composting is in operation. 15 Acres of land is available at Kanjikodefor setting up solid waste processing plant. Tendering process is going on. Asper annual report 2.1 Hectre of land is available.	MCF-7; RRF-1	At regional level	1(BPL Koottupatha)	Yes	Under processing	Yes
58		Pattambi	28632	29776	12	0	0	20	1		3	Decentralised treatment	Not given	Open composting in trench	Biogas plant-69		MCF-1; RRF-1	At regional level	Nil	Yes	Under processing	Yes
59		Shornur	43533	45273	19	100	82	65	4.5	2.8	6	Decentralised treatment	Not given	Biobin	Biogas 276	Nil	MCF-1; RRF-1	At regional level	Nil	No	No	Yes
60		Kondotty	28794	29945	12	80	12	160	0.12	0.12	4	Decentralised treatment	Not given	Not given	Pipe compost-420; Biogas plant-18(45kg/day); Ring compost-123	Nil	MCF-1	At regional level	Nil	No	No	No

61	Kottakkal	44382	46156	18	13	26	15	1.2	1.2	5	Decentralised treatment	Biogas Plant - 1 number with capacity of 250kg/day (not working) Aerobic bin compost-10bins	Aerobic compost - 12 bins	Not given	Incinerator. MRF,MCF,SWAP SHOP, BIOBIN, Ring compost under construction)	Material Recovery Fcaility - 3 number Plastic Shredding Machine - 1 number Baling Machine - 1 number, Reuse (Swap shop, Repair shop, Recycling industries) -1 unit	At regional level	Nil	No	No	Yes
62	Malappuram	101000	105036	43	80	27	24	2.2	2.2	13	Decentralised treatment	Not given	Composting	Biogas plant-31; Composting units-1061	1 Hectre land is available for waste processing	MCF3; RRF-1	At regional level	Nil	Yes	Under process i ng	Yes

63	Malappuram	Manjeri	97104	100984	41	0	44	16	3	1	15	Decentralised treatment	Biogas-1 (1000kg)	Aerobic Compost (Thumboormuzhi model)-8 binsat ward33 Biogas Plant at ward 14 Vermi Compost-Trenching Ground-500kg	Pipe Compost 2844 Nos	Windrow Compost-1 TPD Trenching Ground-1 ton	MCF-3	At regional level	1	Yes	Underprocessing	Yes
64		Nilambur	46366	48219	20	37	Not given	29	0.3	0.3	8	Decentralised treatment	Not given	Not given	Biogas Plant - 71 Nos. Pipe compost-135; Biocomposter-75	Nil	Temporary	At regional level	Nil	No	No	Yes
65		Parappanangadi	35243	36651	15	100	53	90	1	1	4	Decentralised treatment	Not given	Not given	Biogas Plant - 200 Nos Biodigester Pot - 300 Nos	Nil	MCF-1; RRF-1	At regional level	Nil	Yes	No	Yes

66	Perinthalmanna	49723	51710	21	38	34	52	6	6	12	Decentralised treatment	Not given	Windrow Compost - 1 No	Bio bin - 1000 Nos Biogas Plant - 480 Nos Biodigester Pot - 1189 Nos Pipe Compost 700 Nos	Nil	Material Recovery Facility - 1No Plastic Shredding Machne - 1No Baling Machne - 1 No	At regional level	Nil	Yes	Under processing	No
67	Ponnani	90491	94107	38	80	70	49	4	4	15	Decentralised treatment	Not given	Aerobin -1	Pipe compost-364; Biogas plant-22; Biocomposter-686; Bucket compost-235	One (Private parties property used for landfilling)	MCF-8; RRF-1	At regional level	Nil	No	No	Yes
68	Thanoor	44973	46770	19	29	79	0	0.3	0.3	6	Decentralised treatment	Biogas Plant in 4 locations	Not given	Pipe Compost 200 Nos ODF Latrine - 400 Nos Ringcompost-67	Nil	MCF-1; RRF-1	At regional level	Nil	No	No	Yes
69	Thiroorangadi	56632	58895	24	45	25	28	1.4	1.4	10	Decentralised treatment	Not given	Not given	Pipe Compost 1850 Nos	86 Cents of land is available	MCF-1	At regional level	Nil	No	No	Yes
70	Tirur	56058	58298	24	100	100	38	1.7	1.1	8	Decentralised treatment	Not given	Aerobin	Pipecompost-230(0.21TPD); Kitchen bin-1480(1.2TPD); Biogas plant-	Nil	MCF-1; RRF-1	At regional level	1	No	No	Yes

71		Valanchery	35795	37225	15	100	30	13	0.04	0.04	5	Decentralised treatment	Biogas plant -14	Not given	Biogas plant-28; Composting-230	Nil	MCF - 1	At regional level	Nil	No	No	Yes
72	Kozhikode	Faroke	32122	33406	14	48	5	18	2	2	6	Decentralised treatment	Not given	Aerobin-1 (50 kg/day)	Pipe compost 1550; Biogas plant-50;	Nil	MCF-1	At regional level	Nil	No	No	Yes
73		Koduvally	48678	50623	21	100	100	72 (Harith a Karma Sena	0.6	0.6	7	Decentralised treatment	Not given	Not given	Not given	Nil	MCF-1	At regional level	Nil	Yes	Under processing	Yes
74		Koyilandy	71873	74745	30	60	8	100	10	2.5	11	Decentralised treatment	Not given	1. Thumboor muzhi model composting - 11 unit 2. biogas plant - 500 kg per day	1. Portable biogas 250 nos 2. pipe, ring and vermi compost - 1933 nos	Nil	1. Material Collection Facility - 2 2. MRF - 1 3. plastic shredding mechine- 2 4. Bailing Mechine 1	At regional level	Nil	No	No	Yes
75		Mukkam	40670	42295	17	90	91	38	0.525	0.525	5	Decentralised treatment	Not given	Not given	Kitchen bin 301	Nil	MCF-1	At regional level	Nil	No	No	Yes

76		Payyoli	23576	24518	10	100		Not given	0.25	0.25	3	Decentralised treatment	Not given	Not given	Pipe compost 100 Kitchen bin 300	Nil	Not given	At regional level	Nil	No	No	Yes
77		Ramanattukara	35937	37373	15	100	100	Nil	0.01	0.2	4	Decentralised treatment	Not given	Not given	Ring Compost - 320 Nos	Nil	Not given	At regional level	Nil	No	No	Yes
78		Vadakkara	75295	78304	32	89	100	63	7	10	18	Decentralised treatment	Compost-20, Thumboormuzhi-1, Ring compost-1	Not given	Pipe Compost 520 Nos, Ring compost-615, Biogas- 100, Bucket compost-450,Biobin-150		MCF-13, RRF-2	At regional level	1	No	No	Yes
79	Wayanad	Kalpetta	31580	32842	14	60	81	32	6	6	4	Decentralised treatment	0.508 TPD Biodegradable waste managed,0.561TPD Non biodegradable waste managed.	1.3 TPD Biodegradable waste managed, 0.869TPD Nonbiodegradable waste managed.	0.4 TPD Biodegradable waste managed, 0.11 TPD Nonbiodegradable waste managed	8 Acres of land is available in VellaramkunnuKalpetta.	MCF-1; RRF-1	At regional level	1	Yes	Under processing	Yes
80		Mananthavady	34663	36048	15	40	47	26	0.2	0.2	4	Decentralised treatment	1.7401 TPD Biodegradable waste Managed.		Vermicomposting 317 Biogas 217 Pipe compost 4100		MCF-1	At regional level	Nil	No	N0	Yes

81		Sulthanbathery	23333	24265	10	0	0	23	0.5	9.1	14	Decentralised treatment		Not given	Biogas plant - 192	0.5 Acres of land is available in Sulthanbathery construction of the plant is going on.	MCF-1	At regional level	1	No	No	Yes
82		Anthoor	36290	37740	16	100	98	28	1	1	5	Decentralised treatment	Aerobic Compost (ThumboormuzhiModel) - 6 units at3 locations with capacityof 2000 kg/bin; Biogas Plant - 1 unit with capacity 40kg/day	Not given	Biogas Plant - 179 Nos Ring Compost - 3033 Nos	Nil	Material Collection Facility - (40m2) - 1No; Plastic Shredding Machine - 1No; Baling Machine - 1No; Reuse strategy(SWAP Shop, Repair shop etc.) Swap shop -10	At regional level	Nil	No	No	Yes
83		Iritty	40369	41982	17	98	65	39	2.5	2.25	7	Decentralised treatment		Windrow Compost - 1 bin with capacity of 5TPD (Not working)	Biogas plant5 Pipe compost 110 Ring compost 341	Nil	MCF-1	At regional level	Nil	Yes	Under processing	Yes

84	Kannur	Koothuparambu	29619	30803	13	100	90	64	2	0.5	13	Decentralised treatment	Aerobic Compost (Thumboormuzhi Model) - 5 Bins	Vermi composting andtrenching Aerobic Compost (Thumboormuzhi Model) - 21 Bins	Pipe compost 2752 Nos	Nil	Material Collection Facility - 310 sqft Material Recovery Facility - 4000 sqft	At regional level	1	No	No	Yes
85		Mattanur	47078	48959	20	96	69	52	13	13	7	Decentralised treatment	Not given	Biogas Plant 1 bin with capacity 250kg/day Vermi Compost -1 bin with capaciy 5TPD	Ring compost 2500 Nos. Pipe Compost 1500 Nos.	Nil	MCF-1; RRF-1; Plastic Shredding Machine - 1number	At regional level	Nil	No	No	Yes
86		Panoor	17438	18135	8	60	26	40	2.5	0	2	Decentralised treatment	Not given	Not given	Kitchen bin and ring compost - 1200	Nil	Nil	At regional level	Nil	No	No	Yes
87		Payyanur	72111	74993	30	100	71	44	6	6	15	Decentralised treatment	Not given	Windrow composting	Pipe compost-1750;Kitchen bin-645;other units-1440	Nil	MCF-1;RRF-1; Plastic shredding	At regional level	1	Yes	Under processing	Yes

88		Sreekantapuram	17630	18335	8	100	88	30	0.5		3	Decentralised treatment	Not given	Vermi Compost - bin with capacity -1 TPD(Not working since2007)	Ring Compost - 125 Nos	Nil	Road side locked bins for collecting non biodegradablewaste - 20 locations	At regional level	Nil	No	No	Yes
89		Thalassery	92558	96257	39	51	1	97	5	5	20	Decentralised treatment	Not given	Biogas Plant 3 bins at 3 locations withcapacity of 1Ton	Biogas Plant - 1021Nos Pipe Compost 5200Nos	Nil	MCF-1	At regional level	1	Yes	Under processing	Yes
90		Thalipar ambu	72465	75361	31	87	19	34	1.5	1.5	11	Decentralised treatment	Not given	Windrow Composting	Composting units-4800	Nil	MCF-1; RRF-1	At regional level	Nil	No	No	Yes
91	Kasaragod	Kanhangad	73536	76475	31	100	28	43	8	20	11	Decentralised treatment	Aerobic Compost (ThumboormuzhiModel)- 9 bins at 2 locations with capacityof 1000 kg/bin	Aerobic Compost (ThumboormuzhiModel) - 20 bins at 3 locations withcapacity of 1000 kg/bin	Biogas-2220 Ring compost-2500, Kitchen Bin-17400, Pipe compost-3222.	0.5 Hectre land is avaiilable.	Material Collection Facility -(1000sqft)- 1No Resource Recovery Facility - 1000sqft - 1No Plastic Shredding Machine - 1No. Baling Machine - 1No.	At regional level	1	Yes	Yes	Yes

92		Kasaragod	131000	136235	55	86	32	17	3	3	20	Decentralised treatment	Not given	Not given	Pipe compost-800, Biogas-13, Ring compost-8244	Nil	MCF-4; RRF-1	At regional level	1	Yes	Under processing	No
93		Nileshwaram	40802	42433	17	100	100	30	1	8	8	Decentralised treatment	Biogas-44, Thumboor muzhi (4 unit having2 bins),(1 unit having4	Aerobic compost (21bin 1 unit, 4bin 1unit, 3bin 2 unit)	Biogas-2840 Pipe Compost 2840 Nos, Ring compost-1998, Biobin-3350	80 Cents land is available.	MCF-1; RRF-1	At regional level	Nil	Yes	Yes	Yes
					3521				**880**	**932**	**1837**											

VI. Bio-medical Waste Management:

As per Annual Report in the whole state for the year 2019-2020:

- Total Bio-medical generation: **42932kg/day**
- No. of Hospitals and Health CareFacilities:**13869**
- Status of Treatment Facility/ CBMWTF: The Common Bio Medical WasteTreatment Facility in Kerala is IMAGE situated at Kangikkode, Palakkad which treated about **36852.931 kg/day** of Bio-Medical Waste.

VII. Hazardous Waste Management:

As per Annual Report in the whole state for the year 2019-2020:

- Total Hazardous Waste generation: **314488.2 MetricTonne/year**
- No.ofIndustriesgeneratingHazardouswaste:**1617**
- TreatmentCapacityofallTSDFs:**90MetricTonne**
- Avg.QuantityofHazardouswastereachingtheTSDFsandTreated:**43.732MetricTonne**
- Details of on-going or proposed TSDF :**Nil**

VIII. Plastic Waste Management:

- Total Plastic Waste generation: **1,31,400TPA**(as per annual report **in the wholestate** for the year 2019-2020.
- Treatment/ Measures adopted for reduction or management of plastic waste:

  - Ban of single use plastic items including plastic carry bags 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 Envtdated16/02/2020

  - **Material Collection Facility - 837**; **Resource Recovery Facility-151**; Recyclable plastics (hard and soft plastics) are taken by rag pickers for recycling in the State and outside the State; Clean Kerala Company collected 655.59 T of plastic(soft) in the year 2019-2020. Tarring of 308.92 km of PWD roads and 764.8 km of LSGD roads was done during the year 2019-20. 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.

  - As per the direction in GO(Ms) No 6/2019/Envt Dated 27.11.2019 officials from District Pollution Control Board inspected various shops and market places through out the state and identified 93 number of violators. Notice imposing and mahasar were issued to the violators. Notice imposing Rs 10,000/- issued as fine to each violators.

IX. Details of Alternate Treatment Technology being adopted by the State/UT:

Electro coagulation method is being adopted for sewage treatment in STPs. Consent for the same is being issued by the SPCB subject to certain conditions such as safe disposal of sludge uninterrupted power supply, regular maintenance of electrodes, etc.

X. Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in situ treatment:

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 waterbodies.

XI. Details of Nodal Officer appointed by Chief Secretary in theState/UT:

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 ofprogressandtoactasanaccountablepersontotheChiefSecretaryforthepurpose.

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 DepartmentandStaffofficertoChiefSecretaryasnodalofficers&members.

XII. Details of meetings carried under the Chairmanship Chief of Secretary inthe State/UT:

Regarding OA 514/2019 (Solid Waste Management) Chief Secretary convened meetings on 22.09.2020 and 25.09.2020 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. Meeting of State Level Advisory Committee (SLAC) on Waste Management, chaired by Chief Secretary is being conducted in the State regularly to discuss the various matters. 38 such meetingswereconductedinKeralasofar.LastSLACmeetingwasconductedon12.02.2021.

Meetings were held by the Chief Secretary on 11-12-2020, 30-03-2021 and 05-04-2021 with the Stake holder Departments/ Authorities, to review the progress in implementation of the projects taken up on the basis of orders of the Hon'ble National Green Tribunal in O.A. No. 673 of 2018(PZ).

XIII. Latest water quality of polluted river, its tributaries, drains with flow detailsand ground water quality in the catchment of polluted river:

Latest Monthly Progress Report, **Analysis report of 21 Polluted River Stretches & Overall Status of Water Quality Analysis as per April 2021** are attached as **Annexure I**.

XIV. Ground water regulation: As per the consolidated report submitted in O.A.No.496/2016,

the Ground water Department is implementing a “Scheme for Ground water Conservation and Recharge”. Under this scheme, rain water collected from the roof-top is harvested for recharging the aquifer through dug wells and recharge pits. The recharging of deep aquifers through bore wells are also being experimented. The total budget outlay during the period 2019- 2020 was 450 lakhs. It is estimated that there are about 65Lakhs dug wells in Kerala and the ground water extractions by means of traditional dug wells are prevalent source of fresh water. There are number of public dug wells left abandoned and needs renovation. These dug wells can be considered as suitable stretches to recharge ground water. The Central Groundwater Board has prepared a Block wise master plan in 2015 to take up artificial groundwater recharge to groundwater. The same can be used as a guideline to stream line groundwater recharge activities of the Department.

The State Government has enacted the Kerala Groundwater (Control and Regulation) act 2002 to provide for the conservation of groundwater and for the regulation and control for its extraction and its use in Kerala. The State Groundwater Authority has been constituted on 16.01.2004 to notify the area where groundwater abstraction is to be regulated. As per the Act Groundwater User’ refers to the person who are using ground water from a pumping well (> 1.5 HP for Open dug wells and > 3 HP for BW/TW) for any purpose including domestic purpose. In notified blocks of the state, permiotit required for the construction of new groundwater abstraction structures.

The Groundwater Department has been conducting mass awareness programmes to public., students, people’s representatives, government officials etc. on groundwater conservation and management in all Districts under the Plan Scheme “Control and Regulation of Groundwater Exploitation for the effective groundwater management. During the last 4 years, the department has conducted more than 100 numbers of awareness programmes across the State.

The Ministry of Water Resources ,River Development &Ganga Rejuvenation (Central Groundwater Authority) has recently issued a new guide lines to regulate and control groundwater extraction in the country in pursuance of the directions of Hon'ble National Green Tribunal and the powers conferred under section 5 of the Environment (Protection) act, 1986 (29 of 1986) dated 24thDecember2020.

XV. Good irrigation practices being adopted by the State:

Irrigation in Kerala is classified into two schemes.

1) Major Irrigation and Medium Irrigation
2) Minor Irrigation

As per the classification followed by the department, schemes having a cultivable command area upto2000ha are treated as minor irrigation works. Medium irrigation works are those with irrigable command area of more than 2000 ha, but less than 10,000 ha. Those schemes above 10,000 ha are classified as Major irrigation schemes. Surface flow irrigation method is currently practiced in Kerala. As the department is more focusing on effective utilization of available water for irrigation as well as for its efficient use, new types of irrigation methods like micro/community irrigation for cash crops and horticrop are proposed under this scheme.

1) Major Irrigation and Medium Irrigation

The Irrigation department develops and maintains major and medium irrigation schemes/projects across the state. The primary activity of the Department is providing irrigation facility to the farmers of the State through its system comprising reservoirs, main canals, branch canals, feeder canals and other related infrastructure. The department maintains water distribution through the canal system. Water distribution is being carried out based on the cropping pattern of a particular area and a water distribution calendar prepared and approved by a committee headed by the District Collector with members of farming community, other stake holders and department officials. For proper distribution and maintenance of the canals Water Users Association (WUA)/ Farmers Association plays an important role.

2) Minor Irrigation

Minor Irrigation schemes are divided into Class-I and Class-II depending on the ayacut served. Schemes serving above 50Ha up to 2000Ha are classified as MI Class-I. Lift irrigation schemes are also Minor irrigation schemes serving at least 40Ha.Aims to Construct RCBs, SWECBs, ponds, VCBs, check dams, salt water barriers, storage weirs, cross bars, and protection works etc.

a) MI Class-I schemes

Minor works like improvements to tanks and rivulet, construction of check dams, sluices, regulators, bunds, vented crossbars, salt water barriers, layout of channels and drainage structures etcare usually undertaken under MI Class-I schemes.

b) MI Class-II Schemes

Minor irrigation works including construction of vented cross bars, canals, improvements to natural drains etcare taken up under this scheme.

c) Lift Irrigation

- Lifting of water is required for irrigating fertile land at a higher elevation where gravity flow of stored water is not possible. Although mechanical lifting is required, these schemes are very useful and serve the marginal farmers of the State.
- Optimum utilization of water by supplying designed quantity
- Works involving lifting of water with a command area not less than 40 hectares come under this category.
- This will increase in the ground water table in high altitude areas, Ensure water availability to farmers before the cropping period.
- This will reduce agricultural loss in high altitude areas due to water scarcity, their by reducing distress to farmers.
- At present the Irrigation Department has under its control 450 Lift Irrigation Scheme (LI schemes) with a total Ayacut of43170ha.

d) Micro Irrigation

- Micro-irrigation system is a modern method of irrigation in which water is delivered slowly. Usually in the form of discrete droplets, continuous drops, streams, etc. Micro-irrigation system is popular these days for its

low cost and water-efficiency.

- The benefits of micro irrigation and precision farming are well demonstrated with an average increase in yield by three times. Pepper as a case in point shows enhancement from 1.9 kg/wine to 6/wine on precision agriculture. Coconut also shows increase in productivity to 150 nuts per plant as against 45 without precision irrigation support.
- In the coming year department is planning to implement at least one micro irrigation scheme in each district with the coordination of line departments and farmers. Steps are initiated to identify the location as well as crops in coordination with the agriculture department.

XVI. Rain Water Harvesting: In compliance with the Hon'ble NGT Order dated 11.09.2019 in O.A. No. 496/2016, the consolidated report of Kerala State regarding the present status of the implementation and action plans on rain water Harvesting for conservation of water was submitted by the KeralaStateGovernmenton27.11.2019.Thesameisattachedas**AnnexureII**.

The State Groundwater Department has been implementing a scheme for Groundwater Conservation and Recharge under plan fund made available since 2004-05. The project component includes roof top rainwater harvesting for groundwater recharge through dug wells, recharge pits, bore wells and recharge shafts and construction of subsurface dykes and small check dams un micro water shed basis. The recharge schemes are being implemented as a longterm measures to achieve sustainable groundwater development in the State. The Departmentis engaged in recharging groundwater through roof top rain water harvesting in public buildings and government schools and giving priority to implement such structures in notified blocks. The Department has successfully implemented roof top rainwater harvesting through recharge pits to enhance groundwater levels of dug wells in the Kattakkada Constituency of Thiruvananthapuram District. The Constituency was officially declared in November 14th 2019 as the first assembly constituency in Kerala to implement artificial groundwater recharging structures in all Government schools and offices. The State Groundwater Department has implemented 169 nos of recharge pit/direct dug well recharge schemes, 4 check dams and one sub surface dyke during the 12th plan period. In the 13th plan period as on October 2020, the Department has completed 370nosofrechargepit/dug well recharge

schemes and 18 nos of bore well recharge schemes.

The Department has also taken initiatives to implement roof top rainwater harvesting structures in order to replenish the aquifer system in Chittur (Over- Exploited), Malampuzha and Kasaragod (Critical) blocks under Jal Shakti Abhiyan Programme by Ministry of Jal Shakthi Government of India.

XVII. Demarcation of Floodplain and removal of illegal encroachment

a. Kerala receives about 90% of the annual rainfall during the monsoon months from June to August and from October to November. The remaining period from December to May is practically dry. Most of the rain water received during monsoon period flows to sea within 48 hours of rainfall due to the character of the geographic terrain of the state.

b. State Disaster Management plan 2016 was prepared by National Centre for Earth Science Studies in 1:50,000 scale using satellite images.

c. Based on the request of central water commission, Government of Kerala constituted Regional Committee for scientific assessment of Flood prone areas in Kerala.

d. Flood-level marking for the flood affected rivers has been carried out. Steps have been taken for conducting the studies regarding Flood plain Zoning. Due to the peculiar topography and dense population, evacuation of people from these zones is difficult.

XVIII. Maintaining minimum e-flow of river.

a. As per order of the Hon'ble NGT dated 9/8/2017 in OA no 498/2015 it is mandatory to maintain 15% - 20% of average lean season flow.

- For lean flow calculation the process of data collection for the last 25 years of all 44 rivers during summer months ie. from January to May is been undertaken.
- Study of individual rivers needs to considered for maintaining e- flow during lean season. Storage structures/diversion structures needs to proposed at certain locations to regulate thee-flow.

XIX. Plantation activities along the rivers:

Proposal submitted by Irrigation Department. Waiting for approval.

XX. Development of biodiversity park:

As per the action plan for Kallai River, a bio park in Kozhikode district is proposed by Irrigation Department and as per the action plan of Karamana river, Bio diversity park at Karamana is implemented by Irrigation Department and 96% work is now completed and remaining work is in progress. Also, for other action plans of polluted river stretches, proposals are submitted by Irrigation Department and action is initiated.

As stipulated by the Biological Diversity Act 2002, Biodiversity Management Committees (BMC) are mandated with conservation of Biodiversity in their localities. In Kerala BMCs has being established at all 3 tiers of local bodies. As part of the 13thfive year plan, KSBB had started a project to empower Local Self Government Biodiversity Management Committee (BMC) as Model BMC to conserve Biodiversity by providing a minimal assistance of Rs 5.00 lakh. The lists of various projects relating to river bank conservation by planting suitable species/ biodiversity parks in the river banks being undertaken by BMCs during the last two years are given below:

1. Ayiroor Grama panchayat, Pathanamthitta– Planting of Homonoiariparia along the banks of Pamba River
2. Ayarkunnam Grama panchayat, Kottayam - Conservation of Homonoiariparia along the banks of Meenachil River.
3. Mariyapuram Grama panchayat, Idukki - Harithapuram park- Eco restoration and conservation of Periyar River bank severely damaged due to flood.
4. KotturGrama panchayat, Kozhikode - (a) Establishment of Biodiversity Park near Kuttiyadi river (b) Biodiversity gardens (50 units)
5. Vanimel Gramapanchayat, Kozhikode - Conservation of Vanimelriverbank
6. Kurumathur Grama panchayat, Kannur – (a) Afforestation along tributaries of river banks of Kuttikol river, Valapattanamriver (b) Planting of Pandanus along canal banks
7 .Muzhakunnu Gramapanchayat, Kannur - PuzhayoraOushada

SughandhaUdyanam along the banks of Aralam river.

As part of Rebuild Kerala Initiative a project on Riverine Biodiversity Rejuvenation of Pambafor an amount of Rs 200 crore is being undertaken. The project aims at Protecting riverbanks and conservation of riparian vegetation using locally available plants. The major activities ongoing are:

1. Restoration of riparian vegetation on degraded river banks in selected 10 Grama Panchayats (Ayiroor, Cherukol, Kozhenchery, Ranni- Angadi, Ranni- Pazhavangadi, Ranni, Ranni-Perunad, Vadasserikkara, Vechoochiraand Naranammoozhi) belonging to three Block Panchayats viz., Elanthoor, Koipuram and Ranniin Pathanamthittadistrict
2. About 77,000 saplings of 93 species of riparian plants are being planted along a stretch of 93km.
3. Ensure sustainable livelihood for the local people through providing training for developing microenterprises and establishing nursery of native species. Develop a sustainable community based management model of conservation of aquatic ecosystems.
4. To create awareness and sensitize local population and students for promotion of riparian ecosystem services.

XXI. Rise 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.

XXII. Mel River being adopted by the State & Action Proposed for achieving the bathing quality standards:

Tirur-Ponnai river, Malappuram

XXIII. Status of Preparation of Action Plan by the 13 Coastal States:

As per the NGT order in O.A 829/2019 dated 22.06.2020 regarding the remedial action to restore sea water quality along the Indian Coastal areas, the Hon'ble NGT ordered that "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 fecal coliform. CPCB may further continue efforts on compilation of River Basin-wise data. Action plans be firmed up with Budgets/Financial tie up." In compliance with the order, CPCB instructed that the State PCB shall associate National Centre for Coastal Research, Chennai under Ministry of Earth Science for monitoring and assessment of coastal water within the jurisdiction of the Kerala State up to 5 km from shore and to evolve strategies for protection of the coastal areas in association with Coastal Zone Management Authority in the State and Prepare time bound comprehensive action plan along with implementing agency in consultation with Kerala State Coastal Zone Management Authority for control of coastal pollution in Kerala State. Also the State Government has instructed the Board to prepare action plan by consulting CUSAT .Based on this, the Member Secretary of Kerala State Pollution Control Board has conducted meeting with officials of CUSAT, National Centre for Coastal Research, Kerala State Coastal Zone Management Authority and also with the field level officers through video conferencing**.. Coastal Action Plan prepared has been forwarded to the concerned Stakeholder Departments for their remarks.**

XXIV. <u>Regulation of Mining Activities in the State/UT:</u>

Indian parliament has enacted the Mines & Minerals (Development &Regulation) Act, 1957 and it stipulates for the conservation, prudent and discriminate exploitation of minerals with a view to secure maximum benefit to the community. In exercise of powers conferred by section 13 of Mines and Minerals (Development & Regulation) Act 1957, the Central Government has framed the Mineral concession Rules, 1960. The Central Government has also framed the Mineral Conservation and Development Rules, 1988 in exercise of the powers conferred by section 18 of the Act. These Rules are applicable to all minerals except coal, atomic minerals and minor minerals. The powers of framing rules for minor minerals have been delegated to the State under section 15 of the mines Act. In exercise of the powers conferred by section 15 (1) of

the Act the State has framed the Kerala Minor Mineral Concession Rules 2015 and Kerala Minerals (Prevention of Illegal Mining, Storage and Transportation) Rules 2015 for the regulation and extraction of minor minerals. The Central Government in exercise of powers conferred by section 18 of the Act has also framed the Granite Conservation and Development Rules, 1999 for conservation & systematic development and scientific mining of the granite resources. The grant of reconnaissance permit, prospecting license or mining lease are governed by the central Act. The State with the prior approval of the Government of India grants permission for reconnaissance permit, prospecting license or mining lease for major minerals. The state Government issue quarrying permits and leases for minor Minerals based on the Kerala Minor Mineral Concession Rules, 2015. Other Acts and Rules which govern the mineral administration of India applicable to the State are the following:

1. The Mines Act, 1952 (Act 35 to 1952)
2. The Mines Rules, 1955 (35 of 1952)
3. The Metalliferous Mines Regulations, 1961
4. The Mines Rescue Rules, 1985
5. Mines Vocational Training Rules, 1966
6. Payment of wages (Mines Rules , 1966)
7. Payment of undisbursed wages (mines rules, 1989)
8. The Indian Explosive Act, 1884
9. Air (Presentation & Control of Pollution) Act, 1981(14 of 1981)
10. Environment (protection) Act, 1986 (29 of 1986)
11. Indian Registration Act, 1908 (Central Act of Act 16 of 1908)
12. Kerala Protection of River Banks and Regulation of Removal of Sand Act, 2001
13. Kerala paddy field and wetland conservation Act, 2008.
14. Kerala Panchayath Act.

There is no largescale mining activity in Kerala as in other parts of the country. Almost all the mines are open cast and limited in areal extent. The important mines of major minerals are china clay, laterite/bauxite, limestone and lime shell. Mineral sands and silica sand are excavated by scooping and quartz is being extracted by taking trenches and pits. The important minor minerals in the state

are granite, building stones, dimension stone, laterite, tile/brick clay and ordinary sand. The state owns mineral deposits like placers, china clay (kaolin), limestone, silica sand, bauxite, graphite, iron ore, granite etc. The major mineral based industries like Indian Rare Earths Ltd. (Chavara), KeralaMinerals nadMetals Ltd. (Chavara), Malabar cements (Walayar), Travancore cements Ltd. (Kottayam), Kerala ceramics (Kundara) Travancore Titanium products Ltd. And English Indian Clays Ltd, Thiruvananthapuram, Excel Glass Industry, Alappuzha, KeralaClays

and Ceramic Products Ltd. (Pazhayangadi) are some of the mineral based industries working in the State since several years. A number of tile based industries are also functioning mainly in Thrissur and Kozhikide districts.

In exercise of the powers conferred by section 15(1) of the Mines and Mineral (Development &Regulation) Act, 1957, the State hasframed the Kerala Minor Mineral Concession Rules 1967 for regulating the extraction of minor minerals. The State with prior approval of the Govt. of India grants permission for reconnaissance permit, prospecting license or mining lease for the first schedule minerals on first cum first served basis. In addition to EIA requirements as stipulated by the Central Govt, an EIA report is insisted on all mining activities before granting mining lease. No quarrying permits or leases are granted in the State unless there is a Mining plan duly approved by the competent authority. Afforestation of the reclaimed areas is promoted. Environment Rehabilitation is insisted in all mining projects.

The Kerala District Mineral Foundation Rules 2018 has been formed with an objective to work for the interest and benefit of persons and area affected by mining related operations. The permissible activities under District Mineral Foundation includes among other things, developing sources of irrigation, development alternate sources of energy and rain water harvesting, conservation measures of biodiversity of the affected areas.

XXV. Action against identified polluters, law violators and officers responsible for failure for vigorous monitoring:

Notices have been issued from the Board to 51 Grama Panchayaths, 11 Urban local bodies, 127 health care facilities and directions have been issued to 2 Corporations for violation of the rules noticed.

Sd/-

MEMBER SECRETARY

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

RIVER KARAMANA, THIRUVANANTHAPURAM

S. No.	Activity to be monitored	Timeline	Submission of progress by state/UT-Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation		
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured		
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning		
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose.		
	• Monitoring at State level must take place		
6	Progress report may be furnished by the State/UTs to • Secretary,Ministry of Jal Shakti • Member Secretary,CPCB		

6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment. (II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline (III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure,Gap Analysis, Proposed along with completion timeline, No. of industries and complying status (iv) <u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline (v)Latest water quality ofpolluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;		

	(vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc. (vii)Ground water regulation (viii) Adopting good irrigation practices, (ix) Protection and management of food plain Zones (FPZ), (x) Rain water harvesting, (xi)Maintaining minimum Environmental flow of river (xii) Plantation on both sides of the river (xiii) Setting up biodiversity parks on flood plains by removing encroachment		

ACTION PLAN FOR RIVER KARAMANA, KERALA

1. Short termplan

Maintenance and de-bottlenecking of existing seweragenetwork

No.	Activity	Implementing agency	Time line	Progress till 03-05-2021	% works completed	Details of works remaining
2.1.1	Pumping lines from the terminal pumping stations namely Kuriyathi, Pattoor, Kannammoola and Enchakkal pumping stations are to be connected directly to STP at Muttathara	Kerala Water Authority	May 2019			
	Kuriyathi pumping line					
2.1.2	Rehabilitation/upgradation of Thaliyal and Aranoor Sewerage Pump house by rehabilitation of existing well, construction of new well and grit chamber, installation of new pump sets	Kerala Water Authority	May 2020			
2.1.3	5 MLD sewage treatment plant at Medical College	Kerala Water Authority	May 2020			
2.1.4	Installation of adequate pumps in Mudavanmughal and Enchakkal pumping stations	Kerala Water Authority	March 2020			

2.1.5	DG sets in all lift and pumping stations – Mudavanmughal, Aranoor, Thaliyal, Kuriyathi, Pattoor, Kannammola,Pattom, Murinjapalam and Enchakkal	Kerala Water Authority	May 2020			
2.1.6	Reconnect sewer at Rajaji Nagar, stop outflow of sewage into Amayizhanchan thodu, control storm water entry into sewer to avoid overflow in Thampanoor area Sewage generated in Rajaji Nagar shall be diverted to main sewer line Sewage generated in Thoppil area shall be diverted main sewer line	Kerala Water Authority	Dec 2020			
2.1.7	Discharge of sewage in Parayilkadavu shall be stopped as there is overflow of sewage reaches in houses having sewerage connection and this may leadtodischargeofsewageintoRiver Karamana	Kerala Water Authority	Completed			
2.1.8	Divert the sewer line from the School compound of Government Karamana High School	Kerala Water Authority	Awarded			

2.1.9	**Rehabilitation by laying new lines increasing size of undersized main and reconstruction by dilapidated manholes for the last 3 years** **Total works in progress (45No.) Works in tendering (33No.)**	Kerala Water Authority	May 2020			
2.1.10	Extension of sewer network wherever technically feasible in new areas of existing blocks In progress (17No.) Tendering (12No.)	Kerala Water Authority	May 2020			
2.1.11	Procurement of sewercleaning machines and equipment maintenance	Kerala Water Authority	Mar2020			

Solid Waste Management ActionPlan

Sl.No	Activity	Implementing Agency	Unit	Time for completion	Progress till the month of April, 03-21	% works completed	Details of works remaining
2.2.1	Slaughter ho use and poultry waste	Thiruvananthapuram Corporation	Rendering plant	March 2021	**Slaughter House**- Work commenced (Site at Kunnukuzhy, Palayam). **Poultry waste**- TMC has started collecting poultry waste coming under jurisdiction of 25 HI Office from 1st November 2019 on pilot basis with online tracking of vehicles. Entire functioning of system is		

					managed by green Trivandrum Software and its link is provided in corporation website. The entire poultry waste generated in whole Corporation area is collected and sent to rendering plant in Aluva.		
2.2.2	Sanitation facility and treat of waste water in the markets of Pangode, Kumarichanda		Treatment plant Portable aerobic bins	Dec 2019	**Kumarichanda**: STP Plant (Bio membrane bioreactor Technology- 10KLD) conducted trail run to check whether the effluent is within permissible limit as per KSPCB guidelines. Reports were submitted by KSPCB. **Pangode**: Sent for project revision.		
	Provide facility for the treatment of sewage, sullage and garbage generated in the Poonthura slum area between Karamana river and sea	Thiruvananthapuram Corporation	Aero bins at various places(28) **Proposed sites** 1. Moonnathumukku – Purampoku 2. Poonthura – HI Office 3. Cheriyanmuttam– Poonthura 4. Beemapally Compound 5. TsunamiColony 6. Mother Theresa Colony 7. KumariChantha 8. PoonthuraMarket 9. Moonnattumukku bridge 10. Ambalathara– Nilama 11. Fishermen Flat – Muttathara 12. PerunalliMarket		Work is in progress.	**25%**	

			road 13. Poundkadavuold market 14. Market behind Attipra zonaloffice 15. Tsunami Colony near 110KV tower (Poundkadavu) 16. Near ValiyavilaVeli St. Thomas Church (Poundkadavu) 17. Near Kamalesshwaram HSS 18. Valiyaveetil Residence association 19. Near ArannoorGovt Quarters 20. Kunjalumoodu Junction 21. KumarapuramThamarabhagam(near comfortstation) 22. NaerKannammoola Bridge 23. Mannanthala Market 24. SanthiNagar Residents association 25. AlantharaKattayil 26. UlloorMarket 27. Museum RKVRoad 28. New NalanthaRoad	March 2020			

2.2.4	The discharge of waste water from the surrounding houses to the pond at Jagathy is to be stopped	Thiruvananthapuram Corporation	Pondde-silting Issued notices to thehousehold Project is prepared for de-silting the pond	March 2020	Joint inspection was conducted by Thiruvananthapuram Corporation, KWA and with Minor Irrigation Department to identify the site for the installation of STP and affected area is identified. Report yet to submit by Irrigation Department.		
2.2.5	Around 155 Houses in Kurukuvilakom, Kannettumukku shall be provided with septic and treatment system	Thiruvananthapuram Corporation			Proposal for septic tank and treatment system for 155 houses in kurukuvilakom, Kannettumukku is submitted by KWA. Letter forwarded to land revenue Commissioner to avail the Govt. land proposed for the treatment system as per the proposal submitted by KWA.		
2.2.5	Identification of illegal outlets into storm water drains and fine shall be imposed on such units	Thiruvananthapuram Corporation	Fine imposed and prosecution initiated		15.365 lakhs fine collected from 2019 to 2021 till date. No fines were collected in the month of march.		
2.2.6		Thiruvananthapuram Corporation	Bio-Composter		Regarding Three layers Bio-composter Bin (for wet waste management in houses) supply order issued and installation of fifty Thousand	75%	Work is in progress, 38,153 units installed.

	Biodegradable waste			May 2020	kitchen bin units is ongoing. DPR Sanctioned amount of State and Central share had released rupees 13,45,43,500 (partial). Work awarded. 38,153 units installed.		
2.2.7			Thumboormuzhi aerobic bins		Agreement Executed. Work in progress. 16 units of aerobins installation completed. Now work started at(i) Chackai, ITI – 8units (ii)near police quarters, Palayam – 4 units (iii) Puliyarakonam hospital compound – 10 units	20%	Work is commencing in 4 sites – Santhikavadam(4 units), Mananthala (6 units), Kuriyathuvila – 1 unit, Attipra – 5 units.
2.2.8			Community biogas		Work started at sites – Vanitha jail- 100kg/day (90% complete) and central jail – 100kg/day (90% complete), poojapura. Work started at kanjirampara Govt. LPS - 100kg/day and at Womens college, Vazhuthacaud – 500kg/day.		
2.2.9			Organic Waste Converter		Dropped		
2.2.10		Thiruvananthapuram Corporation	**Portable biogas**		Dropped		
2.2.11			**Portable aero bins**		Installation going on. 15 units installed.		
2.2.12			**Ring compost**		**Tendered.** Letter forwarded to People planning section to enlist the		

					beneficiaries. Once the beneficiaries will request for the units, the installation of the same will be done immediately.		
2.2.13			**Segregation bins**		Agreement Executed.		

2.2.14	Biodegradable waste	Thiruvananthapuram Corporation	RRC		Work in progress. Work in Manacaud site (90% complete) is going.	25% complete.	
2.2.15			Plastic Recycling unit		Adequate site not yet identified.		
2.2.16			Mobile MRF		Specification forwarded to Suchitwa mission for approval.		
2.2.17			Electronic Weigh bridge		Forwarded to purchase committee. For reviewing the EOI.		
2.2.18			Solar electrical cart		Tendered. Sample verified. Sample is subjected to trail run for efficiency check.		
2.2.19			Swaps shops		Issue in handing over site.		
2.2.20			PET bottle crushing		Project dropped.		
2.2.21			Community level unit Napkin destroyer		Work order given.		
2.2.22		Thiruvananthapuram Corporation	Animal Crematorium at Kattela		Awaiting TS. Informed the agency (Raidco) to resubmit the proposal.		

				May 2020			
2.2.23		Thiruvananthapuram Corporation	Urban Gardening		Project dropped.		
2.2.24		Thiruvananthapuram Corporation	Upgradation of present facilities		Completed.	100%	
2.2.25		Thiruvananthapuram Corporation	Capacity Building & IEC		Process on going		
2.2.26		Thiruvananthapuram Corporation	Viability gap Fund		VGF 1st phase issued to Harithakarmasena.		
2.2.27	Prevent entry of stormwater into sewer line along with KWA	Thiruvananthapuram Corporation	KWA is authorized to prepare and implement proper sewerage lines under Amrut scheme	May 2020	Close monitoring is done by health Squad and all Health Inspectors are directed to issue notice and prosecution.		
2.2.28	Take steps to prevent the solid wastes in sewer line as reported by KWA	Thiruvananthapuram Corporation	Squad andFines Special squad is formed at Corporation level. Health Inspectors are authorized for regularly monitoring and preventing the wastedischarge	May 2020	Employees were placed at various spots during night to prevent dumping of Solid Waste in drains and fines are being charged. Regarding to waste throwing to public place Corporation collected an amount of Rs 129090/- as fine from 01.01.2021.		

Monitoring

	Activity	**Implementing agency**	**Time line**	**Water quality in July/** pre-monsoon	**Water quality in August/** monsoon	**Water quality in** post- monsoon
2.3.1	River water quality monitoring - Killiyar, Karamana, Parvathiputhanar, Akkulam-Veli lake	Kerala State Pollution ControlBoard	Ongoing; monthly			
2.3.2	Storm drains monitoring - Amayizhanchan thodu, Ulloorthodu, Pattom thodu, Kannamoola thodu, Thekkanakkara canal	Kerala State Pollution ControlBoard	Ongoing Seasonal monitoring – pre-monsoon, monsoon, post-monsoon			
2.3.3	Inspection and effluent quality monitoring of the flats, industrial units, service stations, hospitals, hotels etc in Thiruvananthapuram Corporation area	Kerala State Pollution Control Board	Ongoing Interval: Red – 1 month. Orange – 3 m. Green – 6 m.			

2. Long termPlan

Seweragenetwork

	Long term measures proposed	Implementing agency	Amount Required (Rs. in Crore)	Time line	Progress in the month of November 2020	Progress in the month of December 2020	Progress in the month of January 2021	% works completed	Details of works remaining
3.1.1	Extension of sewerage system to Block F to G coastal belt	Kerala Water Authority	200	Three years					
3.1.2	Extension of sewerage system to Block H to R	Kerala Water Authority	700						
3.1.3	Extension of sewerage system to Newly added	Kerala Water Authority	300						
3.1.4	Providing sewerage system in Block A to E	Kerala Water Authority	100						
3.1.5	Rehabilitation of existing Network and pump house in block A toE	Kerala Water Authority	100						
3.1.6	Procurements of equipmentsfor maintenance seweragesystem	Kerala Water Authority	10						
3.1.7	Additional STP requirement	Kerala Water Authority	60						

3.1.8	Total Amount required	Kerala Water Authority	1470 Crores						

Solid wastemanagement

	Long term measures proposed by Thiruvananthapuram	Implementing agency	Time line	Progress till the month of April, 03-21	% works completed	Details of works remaining
3.2.1	Acquire 58 acres of land and rehabilitate 8150 families from the banks ofRiver	Thiruvananthapuram Corporation	5 years	Planning stage.		

De-silting anddevelopment

No.	Activity	Implementing agency	Timeline	Progress in the month of November 2020	Progress in the month of December 2020	Progress in the month of January 2021	% works completed	Details of works remaining

3.3.1	Development package for Parvathy Puthanar	Irrigation department Included in KIFB by KWIL includes cleaning of canal	3 years					
3.3.2	De-silting and development of Amayizhanchan Thodu	Irrigation Department	1.5 years					
3.3.3	Improvements to Thekkenekara canal and de-silting-	Irrigation Department	1 year					
3.3.4	Karimadam tank improvements, de-silting sheet piling/under preparation and providing fencing	Irrigation Department	1.5 years					
3.3.5	Development of Karamana basin	Irrigation Department	1.5 years					

Date: 03-05-21

Secretary
(Sd/-)

REVIEW OF NGT WORK FOR THE MONTH OF APRIL 2021

2. Short Term Plan

2.1 Maintenance and de-bottlenecking of existing sewerage network

No.	Activity	Implementing agency	Cost Rs. Crore	Source of Fund	Time line	Expected Outcome	Present Status / Action Taken
2.1.1	a) Pumping lines from the terminal pumping stations namely Kuriyathi to be connected directely to STP at Muttathara	Kerala Water Authority	3.375 (Kuriyathi)	Amrut	May-19	Reduced pollution load in Parvathiputhanar	When 50 % of sewage (35 MLD)was diverted directly to the STP on completion of laying of pumping line from Kuriyathy to STP,overflow to TS Canal has completely stopped. Kuriyathi pumping main- Completed
	b) Pattoor to be connected directely to STP at Muttathara						DER for pumping main fromPattoorKannanmoolaand Enchakkal under RKI is under prearation and expected to be completed by Sep 21.
	c) Kannammoola to be connected directely to STP at Muttathara						
	d)Enchakkal to be connected directely to STP at Muttathara						
2.1.2	Rehabilitation/upgradation of Thaliyal and Aranoor Sewerage Pump house by rehabilitation of existing well, construction of new well and grit chamber, installation of new pump sets **Thaliyal**	Kerala Water Authority	2.37	Plan scheme	May-20	Reduced pollution load in Thaliyal drain leading to Killiyar	**Thaliyal: 90% (Expected to be completed within one month)** a) 7 m dia 9 m deep RCC well - Completed b)Grit chamber -completed c)Interconnection works between existing and newly constructed well and grit chamber completed. d) Erection of pumpsets in progress and diesel generator to be installed. **Expected to be completed by 31.05.2021**

	Aranoor:	Kerala Water Authority					**Aranoor:75% completed (Expected to be completed by May 2021)** b) a) Providing RCC lining for the existing two wells Lining for first well completed.2Pump sets erectedin first well.Pumping main also completed. Lining for 2nd well and 1 pumpset erection in progress.b) Diesel generator - orders placed by contactor.
2.1.3	5 MLD sewage treatment plant at Medical College		19.2	Amrut	May-20	Reduced pollution load in Kannamoola Stretch	**87 % completed (Expected to be completed by May 2021)**
2.1.4	Installation of adequate pumps in Mudavanmughal and Enchakkal pumping stations		0.23	Plan scheme	Mar-20		**90% completed (Expected to be completed by May 2021)** Pumpsets installation in progress **Enchakkal Completed Mudavanmughal in progress**
2.1.5	DG sets in all lift and pumping stations				May-20		**90% completed (Expected to be completed by May 2021)** DG sets installation of seven pumping stations completed. Approval from Electrical inspectorate awaited. For Arannoor and Thaliyal. Erection of diesel generator is already included in the item mentioned 2.1.2 above.
	a) Mudavanmughal, Kuriyathi)		0.3				
	b) Pattoor, Kannammola, Plamoodu, Murinjapalam		0.56				
	c) Thaliyal and Aranoor						
	d) Enchakkal						
2.1.6	Reconnect sewer at Rajaji Nagar, stop outflow of sewage into Amayizhanchanthodu, control stormwater entry into sewer to avoid overflow in Thampanoor area	Kerala Water Authority	0.38		Dec-20	Reduced pollution load in Kannamoola Stretch	**26 % completed (Expected to be completed by May 2021)** Work in progress. Very slow progress due to lot of underground utilities and being executed manually
	Sewage generated in Rajaji Nagar shallbe diverted to main sewerline						

	Sewage generated in Thoppil area shallbe diverted main sewerline						
2.1.7	Discharge of sewage in Parayilkadavu shall be stopped as there is overflow of sewage reaches in houses having sewerage connection and this may leadtodischargeofsewageintoRiver Karamana					Reduced pollution load of River Karamana	**Work Completed**
2.1.8	Divert the sewer line from the School compound of Government Karamana High School		0.42		Awarded	Stop over flow of sewage through manholes in the school compound	**100% completed**
2.1.9	Rehabilitation by laying new lines increasing size of undersized main and reconstruction by dilapidated manholes for the last 3 years		18.25	Out of 67 AMRU T-42,	May-20		**90% completed** Works completed – 68No. (Rs. 13.81 cr.) AMRUT-42, State plan-23 MLA ADF/SDF-3
	a) Total works in progress (76No.)			State plan-23			In progress – 7No. (Rs.4.44 cr.) AMRUT-3, State plan-4 (**Expected to be completed by May 2021 except 1 work)**
	b)) Works in tendering (3No.)		1.9	MLA ADF/SDF-2			Out of 3 works to be arranged a) one work was approved by Board and waiting for Govt sanction. b) Two works tendered after recasting estimate . **(Expected date of completion 31/10/2021)**
2.1.10	Extension of sewer network wherever technically feasible in new areas of existing blocks	Water Authority		AMRU T-7,	May-20		**81% completed** Works completed - 18 No. (Rs. 3.24 cr.) AMRUT-7 State plan-10 MLA ADF/SDF-1

	Total works completed/in progress (24 Nos.)	Kerala	18.47	State plan-8			In progress – 6 No. (Rs. 13.97 cr.) AMRUT-5 State plan-1 **(Expected to be completed by May 2021)**	
	Works to be arranged (5 No.)		6.64	MLA ADF/SDF-1			To be arranged– 5Nos. (Rs. 7.885cr.) State plan-5 4 works need Land acquisition. Land acquisition process completed for two works and 2.3 Crores has been remitted to District Collector and the same is in 19(1) notification stage.One work is in 11(1) notification stage and one in initial stage. .Direction from head office to cancel one work and recast the estimate and submit for new AS. Same has been proposed in State Plan 2021-22 **(Expected date of completion 31.03.22)**	
2.1.11	Procurement of sewercleaningmachines and equipment maintenance		3.17		Mar-20		Estimate re-casted, TS revised and re-tendered. Two offers received. Tender cancelled due to high quote. (**Expected date of completion 31.10.21)**	

2.2 Solid Waste Management Action Plan

Sl. No.	Activity	Implementing Agency	Unit	No. of units	Cost in Rs. Cr.	Source of fund	Time for completion	Status
2.2.1	Slaughter house and poultry waste		Rendering plant	1	9.6	Central, State and ULB Share	Mar-21	Slaughter House- Work commenced (Site at Kunnukuzhy, Palayam)

								Poultry waste- TMC starts collecting poultry waste coming under jurisdiction of 25 HI Office from 1st November 2019 on pilot basis with online tracking of vehicles. Entire functioning of system is managed by green Trivandrum Software and its link is provided in corporation website. The entire poultry waste generated in whole Corporation area is collected and sent to rendering plant in Aluva
2.2.2	Sanitation facility and Treatment of waste water in the markets of Pangode, Kumarichanda, Kannettu mukku		Treatment plant Portable aerobic bins	2 4	0.3	Plan fund	March 2021	**Kumarichanda:** STP Plant (Bio membrane bioreactor Technology- 10KLD) conducted trail run to check whether the effluent is within permissible limit as per KSPCB guidelines. Reports were submitted by KSPCB. Renovation work in progress **(Minimum Six month required)**
								Pangode: Sent for project revision
								Kannettumukku: Site not identified
2.2.3	Provide facility for the treatment of sewage, sullage and		1. Moonnat humukku 2. Poonthur a-HI Office 3. Cheriyan muttam- Poonthur a 4. Beemapa lly Compou nd 5. Tsunami Colony			28 works Rs. 3.36 crorePlan Scheme		**Work in Progress: 30% completed** Facing issues with site acquisition

	garbage generate in the poonthura slum area between Karamana river and sea	Thiruvanant hapuram Corporation	6. Mother Theresa Colony 7. Kumari Chantha 8. Poonthur a Marker 9. Moonnat tumukku bridge 10. Ambalat hara- Nilama 11. Fisherme n Flat- Muttatha ra 12. Perunalli Market Road 13. Poundka davu old market 14. Market behind Attipra zonal office 15. Tsunami Colony near 110 KV tower (Poundk adav) 16. Near Valiyavila Veli St. Thomas Church (Poundk adavu) 17. NearKamales shwaram HSS 18. Valiya veetil Residence associati on 19. Near Arannoor Govt. Quarters20. Kunjalumoodu Junction 21. Kumarap uram Thamara bhagam (near comfort station) 22. Near Kannam moola Bridge 23. Mannant hala Market 24. Santhi Nagar Residents associati on 25. Alanthar a Kattayil 26. UlloorMarket 27. Museum RKV Road 28. New Nalantha road				
2.2.4	The discharge of waste water from the surrounding houses to the pond at Jagathy is to be stopped		Pond desilting Issued notices to the household Project is prepared for desilting the pond	0.50	Plan fund	March	**Chairman directed to Minor Irrigation to prepare DPR and included in the action plan for desilting and fencing work of Pond**

2.2.5	Around 155 Houses in Kurukuvilako m, Kannettumukk u shall be provided with septic and treatment system												Proposal for septic tank and treatment system for 155 houses in Kurukuvilakam, Kannettumukku is submitted by KWA. Letter forwarded to land revenue Commissioner to avail the Govt. Land proposed for the treatment system as per the proposal submitted by KWA
2.2.5	Identification of illegal outlets into storm water drains and fine shall be imposed on such units												15.365 lakhs fine collected from 2019 to 2021 till date. No fines were collected in the month of march
2.2.6	Bio- Composter	Biodegradable waste (DPR)	Regarding Three layers Bio-composter Bin (for wet waste management in houses) supply order issued and installation of fifty thousand kitchen bin units is ongoing. DPR sanctioned amount of State and Central share had released rupees 13,45,43,500 (partial)										75% completed Work in progress, 38,153 units installed
2.2.7	Thumboormuzhi aerobic bins		Agreement executed. Work in progress. 16 units of aerobins installaion completed. Now work started at 1) Chackai, ITI: 8 units 2) Near Police quarters, Palayam- 4 units 3) Puliyarakonam hospital compound : 10 units										20% completed Work is commencing in 4 sites : Santhikavadam (4 units) Mannanthala (6 units) Kuriyathuvila (1 unit) Attipra (5 units)
2.2.8			Community biogas	12	2.04	Central, State and ULB Share							Work started Vanitha Jail: 100 kg/day(90% completed) Poojappura Central Jail: 100 kg/day (90% completed) Work started at Kanjirampara Govt. LPS-100kg/day and at Womens college, Vazhuthacaud- 500kg/day
2.2.9			Organic Waste Converter	1	0.4	Central, State and ULB Share							Dropped

2.2.10			Portable biogas	200	0.21	Central, State and ULB Share	Dropped
2.2.11			Portable aero bins	100	1.50		Installation going on 15 units installed
2.2.12			Ring Compost	500	1.25		Tendered Letter forwarded to people planning section to enlist the beneficiaries. Once the benefivciaries will request for the units, the installation of the same will be done immediately
2.2.13			Segregation bins	1,00,000	4	Central, State and ULB Share	Agreement Executed
2.2.14			RRC	7	7		**25% completed** Work in progress. Work in Manacaud site(90% completed)
2.2.15			Plastic Recycling Unit	1	1.36		Adequate site not yet identified.
2.2.16			Mobile MRF	5	1.3		Specification is forwarded to Suchitwa mission for approval
2.2.17			Electronic Weigh bridge	1	0.1		Forwarded to Purchase committee. For reviewing the EOI
2.2.18	Biodegradable waste (DPR)		Solar electrical cart	25	0.5		Tendered. Sample verified. Sample is subjected to trial run for efficiency check.
2.2.19		Thiruvanant hapuram Corporation	Swaps Shops	4	0.2		Issue in handing over site
2.2.20			PET bottle crushing	15	0.05		Project dropped
2.2.21			Community level unit Napkin destroyer	102	0.35		Work order given
2.2.22			Animal Crematorium at	1	1		Awaiting TS. Informed the agency (Raidco) to resubmit the proposal

2.2.23			Urban Gardening		0.5			Project dropped
2.2.24			Upgradation of present facilities	42	1.86			**100% completed.**
2.2.25			Capacity Building & IEC		0.7			Process on going
2.2.26	Biodegradable waste (DPR)		Viability gap Fund		0.92	Central, State and ULB Share		VGF 1st phase issued to Harithakarmasena
2.2.27	Prevent entry of Stormwater into sewer line along with KWA		KWA is authorised to prepare and implement proper sewerage lines under		154	AMRUT	May-20	Close monitoring is done by health Squad and all Health Inspectors are directed to issue notice and prosecution.
2.2.28	Take steps to prevent the solid wastes in sewer line as reported by KWA		Squad and Fines Special squad is formed at corporation level. Health Inspectors are authorizsed for regularly monitoring and preventing the waste discharge				May 2020	Employees were placed at various spots during night to prevent dumping of Solid Waste in drains. And fines are being charged. Regarding to waste throwing to public place Corporation collected an amount of Rs.1,29,090/ as fine from 01.01.2021.

2.3 Monitoring

	Activity	**Implemen**	**Cost**	**Source of fund**	**Time line**	**Remarks**
2.3.1	River water quality monitoring - Killiyar, Karamana, Parvathiputhanar, Akkulam-Veli lake	a State Pollution ControlBoard	Rs.3000 per sample	National Water Quality Monitoring Programme (NWMP), CPCB Fund	Ongoing; monthly frequency	**Pollution Control Board had submitted the analysis report and is attached separately**
2.3.2	Storm drains monitoring - Amayizhanchanthodu, Ulloorthodu, Pattomthodu, Kannamoolathodu, Thekkanakkara canal		Rs.3000 per sample	State Water Quality Monitoring Programme KSPCB Fund	Ongoing Seasonal monitoring- pre- monsoon	

2.3.3	Inspection and effluent quality monitoring of the flats, industrial units, service stations, hospitals, hotels etc in Thiruvananthapuram Corporation area	Keral	As per sampling charge	KSPCB	OngoingInterval: Red – 1 month. Orange – 3 m. Green – 6 m.	
3. Long term Plan						
3.1 Sewerage network						
	Long term measures proposed	Implementing agency	Amount Required (Rs.in Crore)	Time line	Remarks	
3.1.1	Extension of sewerage system to Block F to G coastal belt		200.00			
3.1.2	Extension of sewerage system to Block H to R	Kerala Water Auth	700.00		**Consultant for preparing project report for uncovered wards of the TVM Corporation and Rehabilitation of existing system, apointed**	
3.1.3	Extension of sewerage system to Newly added areas of corporation viz,		300.00			
3.1.4	Providing sewerage system in Block A to E		100.00			
3.1.5	Rehabilitation of existing Network and pump house in block A toE		100.00			
3.1.6	Procurements of equipments for maintenance seweragesystem	Kerala Water Authority	10.00			
3.1.7	Additional STP requirement		60.00	Three years		
	Total Amount required		**1470.00**			
3.2 Solid waste management						
	Long term measures proposed byThiruvananthapuram	Implementing agency	Amount Required in Crore	Time line	Remarks	
3.2.1	Acquire 58 acres of land and rehabilitate 8150 families from the banks ofRiver	Thiruvananthapuram Corporation	600	5 years	Under Planning Stage	

3.3 Desilting and Development					
No.	Activity	Implementing agency	Amount allotted in Crore	Timeline	Remarks
3.3.1	Development package for ParvathyPuthanar	Irrigation department Included in KIFB by KWIL includes cleaning of canal	150	3 years	**Phase I (First half) completed Veli to Kadinamkulam Kayal (Ch 16.00 to Ch27.00).Executed by Inland Navigation . Aakkulam to Monnattumukku cleaning works 75% compledted- by KWIL**
3.3.2	De-silting and development of AmayizhanchanThodu	Irrigation Department	25	1.5 years	Tendeing action completed . Single tender to be sanctioned
3.3.3	Improvements to Thekkenekara canal and de-silting-		5	1 year	**Chairman directed to follow up with Government to obtain sanction of the work .** Estimate submitted .
3.3.4	Karimadam tank improvements,de-silting sheet piling/under preparation and providing fencing		1.14	1.5 years	Estimate submitted Pending with Chief Engineer's Office **due to lack of fund availability. To be included in DPR of Karamana River.**
3.3.5	Development of Karamana basin		6.77	1.5 years	Estimate submitted for sanction, pending with Chief Engineer's Office due to lack of fund . Out of 6.77 crore sanction of 2.00 crore to be obtained from Secretary, Thiruvananthapuram Corporation

Superintending Engineer
Irrigation South Circle, Thiruvananthapuram
(Chairman DLTC Meeting, Thiruvananthapuram)

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ACTION PLAN FOR RIVER KARAMANA, KERALA

1. **Short term plan**

2. Maintenance and de-bottle necking of existing sewerage network

No.	Activity	Implementing agency	Time line	Progress in the month of January-2021	Progress in the month of February-2021	Progress in the month of March 2021	% works completed	Details of works remaining
2.1.1	Pumping lines from the terminal pumping stations namely Kuriyathi, Pattoor, Kannammoola and Enchakkal pumping stations are to be connected directly to STP at Muttathara	Kerala Water Authority	May 2019				On laying of pumping line from Kuriathy to STP the issue is solved.	When 50 % of sewage (35 MLD)was diverted directly to the STP on completion of laying of pumping line from Kuriyathy to STP,overflow to TS Canal has completely stopped. Kuriyathi pumping main- Completed DER for pumping main fromPattoorKannanmoolaand Enchakkal under RKI is under prearation and expected to be completed by Sep 21.
2.1.2	Rehabilitation/upgradation of Thaliyal and Aranoor Sewerage Pump house by rehabilitation of existing well, construction of new well and grit chamber, installation of new pump Sets	Kerala Water Authority	May 2020	Thaliyal o%	0%	5%	90%	a. 7 m dia 9 m deep RCC well - Completed b)Grit chamber -completed c)Interconnection works between existing and newly constructed well and grit chamber completed. d) Erection of pumpsets in progress and diesel generator to be installed. Expected to be completed by 31.5.21.
				Arannoor15%	10%	5%	75%	b. a) Providing RCC lining for the existing two wells Lining for first well completed.2Pump sets erectedin first well.Pumping main also completed.

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				Aranmoor15%	10%	5%	75%	Lining for 2nd well and 1 pumpset erection in progress.b) Diesel generator - orders placed by contactor. Expected date of completion 31.5.21
2.1.3	5 MLD sewage treatment plant at Medical College	Kerala Water Authority	May 2020	4%	5%	3%	90%	Expected to be completed by 31.5.21
2.1.4	Installation of adequate pumps in Mudavanmughal and Enchakkal pumping stations.	Kerala Water Authority	March 2020	10%	5%	5%	90%	Pump sets installation at Enjakkal completed. Pump sets installation at Mudavanmughal in progress. Expected date of completion 31.5.21
2.1.5	DG sets in all lift and pumping stations – Mudavanmughal, Aranoor, Thaliyal, Kuriyathi, Pattoor, Kannammola,Pattom, Murinjapalam and Enchakkal	Kerala Water Authority	May 2020	70%	20%	0%	90%	DG sets installation of seven pumping stations completed. Approval from Electrical inspectorate awaited. For Arannoor and Thaliyal. Erection of diesel generator is already included in the item mentioned 2.1.2 above. Expected date of completion 31.05.21
2.1.6	Reconnect sewer at Rajaji Nagar, stop outflow of sewage into Amayizhancha-nthodu, control storm water entry into sewer to avoid overflow in Thampanoor area. Sewage generated in Rajaji Nagar shall be diverted to main sewer line. Sewage generated in Thoppil area shall be diverted main sewer line	Kerala Water Authority	Dec 2020	5%	10%	6%	26%	Work in progress. Very slow progress due to lot of underground utilities and being executed manually and expected to be completed by 31.05.2021 .
2.1.7	Discharge of sewage in Parayilkadavu shall be stopped as there is overflow of sewage reaches in houses having sewerage connection and this may leadtodischargeofsewageintoRiverKaramana	Kerala Water Authority	Completed				100 % completed	Rehabilitation work of existing pipe line is included in the work State Plan -2019-20-Rehabilitation of sewer line from Sathya Nagar to Karamana BHS and allied works. Works Completed.

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2.1.8	Divert the sewer line from the School compound of Government Karamana High School	Kerala Water Authority	completed				100% completed	Work mentioned is same as the above work which is completed.
2.1.9	**Rehabilitation by laying new lines increasing size of undersized main and reconstruction by dilapidated manholes for the last 3 years**	Kerala Water Authority	May 2020	7%	3%	3%	90%	Works completed – 68No. (Rs. 13.81cr) AMRUT-42, State plan-23 MLA ADF/SDF-3 In progress – 7No. (Rs. 4.44cr.) AMRUT-3, State plan-4 (Expected date of completion 31.5.21 except 1 work)
	Total works in progress (75No.) Works in tendering (3No.)						To be arranged – 3 No. (Rs. 1.81cr.) State plan-3	Out of 3 works to be arranged a. one work was approved by Board and waiting for Govt sanction. b. Two works tendered after recasting estimate Expected date of completion 31.10.21
2.1.10	Extension of sewer network wherever technically feasible in new areas of existing blocks	Kerala Water Authority	May 2020		3%	3%	81%	Works completed - 18 No. (Rs. 3.24 cr.) AMRUT-7, State plan-10 MLA ADF/SDF-1
	In progress/Ongoing (24No.)							

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				3%				In progress – 6 No. (Rs. 13.97 cr.) AMRUT-5 State plan-1 Expected date of completion 31.5.21
	Tendering/ To be arranged (5No.)					To be arranged	To be arranged– 5Nos. (Rs. 7.885 cr.) State plan-5	4 works need Land acquisition. Land acquisition process completed for two works and 2.3 Crores has been remitted to District Collector and the same is in 19(1) notification stage.One work is in 11(1) notification stage and one in initial stage. .Direction from head office to cancel one work and recast the estimate and submit for new AS. Same has been proposed in State Plan 2021-22 Expected date of completion 31.03.22
2.1.11	Procurement of sewercleaning machines and equipment maintenance	Kerala Water Authority	Mar 2020	0%	0%	0%	0%	Estimate re-casted, TS revised and re-tendered. Two offers received. Tender cancelled due to high quote. Expected date of completion 31.10.21

The document is digitally approved. Hence signature is not needed.

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2.Long Term Plan

	Long term measures proposed	Implementing agency	Amount Required (Rs.in Crore)	Time line	Progress in the month of February	Progress in the month of March	% works completed	Details of works remaining
3.1.1	Extension of sewerage system to Block F to G coastal belt	Kerala Water Authority	200	Three years				Consultant for preparing Detailed Project Report for uncovered wards of the Thiruvanan-thapuram Corporation and Rehabilitation of existing system, appointed.
3.1.2	Extension of sewerage system to Block H to R		700					
3.1.3	Extension of sewerage system to Newly added areas of corporation viz,		300					
3.1.4	Providing sewerage system in Block A to E		100					
3.1.5	Rehabilitation of existing Network and pump house in block A toE		100					
3.1.6	Procurements ofequipmentsformaintenance seweragesystem		10					
3.1.7	Additional STP requirement		60					
	Total Amount required :		**1470Crores**					

* Out of the 100 wards in Thiruvananthapuram Corporation,42 wards(Blocks A to E) are fully/Partially covered with sewerage facility. For 35 Wards (Blocks F to R) design of sewerage network is available but this needs modification in lieu of the change in demography and for the balance 23 wards new designs are to be prepared. The long term measures are envisaged to cover the entire wards in the Thiruvananthapuram Corporation. For preparing DPR/DER for rehabilitation of existing sewerage system and for establishing sewerage system for uncovered areas of Thiruvananthapuram Corporation, AS has been obtained under RKI (Govt. of Kerala) and survey work for the same started.

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STATE WATER MONITORING PROGRAMME (SWMP) 2021

Analysis Report for the month of April -2021

Name of River	KARAMANA
Date and Time of Sample collection	04-06-2021
Method of analysis	

Sl no.	Parameters	SAMPLE ID					
		Peppara	Aruvikkara	Mangatukadavu	Pallathukadavu	Thiruvallom	Moonnattumukku
1	Temperature,degree celsius	27	27	26	27	27	27
2	pH	6.4	6.7	6.7	6.8	6.8	7.4
3	Turbidity,NTU	1.6	3.2	5.6	5.9	6.9	6.6
4	Electrical Conductivity,	48	87	89	146	238	333
5	DO,mg/l	6.6	6.3	4.6	3.5	2.9	1.2
6	BOD,mg/l	0.9	1.6	3.6	6.6	7.2	7.8
7	NH3N,mg/l	BDL	BDL	BDL	BDL	BDL	BDL
8	Nitrate,mg/l	BDL	BDL	BDL	BDL	BDL	1.2
9	Chloride,mg/l	4	8	10	14	27	47
10	Phosphate,mg/l	BDL	BDL	BDL	BDL	BDL	BDL
11	Total Alkalinity,mg/l	17	30	28	49	74	85
12	Total Hardness,mg/l	23	36	36	58	83	103
13	Calcium,mg/l	18	27	26	46	65	84
14	Magnesium,mg/l	5	9	10	12	18	19
15	Sodium,mg/l	2.1	4.2	5.2	7.3	14.1	24.5
16	Potassium,mg/l	0	1.2	0.5	2.4	4.4	5.3
17	Boron,mg/l	0	0	0	0	0	0
18	SAR	0.112751	0.178602	0.219438	0.247552	0.398573	0.627479
19	TC,cfu/100ml	400	500	800	1400	4700	17600
20	FC,cfu/100ml	100	100	400	700	1200	4400
21	Faecal Streptococci	ND	ND	ND	ND	ND	ND

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs
(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)
RIVER PAMBA, PATHANAMTHITTA

S. No.	Activity to be monitored	Timeline	Submission of progress by State/UT-Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation		
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured		
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning		
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose		
	• Monitoring at State level must take place		
6	Progress report may be furnished by the State/UTs to • Secretary,Ministry of Jal Shakti • Member Secretary,CPCB		

6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment. (II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline (III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure,Gap Analysis, Proposed along with completion timeline, No. of industries and complying status (iv)<u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline (v)Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river; (vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc. (vii)Ground water regulation		

	(viii) Adopting good irrigation practices (ix) Protection and management of food plain Zones (FPZ) (x) Rain water harvesting (xi)Maintaining minimum Environmental flow of river (xii) Plantation on both sides of the river (xiii)Setting up biodiversity parks on flood plains by removing encroachment		

ACTION PLAN FOR RIVER PAMBA, KERALA

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of March 2021	Progress in the monthof April 2021	% works completed	Details of works remaining
A(a)	No industries	-	-	-	-	-	-
A(a)	Monitorng of river water quality	Kerala State Pollution Control Board	Continuing project				
C(ii)	Establishment of de-centralized solid waste treatment facility	Mannar Panchayat, Kadapra/ Niranam Panchayath	31.03.2021	Construction of 2 aerobic compost units completed (One each in Grama Panchayat Office compound and near Mannar Private Bus Stand.	Construction of 2 aerobic compost units completed (One each in Grama Panchayat Office compound and near Mannar Private Bus Stand. The work was executed by M/s Floret Technologie Thiruvananthapuram. An amount of Rs. 13,60,000/- was allocated in the annual plan of Mannar GP for this projects	100%	Inauguration of functioning.

				The committee has not met since the election was announced last month.There for this issue will be discussed at the next meeting of Kadapra grama Panchayath. Niranam Gramapanchayat is an upper kuttanad Area . So no such dry land suitable for solid waste treatment plant is available. Door to door collection of solid waste ny haritha karmasena is ongoing and segregate and handed over to clean Kerala Company.	Kadapra Panchayath has resolved to identify all polluting sources involved in pollution of river resources and initiation of penal action against them Niranam Gramapanchayat is an upper kuttanad Area . So no such dry land suitable for solid waste treatment plant is available. Door to door collection of solid waste ny haritha karmasena is ongoing and segregate and handed over to clean Kerala Company.		

C	Establishment of Material Collection Facility	Mannar Panchayat, Kadapra/ Niranam Panchayath	31.03.2021	Collection, segregation and transportation of non-biodegradable plastic materials is continuing. About 4.5 tonnes of plastic materials handed over to Clean Kerala Company(CKC) so far. About 3 tonnes of plastic materials is kept ready for trasportation. Socio-Economic Unit (SEU) has been selected as implementing agency for the construction of Two mini MCFs in each ward in all the 18 wards of Mannar GP.	Collection of Non-biodegradable plastic materials from houses and institutions is conducted by Haritha Karma Sena(HKS). Non-biodegradable plastic materials has bCollection, segregation and transportation of non-biodegradableplastic materials is continuing. About 4.5 tonnes of plastic materials handed over to Clean Kerala Company(CKC) so far. About 3 tonnes of plastic materials is kept ready for trasportation. Socio-Economic Unit (SEU) has been selected as implementing agency for the construction of Two mini MCFs in each ward in all the 18 wards of Mannar GP	100%	Construction of permenant MCF building, collection and transportation of Non-bio degradable Materials to RRF for processing.

				Kadapra gramapanchayath already existing. In Niranam gramapanchayath, MCF is under construction 100 percentage of the consruction work hes been comleated	Material Collection Facility is fully functional in Kadapra Grama Panchayath In Niranam grama panchayath MCF IS constructed and 13 mini MCf s constructed		

C	Resource Recovery Facility	Mannar Panchayat, Kadapra/ Niranam Panchayath	31.03.2021	As there is no RRF in Mavelikkara Block Panchayat in which Mannar GP belongs, nearby Chengannur Block Panchayat has agreed to receive the plastic materials collected and transported by Mannar GP. Mannar GP has started stockpiling of plastic waste materials collected through HKS in a hall above the Vridhdhasadanam owned by GP and segregated and transported to Clen Kerala company. The committee has not met since the election was announced last month. Therefore,this issue	As there is no RRF in Mavelikkara Block Panchayat in which Mannar GP belongs, nearby Chengannur Block Panchayat has agreed to receive the plastic materials collected and transported by Mannar GP. Mannar GP has started stockpiling of plastic waste materials collected through HKS in a hall above the Vridhdhasadanam owned by GP and segregated and transported to Clen Kerala company Resource recovery facility is working as a centralized arrangement at Block Panchayath level in	100%	Collection and transportation of Non-bio degradable Materials to RRF for processing

				will be discussed at the next meeting of Kadapra grama Panchayath. In Niranam grama panchayath , MCF is under construction 100 percentage of the consruction work hes been compleated	Kadapra Grama Panchayath It will be suitable if RRFf is Established at Blocklevel in Niranam Grama Panchayath		
C	Installing household and community level solid waste management units	Mannar Panchayat	31.03.2021	Collection, segregation and transportation of non-biodegradable plastic materials is continuing. About 4.5 tonnes of plastic materials handed over to Clean Kerala Company(CKC) so far. About 3 tonnes of plastic materials is kept ready for trasportation.Socio-Economic Unit (SEU) has been selected as	Collection of Non-biodegradable plastic materials from houses and institutions is conducted by Haritha Karma Sena(HKS). Collection, segregation and transportation of non-biodegradable plastic materials is continuing. About 4.5 tonnes of plastic materials	100%	Construction and operation of Aerobic compost unit.

				implementing agency for the construction of Two mini MCFs in each ward in all the 18 wards of Mannar GP.			
C	Door to door collection and transportation of municipal solid waste	Mannar Panchayat	31.03.2021	Collection, segregation and transportation of non-biodegradable plastic materials is continuing. About 4.5 tonnes of plastic materials handed over to Clean Kerala Company(CKC) so far. About 3 tonnes of plastic materials is kept ready for trasportation.Socio-Economic Unit (SEU) has been selected as implementing agency for the construction of Two mini MCFs in each ward in all the 18 wards of Mannar GP.	Collection of Non-biodegradable plastic materials from houses and institutions is conducted by Haritha Karma Sena(HKS). Collection, segregation and transportation of non-biodegradable plastic materials is continuing. About 4.5 tonnes of plastic materials handed over to Clean Kerala Company(CKC) so far. About 3 tonnes of plastic materials is kept ready for trasportation.Socio-Economic Unit (SEU) has been selected as implementing agency for the construction of	100%	The process has to be repeated throught the year.

					Two mini MCFs in each ward in all the 18 wards of Mannar GP.		
C	Construction of small sewage treatment plant with screening, septic tank and disinfection to the storm water drain of Parumala Town	Kadapra Panchayat	31.12.2020	The committee has not met since the election was announced last month . Therefore,this issue will be discussed at the next meeting of Kadapra grama Panchayath	The Panchayath has by its resolution considered that Sewage treatment plant is currently not needed within Panchayath area around Parumala		

C	Construction of small sewage treatment plant with screening, septic tank and disinfection to the storm water drain of Mannar Town	Mannar Panchayat	31.12.2020	Due to the lack of space and fund, construction of small STP is not included in the annual plan of Mannar Grama Panchayat. It will be suitable if the Govt . takes necessary steps in this matter	Due to the lack of space and fund, construction of small STP is not included in the annual plan of Mannar Grama Panchayat. It will be suitable if the Govt . takes necessary steps in this matter.	0%	Not applicable
C	Construction of compound wall with fencing	Irrigation department	31.03.2021	Detailed project report for the Holistic rejuvenation of the reaches is prepared and submitted to Government	Detailed project report for the Holistic rejuvenation of the reaches is prepared and submitted to Government		
C	Removing light jungle and muddies from river courses	Irrigation department	31.03.2021				
C	Electrical-Light arrangementsand Surveillance cameras	Irrigation department	31.03.2021				
C	Regualting activites in flood plain zone, protection and management of flood plain zone	Irrigation department	31.03.2021				

	Greenery developmentPlantation plan. Plantation on both sides of the river, setting up biodiversity parks on flood plains by removing encroachment	Irrigation department	31.03.2021				
C (b) (ii)	Green Protocol implementation in all Offices institution & Public function	Mannar, Kadapra/ Niranam Panchayat	31.05.2020	Green Audit was conducted in Mannar GP Office and other 13 Government Offices within the Panchayat Area. 11 offices were certified to have fulfilled Green Audit parameters. Certificates were awarded to the successful offices and Suchitwa Padavi Declaration in Mannar GP was conducted 26/01/2021. Green protocol has been implemented inKadapra Gramapanchayath Main office.All public functions by this	Green Audit was conducted in Mannar GP Office and other 13 Government Offices within the Panchayat Area. 11 offices were certified to have fulfilled Green Audit parameters. Certificates were awarded to the successful offices and Suchitwa Padavi Declaration in Mannar GP was conducted 26/01/2021. Green Protocol has been implemented in Public offices of Kadapra Grama Panchayath	100%	Continuation of Green Protocol .

				office also follow the protocol. Necessary instructions are given to all offices and institution to strictly comply with the green protocol and is regularly monitored in Niranam grama panchayath	Necessary instructions are given to all offices and institution to strictly comply with the green protocol and is regularly monitored in Niranam Grama Panchayath		
D(a)	Issues relating to E-flow, maintaining minimum environmental flow of river (by having watershed management provisions)	Irrigation department	30.11.2020	Detailed project report for the Holistic rejuvenation of the reaches is prepared and submitted to Government			
D (b)	Irrigation practices	Irrigation department	30.04.2020				
E	Awareness programmes for sections of public	Kerala State Pollution Control Board	31.05.2020				

C	Management of municipal, plastic, hazardous, biomedical and electrical waste	LSGD	31.03.2021	Draft by-law of Plastic Waste Handling has been passed by the Grama panchayat Committee on 05/02/2021. Collection, segregation and transportation of non-biodegradable plastic materials is continuing. About 4.5 tonnes of plastic materials handed over to Clean Kerala Company(CKC) so far. About 3 tonnes of plastic materials is kept ready for trasportation.Socio-Economic Unit (SEU) has been selected as implementing agency for the construction Two mini MCFs in each ward in all the 18 wards of Mannar GP.For the management of electrical, electronic and hazardous waste, the Grama Panchayat has reached in an agreement with Clean Kerala Company. Collection and	Draft by-law of Plastic Waste Handling has been passed by the Grama panchayat Committee on 05/02/2021. Collection, segregation and transportation of non-biodegradable plastic materials is continuing. About 4.5 tonnes of plastic materials handed over to Clean Kerala Company(CKC) so far. About 3 tonnes of plastic materials is kept ready for trasportation.Socio-Economic Unit (SEU) has been selected as implementing agency for the construction Two mini MCFs in each ward in all the 18 wards of Mannar GP.For the management of electrical, electronic		

				handing over of electrical, electronic and hazardous waste will start. Biomedical waste is being collected from source and transported for processing by IMAGE (IMA Goes + Eco-friendly), an initiative run by IMA (Indian Medical Association. In Kadapra Grama Panchayath, these types of waste materials are being processed with the help of Clean Kerala Company	and hazardous waste, the Grama Panchayat has reached in an agreement with Clean Kerala Company. Collection and handing over of electrical, electronic and hazardous waste will start. Biomedical waste is being collected from source and transported for processing by IMAGE (IMA Goes + Eco-friendly), an initiative run by IMA (Indian Medical Association)		

ACTION BY GROUND WATER DEPARTMENT

Sl. No.	Ref para item nos as per NGT Order no.673/2018 dated 20.09.2018	Activity	Progress in the month of March2021	Progress in the month of April 2021	% works completed	Details of works remaining
1	B(i)	Ground Water resources and regulation of ground water extraction by industries particularly in over exploited as critical zones/blocks	NOC has not been issued to industries for Ground Water extraction during February 2021	NOC has not been issued to industries for Ground Water extraction during March 2021	Demand based	1.As per the GEC estimation all the blocks in the District has beencategorized as SAFE. 2.Provisions of GW (control &Regulation) Act 2002 is implementing strictly for regulating extraction of GW resource in the district
2	B(ii)	Ground water recharging / rain water harvesting	Work Completed	Work Completed	Expecting to complete the work during February	All the blocks in the district is categorized as SAFEas per GEC estimation. Kadapra-Niranam Area is not feasible for Ground WaterRecharge. However, GW recharging programme is taken up in some pockets in the midland area including Manimala basin. Where

						seasonal GW level fluctuation is noticed.
3	B(iii)	Periodic ground waste quality assessment and remedial actions in case of contaminated ground water tube wells/bore wells or hand pumps	Groundwater sample collection during the month of March from monitoring wells (borewells and open wells) collected and sent to Analytical Lab Thiruvananthapuram for chemical analysis soon.Result awaited .	Groundwater sample collection during the month of March from monitoring wells (borewells and open wells) collected and sent to Analytical Lab Thiruvananthapuram for chemical analysis soon.Result awaited	Periodical assessment(Regular programme) Chemical analysis result ofgroundwater samples collected during November-2020 reveals that the gw quality is good and potable.	(i)Maintaining a network of observation wells in varioushydrogeomorphic units throughout the district from which water level and water samples have been collected periodically and analysed. (ii)generally groundwater quality is good and potable
4	B(iv)	For regulating use of ground water for irrigation purpose, adopting good irrigation practices	Not submitted	Not submitted	Continuing programme	i)Borewell/tube well construction is regulated in the district by insisting permit of local bodies based on the feasibility report of GWD ii) Promoting conjunctive use of groundwater and surface water for irrigation purpose.

						iii)Awareness programmes organised to the public to adopt rainwater harvesting measures

MONTHLY ANALYSIS REPORT OF POLLUTED RIVER STRETCHES APRIL- 2021

STATION : MANNAR

SAMPLING DATE :17.04.2021

SI.NO	PARAMETERES	ITTINARAKADAVU BRIDGE KUTTAMPEROOR	KOTTAKAL KADAVU BRIDGE KORATTIKADAVU	PARUMALA BRIDGE	MANNAR BRIDGE
1	**Temp. (ºC)**	30	29	28	29
2	**pH**	6.8	6.7	6.9	7.4
3	**Conductivity (µS/cm)**	86.71	46.37	47.41	37.97
4	**DO (mg/L)**	5.4	6.4	5.9	6.2
5	**BOD (mg/L)**	1.5	0.6	1.1	0.9
6	**COD (mg/L)**	6.4	3.2	3.2	3.2
7	**TDS (mg/L)**	46	16	32	28
8	**TC (CFU/100ml)**	570	240	190	100
9	**FC (CFU/100ml)**	190	80	60	30

WATER QUALITY DATA OF POLLUTED RIVER STRETCHES APRIL - 2021

DISTRICT OFFICE, PATHANAMTHITTA

Date of Sampling: 15.04.2021

Sl.No	PARAMETERS	THAKAZHY	EDATHUA	MANNAR
1	Temperature ,ºC	28	28	32
2	pH	6.8	7.0	6.4
3	Turbidity ,NTU	1.8	1.7	3.0
4	Electrical Conductivity ,µS/cm	50.32	61.33	71
5	DO, mg/L	7.0	6.7	4.8
6	BOD, mg/L	0.7	1.0	1.3
7	NH_3N, mg/L	BDL	BDL	BDL
8	Nitrate , mg/L	1.241	1.328	0.492
9	Chloride mg/L,	12	10	12
10	Phosphate , mg/L	-	-	-
11	Total Alkalinity, mg/L	9	9	11
12	Total Hardness, mg/L	32	36	26
13	Calcium , mg/L	20	30	14
14	Magnesium, mg/L	12	6	12
15	Sodium, mg/L	6.94	6.131	6.4
16	Pottassium , mg/L	1.381	1.994	0.993
17	Boron , mg/L	-	-	-
18	SAR	0.53	0.44	0.545714
19	TC , CFU/100mL	260	270	42
20	FC, CFU/100mL	80	60	140
21	FS, CFU/100mL	NIL	NIL	NIL

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs
(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)
RIVER PAMBA, PATHANAMTHITTA

S. No.	Activity to be monitored	Timeline	Submission of progress by State/UT- Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation		NA
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured		NA
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning		NA
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose		NA
	• Monitoring at State level must take place		NA
6	Progress report may be furnished by the State/UTs to • Secretary, Ministry of Jal Shakti • Member Secretary, CPCB	Monthly (preferably before 20th of every month)	NA

6.1	Progress Report may be comprised of details along with completion timelines on:		
	(I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment.	2019-2020	Drains contributing to river pollution were Identified- The drains are seasonal and water quality is above the required limit, no in-situ treatment is required
	(II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline	2020-2021	
	(III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status		Since the area does not contain any industry and so do not require any CETP, this action point is revised
	(iv) <u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline		The adjoining local bodies are in the stage of developing and establishing adequate solid waste management facilities. Also, the solid waste dumping issues were not identified in the stretch during the field visit held during past one year
	(v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;	2019-2020	Water quality analysis results of February 2021 is enclosed
	(vi) Preventing dumping of waste and scientific waste management including bio-medical waste, plastic	2019-2021	Awareness campaign to be initiated

	waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.		
	(vii)Ground water regulation	2020-2021	No ground water pollution is noted in the area so action yet to be initiated
	(viii) Adopting good irrigation practices	2020-2021	Adopted
	(ix) Protection and management of food plain Zones (FPZ)	2020-2021	Action will be initiated
	(x) Rain water harvesting	2020-2021	Action will be initiated
	(xi)Maintaining minimum Environmental flow of river	2020-2021	Action will be initiated
	(xii) Plantation on both sides of the river	2020-2021	Action will be initiated
	(xiii)Setting up biodiversity parks on flood plains by removing encroachment	2020-2021	Action will be initiated

ACTION PLAN FOR RIVER PAM BA, KERALA

No. (as per Action Plan)	Activity	Implementing agency	Progress in the month of January 2021	Progress in the month of February 2021	Progress in the month of march 2021	% works completed	Details of works remaining
A(a)	No industries	-					
A(a)	Monitorng of river water quality	Kerala State Pollution Control Board	Result attached	Result attached	Result attached	100%	nil

C(ii)	Establishment of de-centralized solid waste treatment facility	Mannar Panchayat, Kadapra/ Niranam Panchayath	Rs. 13,60,000/- is allocated for the installation of Aerobic compost unit in Mannar GP in the current fiscal year. Quotation is given by M/s Floret Technologies for the setting up of Aerobic compost unit.	The Implementing Officer (AE, LSGD) has issued selection letter to M/s Floret Technologies. Agreement will be executed in October.	Agreement with M/s Floret Technologies is executed and worksite handed over to them for starting construction.	40%	Construction and operation
C	Establishment of Material Collection Facility	Mannar Panchayat, Kadapra/ Niranam Panchayath	Haritha Karma Sena (HKS) has been constituted in all wards of Mannar GP for the door-to-door collection of solid non-bio degradable waste materials. Viability Grant of Rs. 4,17,150 /- is allocated for the functioning of HKS during this fiscal year. Suitable place for the setting up of MCF has been identified and Rs 10,00,000 has been allocated for the MCF.	Training of HKS volunteers for collecting consent from house owners to hand over non-bio degradable materials to HKS is completed. Registration of Houses and collection of consent are progressing. Technical Sanction for	Door –to-door collection of non-bio degradable Plastic materials has been inaugurated on 04/11/2020. The materials collected will be kept in a hall above the Vridhasadanam building until sufficient quantity for	40%	Construction of MCF building, collection and transportation of Non-bio degradable Materials to RRF for processing

				construction MCF building is awaited. Tender process will start in October. A rented building has been identified for setting up of temporary MCF till own MCF of Grama Panchayat is constructed.	transportation to the RRF is obtained.		
C	Resource Recovery Facility	Mannar Panchayat, Kadapra/ Niranam Panchayath	Not included in the annual plan of Mannar GP. Regular Supply of materials for RRF cannot be ensured by relying on the materials collected from Mannar Grama Panchayat area alone. If the RRF is set up by Block panchayat, all the Grama Panchayats coming under the Block Panchayat area can supply adequate quantity of material for the steady functioning of the RRF	Not included in the annual plan of Mannar GP. Regular Supply of materials for RRF cannot be ensured by relying on the materials collected from Mannar Grama Panchayat area alone. If the RRF is set up by	As there is no RRF in Mavelikkara Block Panchayat in which Mannar GP belongs, nearby Chengannur Block Panchayat has agreed to receive the plastic	25%	Collection and transportation of Non-biodegradable Materials to RRF for processing

				Block panchayat, all the Grama Panchayats coming under the Block Panchayat area can supply adequate quantity of material for the steady functioning of the RRF. As there is no RRF in Mavelikkara Block Panchayat in which Mannar GP belongs, nearby Chengannur Block Panchayat has agreed to receive the plastic materials collected and	materials collected and transported by Mannar GP. Mannar GP has started stockpiling of plastic waste materials collected through HKS in a hall above the Vridhdhasadanam owned by GP.		

				transported by Mannar GP.			
C	Installing household and community level solid waste management units	Mannar Panchayat	For Community level solid waste management, Rs. 13,60,000/- is allocated for the installation of Aerobic compost unit in Mannar GP in the current fiscal year. Quotation is given by M/s Floret Technologies, Trivandrum, for the setting up of Aerobic compost unit. For household solid waste management, compost pit is being provided to individuals under MGNREGA scheme.	The Implementing Officer (AE, LSGD) has issued selection letter to M/s Floret Technologies. Agreement will be executed in October.	Agreement with M/s Floret Technologies is executed and worksite handed over to them for starting construction. For household solid waste management, compost pit is being provided to individuals under MGNREGA scheme.	40%	Construction and operation of Aerobic compost unit.
C	Door to door collection and transportation of municipal solid waste	Mannar Panchayat	Not included in the annual plan of Mannar Grama Panchayat.	Not included in the annual plan of Mannar Grama Panchayat.	Not included in the annual plan of Mannar Grama Panchayat.	0%	NA

C	Construction of small sewage treatment plant with screening, septic tank and disinfection to the storm water drain of Parumala Town	Kadapra Panchayat					
C	Construction of small sewage treatment plant with screening, septic tank and disinfection to the storm water drain of Mannar Town	Mannar Panchayat					
C	Construction of compound wall with fencing	Irrigation department					
C	Removing light jungle and muddies from river courses	Irrigation department					

C	Electrical-Light arrangements and Surveillance cameras	Irrigation department					
C	Regualting activites in flood plain zone, protection and management of flood plain zone	Irrigation department					
	Greenery developmentPlantation plan. Plantation on both sides of the river, setting up biodiversity parks on flood plains by removing encroachment	Irrigation department					

C (b) (ii)	Green Protocol implementation in all Offices institution & Public function	Mannar, Kadapra/ Niranam Panchayat	Green Protocol is strictly observed in Mannar GP and other offices as well as public functions. Strict instruction in writing is given to owners of auditoriums, assembly halls, etc to comply with Green protocol while conducting ceremonies.	Green Protocol is strictly observed in Mannar GP and other offices as well as public functions. Strict instruction in writing is given to owners of auditoriums, assembly halls, etc to comply with Green protocol while conducting ceremonies	Green Protocol is strictly observed in Mannar GP and other offices as well as public functions. Strict instruction in writing is given to owners of auditoriums, assembly halls, etc to comply with Green protocol while conducting ceremonies. Rs. 1,50,000/- has been allocated for a project for the setting up of cloth bag/paper bag unit so that use of plastic carry bags can be discouraged.	100%	Continuation of Green Protocol.

D(a)	Issues relating to E-flow, maintaining minimum environmental flow of river (by having watershed management provisions)	Irrigation department					
D (b)	Irrigation practices	Irrigation department					
E	Awareness programmes for sections of public	Kerala State Pollution Control Board					
C	Management of municipal, plastic, hazardous, biomedical and electrical waste	LSGD	Not included in the annual plan of Mannar Grama Panchayat.	Not included in the annual plan	Not included in the annual	0%	Not applicabl

				of Mannar Grama Panchayat.	plan of Mannar Grama Panchayat. Biomedical waste is collected from source and transported for processing by IMAGE (IMA Goes Eco-friendly), an initiative run by IMA (Indian Medical Association).		e

ACTION BY GROUND WATER DEPARTMENT

Sl. No.	Ref para item nos as per NGT Order no.673/2018 dated 20.09.2018	Activity	Progress in the month of January 2021	Progress in the month of February 2021	Progress in the month of march 2021	% works completed	Details of works remaining
1	B(i)	Ground Water resources and regulation of ground water extraction by industries particularly in over exploited as critical zones/blocks					
2	B(ii)	Ground water recharging / rain water harvesting					
3	B(iii)	Periodic ground waste quality assessment and remedial actions in case of contaminated ground water tube wells/bore wells or hand pumps					
4	B(iv)	For regulating use of ground water for irrigation purpose, adopting good irrigation practices					

Analysis Result of Drains Joining to Mannar-Thakazhi Stretch of Pamba River (2021-2022)																	
		Parameters															
Sl. No	**Name of Drain**	**pH**			**Electrical Conductivity (µS/cm)**			**BOD (mg/l)**			**COD (mg/l)**			**TC (Nos/100 ml)**		
	Months	**JAN**	**FEB**	**MAR**	**JAN**	**FEB**	**MAR**	**JAN**	**FEB**	**MAR**	**JAN**	**FEB**	**MAR**	**JAN**	**FEB**	**MAR**
1	Parumala Drain	7.1	NA	NA	43.7	NA	NA	4.1	NA	NA	48	NA	NA	800	NA	NA
2	Mannar Town Drain	6.9	NA	NA	42.55	NA	NA	3.9	NA	NA	16	NA	NA	8200	NA	NA
3	Kuriyathkadavu Thodu	7.1	7.1	6.8	93.97	98.62	39.74	2.9	1.6	0.8	40	24	4	3800	900	0
4	Karuvelil Thodu	6.9	NA	7.1	40.97	NA	34.66	3.1	NA	0.9	16	NA	8	800	NA	0
5	Nochithodu	7.1	6.8	7.6	99.06	96.53	403	2.9	1.1	3.8	16	8	16	1500	2000	1000
6	Pattaparambil Thodu	7.1	6.8	7.1	81.02	82.88	31.2	1.3	1.2	0.4	8	12	4	100	200	100
7	Kappiyarissery Thodu	6.8	NA	6.8	87.88	NA	34.1	1.9	NA	0.3	16	NA	4	1200	NA	2000
8	Kombankery Thodu	7.2	6.8	7.4	41.75	48.22	410.4	2.7	1.5	5.4	24	16	24	600	900	2600
9	Perackal thodu	6.9	6.7	7.1	144.14	112.24	29.57	1.8	1.3	1.6	16	24	8	700	1300	300
10	Erathodu	6.8	6.8	6.9	56.11	48.8	237.4	2	0.6	2.1	16	16	8	1800	700	300
11	Kolarayaru	6.8	6.9	7.1	38.22	41.32	30.06	1.2	1.4	1.5	8	8	8	1200	800	300

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs
(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

RIVER MANIMALA, ALAPPUZHA

S. No.	Activity to be monitored	Timeline	Submission of progress by State/UT- Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation	31.03.2021	NIL
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured	31.03.2020	NIL
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning	22.01.2020 22.01.2020	NIL
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose	22.01.2020 22.01.2020	NIL
	• Monitoring at State level must take place	Fortnightly commencing 21.12.2019	NIL

6	Progress report may be furnished by the State/UTs to • Secretary, Ministry of Jal Shakti • Member Secretary, CPCB	Monthly (preferably before 20th of every month)	NIL

6.1	Progress Report may be comprised of details along with completion timelines on:		
	(I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment.	2019-2020	Drains contributing to river pollution were identified. The drains are seasonal and water quality is above the require limit, no insitu treatment is required
	(II) Status of STPs, I&D and sewerage networks Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline	2020-2021	Proposal for setting up an FSTP by Cheng municipality is initiated.
	(III) Status of CETPs Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status		Since the area does not contain any industry a no requirement of any CETP, this action p revised.
	(iv) Status of Solid Waste Management & Details of Processing Facilities Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline		The adjoining local bodies are in the stage of developing and establishing adequate solid w management facilities also the solid waste du issues were not identified in the stretch durin field visit held during past 1 year
	(v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;	2019-2020	Water quality analysis result of the stretch up February 2021 is enclosed
	(vi) Preventing dumping of waste and scientific waste management including bio-medical waste, plastic	2019-2020	Awareness campaigns initiated.

	waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.	2020-2021	
	(vii)Ground water regulation		No ground water pollution is noted in the ar action yet to be initiated
	(viii) Adopting good irrigation practices	2020-2021	Action will be initiated.
	(ix) Protection and management of food plain Zones (FPZ)		Action will be initiated
	(x) Rain water harvesting		Action will be initiated
	(xi)Maintaining minimum Environmental flow of river		Action will be initiated
	(xii) Plantation on both sides of the river		Action will be initiated
	(xiii)Setting up biodiversity parks on flood plains by removing encroachment		Action will be initiated

ACTION PLAN FOR RIVER MANIMALA, KERALA

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of January 2021	Progress in the month of FEBRUARY 2021	Progress in the month of march 2021	% works completed	Details of works remaining
A(a)	Monitorng of river water quality	Kerala State Pollution Control Board	Continuing project	Result attached	Result attached	Result attached	100%	nil
A(b)	Rendering Plant at Eraviperoor or Thiruvalla	Eraviperoor/ Thiruvalla local body	31.03.2021	NIL	NIL	NIL	0%	Work to be initiated
C(ii)	Fencing of bridges, desilting, dredging and protection works, surveillance cameras at vantage points	Irrigation department	31.03.2021	NIL	NIL	NIL	0%	Work to be initiated
C	Preventing illegal discharge of septage and other waste water into the river. Formation of River Protection Group	Panchayath, Police , KSPCB	31.05.2020.	NIL	NIL	NIL	0%	Work pending due to COVID pandemic
C	Greenery developmentPlantation on both sides of the river, setting up biodiversity parks in flood plains and removing encroachment	Irrigation department in association with panchayath	31.03.2021	NIL	NIL	NIL	NIL	Yet to be intiated.
C(b)(ii)	Green Protocol implementatio n in all offices, institution & public functions	Kalloopara, Eraviperoor, Puramattom, Kaviyoor, Peringara, Kuttoor panchayaths	31.03.2020	NIL	NIL	NIL	100%	NA

D(a)	Issues relating to E-flow, maintaining minimum environmental flow of river (by having watershed management provisions)	Irrigation department, Hydrographic survey department	31.03.2021					Work to be initiated
C(ii)	Establishment of decentralized solid waste treatment facilities	Kalloopara, Eraviperoor, Puramattom, Kaviyoor, Peringara, Kuttoor panchayaths	31.12.2020	MCF (agreement executed)	Local protest against construction	work stopped	0%	100%
C	Installing household & community level solid and domestic sewage waste management	Kalloopara, Eraviperoor, Puramattom, Kaviyoor, Peringara, Kuttoor panchayaths	31.12.2020	Tendered 93 soak pit 93 compost pit 16 mini MCF's	Completed 1 soak pit, 1 compost pit 8 mini MCF	Completed 1 soak pit, 1 compost pit, 7 mini MCF	15 mini MCF, 2 soak pit, 2 compost pits	91 soak pit 91 compost pits, 1 mini MCF
C	Door to door collection of solid waste & Material Collection Facilities (MCF) & Resource Revcovery Facilities (RRF)	Kalloopara, Eraviperoor, Puramattom, Kaviyoor, Peringara, Kuttoor panchayaths	31.12.2020	HKM started door to door collect	stopped due to lack of MCF	started door to door collection		

ACTION BY GROUND WATER DEPARTMENT

Sl. No	Ref para item nos as per NGT Order no.673/2018 dated 20.09.2018	Activity	Timeline	Progress in the month of November 2020	Progress in the month of December 2020	Progress in the month of January 2021	% works completed	Details of works remaining
1	B(i)	Ground Water resources and regulation of ground water extraction by industries particularly in over exploited as critical zones/blocks	31.03.2021					
2	B(ii)	Ground water recharging / rain water harvesting in Govt offices	31.03.2021					
3	NGT order in O.A no.496/2016 Identification of illegal bore wells in the catchment area.	NGT order in O.A no.496/2016 Identification of illegal bore wells in the catchment area.	31.03.2021					

ANALYSIS REPORT OF DRAINS OF MANIMALA BETWEEN KALLOOPARA AND THONDRA MAR-2021

Sl. No.	Bottle no.	Name of Drains	Ph	BOD	COD	TC
1	TK1	Panayampalathodu	6.5	3.2	16	600
2	TK2	Padathupalam Thodu	7.8	1.2	8	1700
3	TK3	Thottappuzha	6.5	0.3	8	300
4	TK4	Kuttapuzha under Kattodubridge	6.9	0.7	8	200
5	TK5	Kadavumbara	6.5	0.4	4	200
6	TK6	Drain under Varappalam Bridge	NA	NA	NA	NA
7	TK7	Drain under kallupalam Bridge	NA	NA	NA	NA
8	TK8	Komalamthodu	NA	NA	NA	NA
9	TK9	Vennikulam Valiyathodu	NA	NA	NA	NA
10	TK10	Paduthodu	6.8	1.2	8	600
11	TK11	Mallappally Valiyathodu	NA	NA	NA	NA

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

RIVER KARUVANNUR, THRISSUR

S. No.	Activity to be monitored	Timeline	Submission of progress by State/UT- Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation		Yes
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured		STP implementation is going on
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning		Process is going on
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose		NA
	• Monitoring at State level must take place		
6	Progress report may be furnished by the State/UTs to • Secretary,Ministry of Jal Shakti • Member Secretary,CPCB		NA

6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment. (II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline (III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure,Gap Analysis, Proposed along with completion timeline, No. of industries and complying status (iv)<u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline (v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;		STP implementation is going on “ “ Thumboormuzhi plant is running. Windrow Compost plant having 4 ton capacity, construction completed, presently functioning well and produce Bio manure. NA

	(vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc. (vii)Ground water regulation (viii) Adopting good irrigation practices (ix) Protection and management of food plain Zones (FPZ) (x) Rain water harvesting (xi)Maintaining minimum Environmental flow of river (xii) Plantation on both sides of the river (xiii)Setting up biodiversity parks on flood plains by removing encroachment		As per Municipal Janakeeyasoothranam project, we are implementing household waste treatment units like ring compost and kitchen bin with subsidy

ACTION PLAN FOR RIVER KARUVANNUR, KERALA
SHORT TERM MEASURES

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of February 2021	Progress in the month of March 2021	Progress in the month of April 2021	% works completed	Details of works remaining
	Thirukuzhythodu							
A(a)(iv)	Surveillance to restrict dumping of wastes into river and its branches	Vallachira Panchayat with the help of Police	Camera will insta place for survelli during this year.I for installation o Camera will imp within three mo	ongoing	ong oing	ongoin g	Par tial ly co mp let ed	Surv elia nce acti on take n by war dlev el sani tati onc om mitt ee

E	Cleaning and desilting of canal	Irrigation Department	ആക്ഷൻ പ്ളാനിൽ ഉൾപ്പെടുന്ന പ്രവൃത്തികൾ നടപ്പിലാക്കുന്നതിനായി CMDRF ഹെഡിൽ ഉൾപ്പെടുത്തി സാമ്പത്തികാനുമതിക്കായി സമർപ്പിച്ചിരുന്നുവെങ്കിലും ഫണ്ട് ലഭിച്ചിരുന്നില്ല. ഇറിഗേഷനു തനത് ഫണ്ട് കുറവായതിനാൽ NGT ക്കു വേണ്ടി തയ്യാറാക്കിയ ആക്ഷൻ പ്ളാനിൽ ഉൾപ്പെടുത്തിയ ജലസേചന വിഭാഗവുമായി ബന്ധപ്പെട്ട പ്രവൃത്തികൾക്ക് ആയവയുടെ അടിയന്തിര സാഹചര്യം കണക്കിലെടുത്ത് ഫണ്ട് അനുവദിക്കണമെന്ന് അപേക്ഷിച്ചുകൊണ്ട് 26-04-2021 ൽ തൃശ്ശൂർ ജില്ലാ കളക്ടർക്ക് കത്ത് നൽകിയിട്ടുണ്ട്.					
E	Cleaning and desilting of canal	Vallachira Panchayat	4months	nil	nil	nil	100	0
		Thodu near Kadalassery bridge						
A(b)	Identification of pollution sources and surveillance to restrict dumping of wastes	Vallachira, Pudukad & Nenmanikkara Panchayats	1 month (Not in Nenmanikkara Grama Panchayath)	Ongoing	Ongoing	Ongoing	75	25
E	Cleaning and desilting	Vallachira Panchayat	4months	nil	nil	nil	100	nil

E	Cleaning and desilting	Irrigation Department	ആക്ഷൻ പ്ളാനിൽ ഉൾപ്പെടുന്ന പ്രവൃത്തികൾ നടപ്പിലാക്കുന്നതിനായി CMDRF ഹെഡിൽ ഉൾപ്പെടുത്തി സാമ്പത്തികാനുമതിക്കായി സമർപ്പിച്ചിരുന്നുവെങ്കിലും ഫണ്ട് ലഭിച്ചിരുന്നില്ല. ഇറിഗേഷനു തനത് ഫണ്ട് കുറവായതിനാൽ NGT ക്കു വേണ്ടി തയ്യാറാക്കിയ ആക്ഷൻ പ്ളാനിൽ ഉൾപ്പെടുത്തിയ ജലസേചന വിഭാഗവുമായി ബന്ധപ്പെട്ട പ്രവൃത്തികൾക്ക് ആയവയുടെ അടിയന്തിര സാഹചര്യം കണക്കിലെടുത്ത് ഫണ്ട് അനുവദിക്കണമെന്ന് അപേക്ഷിച്ചുകൊണ്ട് 26-04-2021 ൽ തൃശ്ശൂർ ജില്ലാ കളക്ടർക്ക് കത്ത് നൽകിയിട്ടുണ്ട്.					
	Neerolithodu							
E	Cleaning and desilting	Irrigation Department	4months					Work submitted in CMDRF. FS not obtained.
	Painkilikayal thodu							
E	Cleaning and desilting	Irrigation Department and Vallachira Panchayat	4months	NA	NA	NA	NA	Not belongs to vallachira
	Kadathodu							

A(b)	Identification of pollution sources and surveillance to restrict the dumping of wastes	Vallachira & Nenmanikkara Panchayats	1 month Camera will instal in this place for survellience during this year.Project for installation of Camera will implement within three months.	ONGOING	ong oing	ongoing	75	25
E	Cleaning and desilting	Irrigation Department	4months	0	0	0	0	
	Main Stream –along Karuvannur							
A(a)(iv)	Periodic Surveillance to restrict the dumping of waste into river and imposing Fine	Irinjalakkuda Municipality, Police Dept.				Night squad arranged for inspecting waste dumping into the river. But issues are not noticed		
A(b)	Sanitation Survey	Irinjalakkuda Municipality	3 Months	completed				

A(b)	Closing of all unauthorized outlets leading to the river	Irinjalakkuda Municipality				Inspection on going – no unauthorized outlets leading to the river at the present		
E	Boards to display slogans against littering waste in various Places other IEC Activities Like posters, notices and classes	Irinjalakkuda Municipality	6 months			Installed boards along Karuvannur river side against littering waste and animal bath in		

						the Karuvannur river. Board installation process ongoing in various places of municipal area		
	Monitoring							
A(a)(iv)	River water quality monitoring	KSPCB	Ongoing; monthly frequency					
A(b)	Inspection & effluent quality monitoring of the Flats, industrial units, service stations, hospitals,hotels etc	KSPCB	Ongoing					
Long Term Plan								
Sewage treatment facilities to all house holds		Vallachira Grama	1 yr	5	1	2	108 nos.	2 nos.

	Panachayat						
Construction of FSTP and STP	Irinjalakkuda Municipality	2 years			Municipal Council approved agencies for preparing DPR		
Setting up of a modern crematorium at Mandarakkadavu, Arattupuzha	Vallachira Grama Panachayat	2 years Setting upof moder n cremet orium at pallisse ry will be include d in the annual project	NIL	NIL	NIL	0	100

		2021-22					
Solid waste treatment facility	Vallachira Grama Panachayat	2 years	Harita Karmasena takeall solid wastes into MCF	Harita Karmasena takeall solid wastes into MCF	Harita Karmasena takeall solid wastes into MCF	60	40
Construction of Windrow composting plant	Irinjalakkuda Municipality	2 years			Windrow Compost plant having 4 ton capacity, construction completed, presently functioning well and produce Bio		

					manure.		
Rejuvenation of Kanathodu	Irrigation Department	1 year					
Installation of CCTV for Surveillance to prevent the dumping of waste in to the river	Irinjalakkuda Municipality	2 years			Police Department installed CCTV NEAR Karuvannur bridge		

ACTION BY GROUND WATER DEPARTMENT

Sl. No.	Ref para item nos as per NGT Order no.673/2018 dated 20.09.2018	Activity	Progress in the month of March 2021	Progress in the month of April 2021	% works completed	Details of works remaining
1	B(i)	Ground Water resources and regulation of ground water extraction by industries particularly in over exploited as critical zones/blocks	According to the latest GEC report there is no critical / over exploited blocks in Thrissur Dt.	According to the latest GEC report there is no critical / over exploited blocks in Thrissur Dt.		
2	B(ii)	Ground water recharging / rain water harvesting				

3	B(iii)	Periodic ground waste quality assessment and remedial actions in case of contaminated ground water tube wells/bore wells or hand pumps	No water quality issues reported in the GWD water level monitoring wells.	Water samples collected from selected observation stations and dispatched to RAL, Eranakulam for analysis.		
4	B(iv)	For regulating use of ground water for irrigation purpose, adopting good irrigation practices	Suggestions given to farmers for Rain water harvesting to recharge aquifers.	Suggestions given to farmers for Rain water harvesting to recharge aquifers.		

ACTION PLAN BY GRAMAPANCHAYATH

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of February 2021	Progress in the month of March 2021	Progress in the month April of 2021	% works completed	Details of works remaining
C	MANALIPUZHA RIVER PROTECTION -Jalaraksha Jeevaraksha - Manalipuzha conservation	Vallachira Grama Panchayath	1 year	900 m	NIL	NIL	60	600M
C	Setting up of Nursery for Bamboo seedlings in Kadalassery	MGNREGS	31.03.2020	Suit able land	Suitable land not available	Suitab le land	0	10 0

				not available for setting up of nursery	for setting up of nursery	not available for setting up of nursery		
C	Side protection of Manalippuzha with organic materials available locally	MGNREGS	31.03.2020	Work did not implented due to greater depth of the river	Work did not implented due to greater depth of the river	Work did not implented due to greater depth of the river	0	100
C	Side Protection of Manalippuzha with Bamboo plants	MGNREGS	31.03.2020	nil	nil	nil	100	0

C	Deepening & Protecting Muttikkal Thodu by Spreading Geo Textiles	MGNREGS	31.03.2020	nil	nil	nil	100	0
C	Cluster 2-Kurumaly puzha sub river bed -Project document preparation	Puthukkad Panchayath	1 year	Documentation completed	Documentation completed	Documentation completed	100	Documentation completed
C	Manalippuzha River Protection-Jala Raksha, Jeeva Raksha , Survey and Tree Plantation	Nenmenikkara Grama Panchayat	31.03.2020		3.5km survey(out of 7km)have been completed and survey posts have been fixed.	Two sides of national highway near B.R.D. car world have been cleanced and		

						barriers & speed breaker camm era have been fixed by National highway authority		
C	Manalipuzha River protection	MGNREGS	31.03.2020					
A(b)	Protection and reconstruction and protection of Paliyekkara Kayalathod	MGNREGS	31.03.2020					
A(b)	Reconstruction and protection of Paliyekkara Karama Thodu	MGNREGS	31.03.2020					

KARUVANUR

05.04.2021

SL. NO	PARAMETER	UNIT	KT	MRK	KND	MDK	THR	KRV
1	PH		6.4	6.4	6.5	5.6	6.5	6.7
2	EC	µ/cm	52.8	56.01	47.3	118.3	56.3	56.2
3	BOD	mg/L	2.3	1.6	1.2	1	2.2	1
4	DO	mg/L	6.8	6.8	5.7	5.6	7	6.1
5	COD	mg/L	8	4	8	12	8	4
6	TC	CFU/100ml	400	900	600	700	400	600
7	FC	CFU/100ml	200	300	100	200	100	200
8	FS	CFU/100ml	20	30	30	40	30	20

KT - KANAKKAN KADAVU, KARUVANNUR

MRK - NEEROLI THODU,
KARUVANNUR EEROLI THODE

KND - KANATHODU, KARUVANNUR

MDK - MUTTIKKAL DAM, KARUVANNUR

THR- THIRUKUZHI, KARUVANNUR

KRV - PAINKILIKAYAL THODU, KARUVANNUR

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

RIVER KECHERY, THRISSUR, APRIL 2021

S. No.	Activity to be monitored	Timeline	Submission of progress by State/UT- Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation	31.12.2021	DPR submitted before KIIFB Modern Market with STP at Ottupara (18 KLD) & Athani (14.9 KLD)
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured	31.12.2021	DPR submitted before KIIFB Modern Market with STP at Ottupara (18 KLD) & Athani (14.9 KLD)
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning	31.12.2021	DPR submitted before KIIFB Modern Market with STP at Ottupara (18 KLD) & Athani (14.9 KLD)
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose		N.A.
	• Monitoring at State level must take place		N.A.
6	Progress report may be furnished by the State/UTs to • Secretary,Ministry of Jal Shakti • Member Secretary,CPCB	Applicable at State Level	

6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment.	Ongoing Process	Polluting Sources & Illegal outlets were identified, notice issued as per Kerala Municipal Act and removed. Doing regular inspection.
	(II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline	31.12.2021	DPR under preparation. 2 common STPs are proposed, One at Athani (350 KLD approximate) and other at Ottupara (500KLD approximate). Site identified.
	(III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure,Gap Analysis, Proposed along with completion timeline, No. of industries and complying status		Nil
	(iv)<u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline	March 2021	**Bio-waste**: Presently using Biogas plant. Collecting Bio-degradable waste from houses and commercial establishments through Kudumbasree Unit – "Bhumi mithra" Construction of windrow compost plan 80% work completed **Non-Bio waste**: Door to door collection from houses and commercial establishments ongoing through Harithakarma sena. The collected waste handing over to Clean Kerala Company.
	(v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;		Tributaries Akamala Ottupara Thodu Drains-2 Wadakkanchery & Ottupara.

	(vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.		Bio-medical waste collected by IMAGE. Two MRF were setup at Aryampadam and Kumbalangad. Plastic waste handing over to Clean Kerala Company. RRF constructed. Bailing machine installed.
	(vii)Ground water regulation		Construction of 1726 rain pits for ground water recharge completed in the year 2019-2020 under Ayyankali Urban Employment Scheme.
	(viii) Adopting good irrigation practices		Good irrigation practices will implement in co-operation with Agriculture and irrigation department. Irrigation canal cleaning completed after 2018 flood.
	(ix) Protection and management of food plain Zones (FPZ)		Not yet started.
	(x) Rain water harvesting	Ongoing process	Guaranteed the construction of Rain water harvesting facility for residential building above 150m^2. Occupancy certificate issued only after verification of the above.
	(xi)Maintaining minimum Environmental flow of river		Not yet started.
	(xii) Plantation on both sides of the river		Around 1000 Bamboo trees planted along 6.5km of Wadakkanchery River on both sides

			in co-operation with KFRI.
	(xiii)Setting up biodiversity parks on flood plains by removing encroachment		Recovered 10.5 Acres of encroached land along Wadakkanchery River. Will prepare Project as per Municipal Council Decision, for setting up of bio-diversity Parks.

ACTION PLAN FOR RIVER KECHERY, KERALA

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of February 2021	Progress in the month of March 2021	Progress in the month of April 2021	% works completed	Details of works remaining
	WADAKKENCHERY RIVER -SHORT TERM MEASURES							
A(b)	Identification of illegal outlets from houses and shops/other establishments in town and imposing fine	Wadakkanchery Municipality, Ayyakali Urban Employment Guarantee Scheme & health squad	Completed					
E	Installation of CCTV s on the bank of river in town	Wadakkanchery Municipality	December 2021					Work not started due to scarcity of Municipal fund
C(ii)	Material recovery facility	Wadakkanchery Municipality	Completed					
C(ii)	Resource recovery facility	Wadakkanchery Municipality	Completed					
C(ii)	Renovation of existing biogas plant	Wadakkanchery Municipality						Presently functioning well
	Monitoring							

A(a)(iv)	River water quality monitoring	KSPCB	Monthly Monitoring in progress					
A(b)	Inspection & effluent quality monitoring of the Flats, industrial units, service stations, hospitals,hotels etc	KSPCB	Ongoing					
	Long Term Plan							
E	Identification and cleaning of polluted drains reaching wadakkancheri river	Irrigation Dept	30-03-2022					
A (b)	Common STP	Wadakkanchery Municipality, Kerala Infrastructure Investment Fund Board	December 2021					Site for one STP identified. Applied for NOC from District Collector (Land is Puzha Puramboke and Irrigation Department Canal Puramboke)
C(iii)	Windrow composting at Kumbalangad yard	Wadakkanchery Municipality	June 2021				80% work completed	
C(ii)	Modern slaughter House	Wadakkanchery Municipality, Kerala Infrastructure Investment Fund Board	December 2021					Lack of suitable site for the project

E	Forestation, desilting & deepening of Wadakkanchery river and fitting river side with coir geo net	Wadakkanchery Municipality	desilting deepening of Wadkanchery River 3 km in Municipal area completed 7655m3 desilt removed					Fitting river side with Coir Geo Net. Awaiting Municipal Council Decision for fund allocation
	Rain water harvesting	Wadakkanchery Municipality	Ongoing work					
	Ground water recharge	Wadakkanchery Municipality	Ongoing work					
	River survey	Wadakkanchery Municipality	Ongoing work					
	Short term plan (Kecheri river)							
E	Installation of CCTV in different locations along river side	PWD Electronic division						
E	Fixing Boards	Choondal Grama Panchayat	31/03/2021				ON going	E
A(a)(iv)	Surveillance to prevent flow of sewage /effluent to river	Choondal Grama Panchayat	Ongoing				Action taken	A(a)(iv)
A(b)	Stoppage of effluent from residential apartment (Shajan's flat) and pig farm into the river	Choondal Grama Panchayat	Action Taken				Stop Memo Had been Given to Concerned persons	A(b)

	Long TermPlan (Kecheri river)							
E	Side protection by fixing coir geo nets	Choondal Grama Panchayat	March 2021					
E	Survey process of Kechery river portion belong to Choondal Grama Panchayat to mark the boundary and encroachment	Revenue Department						
E	Laying of survey station	Choondal Grama Panchayat	completed					
E	Digital maping and seminar on pollution control	Forestry College, Vellanikkara	31/05/2020					

IRRIGATION DEPARTMENT

Sl. No.	Activity to be monitored	Timeline	Submission of progress by State/UT-Compliance status	Progress for the month April 2021
1	NGT-Desilting of tributaries of river Kechery puzha and Wadakkancherypuzha in Thrissur District.	2 years	-	Estimate submitted for fund

SHORT TERM MEASURES

No.	Activity	Implementing agency	Time line	Progress in the month of August	Progress in the month of September	% works completed	Details of works remaining
NIL							

LONG TERM WORKS

No.	Activity	Implementing agency	Time line	Progress in the month of August	Progress in the month of September	% works completed	Details of works remaining

1	NGT-Desilting of tributaries of river Keechery puzha and Wadakkancherypuzha in Thrissur District.	Irrigation Department	2 years	-	-	-	Estimate submitted for fund

ACTION BY GROUND WATER DEPARTMENT

Sl. No.	Ref para item nos as per NGT Order no.673/2018 dated 20.09.2018	Activity	Progress in the month of March 2021	Progress in the month of April 2021	% works completed	Details of works remaining
1	B(i)	Ground Water resources and regulation of ground water extraction by industries particularly in over exploited as critical zones/blocks	According to the latest GEC report there is no critical / over exploited blocks in Thrissur Dt.	According to the latest GEC report there is no critical / over exploited blocks in Thrissur Dt.		
2	B(ii)	Ground water recharging / rain water harvesting				
3	B(iii)	Periodic ground waste quality assessment and remedial actions in case of contaminated ground water tube wells/bore wells or hand pumps	No water quality issues reported in the GWD water level monitoring wells.	Water samples collected from selected observation stations and dispatched for analysis.		
4	B(iv)	For regulating use of ground water for irrigation purpose, adopting good irrigation practices	Suggestions given to farmers for Rain water harvesting to recharge aquifers.	Suggestions given to farmers for Rain water harvesting to recharge aquifers.	100	0

ACTION PLAN BY GRAMAPANCHAYATH

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of March 2021	Progress in the month of April 2021	% works completed	Details of works remaining	No. (as per Action Plan)
C	Punarjani Kecherri river	Choondal Grama Panchayat	31.03.2021				Flood Wastes from the river has	C

							been removed and made water flow easily which reduced chances of flood .	
C(ii)	Surveying of river side, eviction and planting trees	Choondal Grama Panchayat	31.03.2021				Survey completed	C(ii)
C	Side Protection	Choondal Grama Panchayat	31/03/2021					
C	Bio fencing related to river bank protection – water and soil Conservation project ward 3,4,7	MGNRES	31/03/2021					

KECHERI RIVER				
Date of sampling - 05.04.2021				
SL. NO	**PARAMETER**	**UNIT**	**VAD1**	**VAD2**
1	pH	-	6.6	6.5
2	Electrical Conductivity	µ/cm	92.14	88.6
3	BOD	mg/L	2.1	1.6
4	DO	mg/L	6.3	7.4
5	COD	mg/L	12	4
6	TC	CFU/100ml	700	400
7	FC	CFU/100ml	200	100
8	FS	CFU/100ml	20	NIL

VAD1 - WADAKKANCHERY PUZHA (WADAKKANCHERY BRIDGE), KECHERY
VAD2 - WADAKKANCHERY PUZHA(CHALIPPADAM ROAD), KECHERY

National Mission for Clean Ganga

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(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)
RIVER PUZHAKKAL, THRISSUR

S. No.	Activity to be monitored	Timeline	Submission of progress by State/UT- Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation	28.03.2021	In progress
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured	28.03.2021	In progress
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning		In progress STP completed at Mattampuram.
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose		Tendered and awarded STP at district hospital – Applied for PCB permission. Response from PCB awaiting.
	• Monitoring at State level must take place		NA

6.1	Progress Report may be comprised of details along with completion timelines on: (I)Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment. (II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status (iv)<u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river; (vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste	Water quality monitoring of polluted river stretch is done periodically, (Report attached.)	Illegal outlets 91530 houses and 122 establishments) were identified and notice issued. 1) <u>Mattampuram (Vilvattom Zonal)</u> File submitted to get consent to operate from PCB. 2. <u>Snehaveedu (Vilvattm Zonal)</u> Agreement not executed 3. <u>District Hospital Thrissur.</u> Agreement Signed. Initial PCB NOC has been got. 70 percentage of industries installed ETPs. Notice were issued to remaining establishments <u>Existing infrastructure</u> 1. MCF - 12 number 2. RRF – 3 Number 3. OWC Plant - 2 Number – Commissioned - capacity of 12 tpd. 4. 8 Biogas plants 6 numbers of total capacity 2 ton. 5.20 Vehicles (4 truck, 5tractors, 8 ommercial utilty vehicles, Tractor with

	and decentralizing waste processing, including waste generated from hotels, Ashrams, etc. (vii)Ground water regulation (viii) Adopting good irrigation practices (ix) Protection and management of food plain Zones (FPZ) (x) Rain water harvesting (xi)Maintaining minimum Environmental flow of river (xii) Plantation on both sides of the river (xiii)Setting up biodiversity parks on flood plains by removing encroachment	Riverside protection work for a stretch of 500m has been completed. Construction of second stretch of 450m is ongoing	trailer 5, 33 Pettiauto) 6.Aerobic bins – 23 numbers. 7. 23 Harithakarmasena groups (140 members) 8.Door to Door collection from 60000 houses & 15000 commercial institutions <u>New proposals</u> 1.New Owc plant Kovilakathumpadam is started. 2. MRF at Kuriachira. 3. 5 No of commercial utility vehicle will be purchased for door to door collection 4.New Bailing machine for RRF will be purchased. Tender process is going on. 5.New building for segregation yard is planned and worth Rs:40 Lakhs are year marked. 6.100% door to door collection can b achieved within 3 months. 90% is covered and rest 10% will be covered within 3 months. <u>VII</u> 1. To prevent dumping Corporation is indenting to collect the waste from 100% door. 90% is covered. 2.No.of dumping site could be reduced by the continuous monitoring & observations 3. Biomedical waste is processed by IMAGE .This year Corporation earmark Rs.1 crore for the construction of new

			biomedical incinerator at corporation hospital. 4. Plastic waste is collected segregated and sent to recycling system. Multi layer plastics are shredded and used for road construction through clean kerala company. Non recyclable plastic wastes are sent to KEIL through Clean Kerala company. Corporation made a negotiation with ACC cement factory for co-processing of non recyclable plastic waste. 5. Bulk waste generators (hotels and Asrams) process their wastes in their own premises. They use biogas plant and aerobic compost bin.

ACTION PLAN FOR RIVER PUZHAKKAL, KERALA
SHORT TERM MEASURES

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of March 2021	Progress in the month of April 2021	% works completed	Details of works remaining
A(b)	Identification of illegal outlets into the Panchikkal thodu and subsidiary drains	Thrissur Corporation	3 months		0		
A(b)	Stoppage of discharge of waste water from the surrounding houses and institutions to the drains which leads to Panchikkal thodu	Thrissur Corporation	6 months		5		
A(b)	Ensure adequate treatment facility is provided for waste water and solid waste generated from Sri Dharma Sastha temple situated on the banks of the river	Adat Grama Panchayat					
E	Desilting of Karakattuchal	Irrigation Department	4 months				The Thrissur Corporation has informed that it has started the work of removing the sludge deposite

							d in the Karakkattuchal thodu and an amount of Rs. 2.49 lakh has been allotted for this.
E	Desilting of Panchikkal thodu	Irrigation Department	4 months				The Thrissur Corporation has informed that it has started the work of removing the sludge deposited in the Panchikkal thodu and an amount of Rs. 12 lakh

							has been allotted for this.
E	Desilting of Kurinjikkal thuruth	Irrigation Department	4 months				The Thrissur District Soil Conservation Officer has informed that the Administrative Sanction has been received to include the work of Kurinjikkal thodu in the Rebuild Kerala Project and the work will

							start once the TS is obtained .
E	Desilting of Muppuzha	Irrigation Department	4 months				The Thrissur Corporation has informed that the KLDC Department has received Administrative Sanction to clean the Muppuzha thodu and increase the depth.
E	Side protection, desilting and deepening work of vanchikulam thodu at Poothole of length about 40 km (work in progress).	Thrissur Corporation	3 months		Side protection 1.89 kilometer		

					completed. Disilting and deepened work done by irrigation department.		
E	Annual desilting, cleaning of main drains and canals within the corporation area (work in progress).	Thrissur Corporation	3 months		Completed before Monsoon.		
Monitoring							
A(a)(iv)	River water quality monitoring	KSPCB	Ongoing; monthly frequency				
A(b)	Inspection & effluent quality monitoring of the Flats, industrial units, service stations, hospitals, hotels etc	KSPCB	Ongoing				
Long Term Plan							
A(b)	Ensuring installation of treatment facilities for at least 50% of the identified establishments	Thrissur Corporation	18 months				
A(b)	100% completion of treatment facilities for targeted institutions/ buildings	Thrissur Corporation	24 months				
A(b)	Construction of a drain 40 km with covering slabs to avoid the direct disposal of waste in to the open drain	Thrissur Corporation	24 months		24.01 KM completed. Selection memo issued		

A(b)	Construction of a drain 9000 m with covering slabs to avoid the direct disposal of waste in to the open drain	Thrissur Corporation	24 months				
A(b)	Construction of sewage treatment plant of 100 KLD and 360 KLD at Ramavarmapuram and District Hospital, Thrissur in Amrut Project	Thrissur Corporation	24 months		360 kld PCB applied and awaiting for approva l. 100 KLD Applicat ion for PCB applied.		
A(b)	Constructing decentralised sewerage scheme at Vachikulam covering most populated 7 divisions of Thrissur Corporation and more than 10000 houses & institutions	Thrissur Corporation	24 months		Revision estimate as per structural veting submitted for revised TS at Chief Engineers Office TVM.		

ACTION BY GROUND WATER DEPARTMENT

Sl. No.	Ref para item nos as per NGT Order no.673/2018 dated 20.09.2018	Activity	Progress in the month of March 2021	Progress in the month of April 2021	% works completed	Details of works remaining
1	B(i)	Ground Water resources and regulation of ground water extraction by industries particularly in over exploited as critical zones/blocks	According to the latest GEC report there is no critical / over exploited blocks in Thrissur Dt.	According to the latest GEC report there is no critical / over exploited blocks in Thrissur Dt.		
2	B(ii)	Ground water recharging / rain water harvesting				
3	B(iii)	Periodic ground waste quality assessment and remedial actions in case of contaminated ground water tube wells/bore wells or hand pumps	No water quality issues reported in the GWD water level monitoring wells.	Water samples collected from selected observation stations and dispatched to RAL, Eranakulam for analysis.		
4	B(iv)	For regulating use of ground water for irrigation purpose, adopting good irrigation practices	Suggestions given to farmers for Rain water harvesting to recharge aquifers.	Suggestions given to farmers for Rain water harvesting to recharge aquifers.		

ACTION PLAN BY GRAMAPANCHAYATH

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of February 2021	Progress in the month of March 2021	Progress in the month of April 2021	% works completed	Details of works remaining
C	Removing weeds in Puzhakkal River	Adat Gramapanchayath	31.03.2020				100 %	
C(ii)	Removing waste from all wards through kudumbasree	KUDUMBASREE	31.03.2020				100 %	
C	water conservation projects-- tree plantation under GA in18 wards 100000/ each	MGNREGS	31.03.2020				60%	
C	ward 14 pachthurthucomstruction	Haritha Keralam Mission	31.03.2020				100 %	
C	side protection to water bodies coir geo textile	MGNREGS	31.03.2020				60%	

PUZHAKKAL

Date of sampling - 12.04.2021

SL. NO	PARAMETER	UNIT	SBA	KTH	PTU	MP
1	PH		6.2	6.1	6.8	6.7
2	EC	µ/cm	186	184.2	177.7	133.2
3	BOD	mg/L	3.1	2.9	3.2	2.9
4	DO	mg/L	8.1	9.3	7.5	5.9
5	COD	mg/L	20	16	20	16
6	TC	CFU/100ml	700	800	800	900
7	FC	CFU/100ml	200	100	200	300
8	FS	CFU/100ml	20	20	10	20

SBA - NEAR SOBHA CITY, KIZHAKKUMMURI ROAD , PUZHAKKAL

KTH - KURINJAKKAL THODU, PUZHAKKAL

PTU - PANCHIKKAL THODU, PUZHAKKAL

MP - MUPPUZHA, PUZHAKAL

The BOD values at 2 stations, namely, SBA and PTU are slightly above the prescribed limit. Direction has been given to Thrissur Corporation to take necessary action to prevent sewage from reaching the river and to bring down the BOD below 3 mg/l.

Kerala State Pollution Control Board, District Office, Kozhikode

NATIONAL MISSION FOR CLEAN GANGA

Format for submission of monthly progress report by state/UTs

(Hon'ble NGT in the matter of OA.No. 673/2018 dated 6/12/2018)

For the month of April 2021 – Kallai polluted river stretch

Sl No	Activity to be monitored	Timeline	Submission of progress by state/UT-complinance status
1	Ensure 100% treatement of sewage at least in-situ remediation		
2	Commencement of setting up of STPs and other sources of generation of sewage to the STPs must be ensured	28.02.2021	Construction of 2 MLD, 1 MLD STP plant of Calicut medical college started
3	Timeline for completing all steps of action plans including completion of setting up STPs and their commissioning	31.03.2022	Proposal for 13 MLD STP (6 MLD STP plant proposed at Kothi, 7 MLD STP plant proposed at Avikkal) – Tendering in progress
4	Chief secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the secretary level • Chief secretaries may have an accountable person attached in their office for this purpose		NIL
	• Monitoring at state level must take place	Fortnightly commencing 21.12.2019	NIL

5	Progress report may be furnished by the state/UTs to • Secretary,ministry of jal shakti • Member secretary,CPCB	Monthly (preferably before 20th of every month)	NIL
5.1	Progress report may be comprised of details alongwith completion timeline on:		
	(i) identification of polluting source including drains contributing to river pollution and action as per NGT order on insitu treatment .	Action continuing	Drains identified. Pollution load calculated. Action plan prepared. Joint squad of PCB and Corporation inspection in action. Issued notice to 92 units during the period 2019. 30 units installed treatment facilities. During Jan-Mar 2020 joint squad of PCB and corporation inspected 82 units. Issued notice to 56 units. In 16 units installation of treatment units Effluent treatment facilities are under progress.Issued notice to 36 units and a fine of Rs.18500/- was imposed for the month of September 2020..Monthly progress report submitted by Kozhikode corporation attached as **Annexure 1**
		31.03.2021	Dredging of Kallayi river from Kaduppini to Kothi -DPR submitted to SE,INC,KKD on 16.10.2019for Rs 773.05 lakhs(7.30 crores for desilting of river and 43.05 lakhs for fencing of 5 bridges) under action plan of Kallayi river and fencing of sides of the river.
		31.07.2019	Work entrusted to KWIL – Dredging ,Desilting and removal of weeds fro EK canal -11.2 Km **Submitted by Irrigation department**
	(ii) status of STPs, I&D and sewage networks details of existing infrastructure,proposed	31.12.2020 ,work in progress	(i)Construction of 2 MLD, 1 MLD STP plant of Calicut medical college started.-10% work completed

	along with completion timeline	31.03.2021	(ii)Proposal for 13 MLD STP (6 MLD STP plant proposed at Kothi, 7 MLD STP plant proposed at Avikkal) – Tendering in progress. (iii)STP of 13 MLD proposed at Kotooli.About 12% of sewer lines were laid by KWA – Honble NGT stayed the project (OA no. 215/2016). (iv)Individual septic tank and soak pit system provided for house hold, units like bakery, cool bars small restaurants with less seating capacity. Individual STPs for high rise building, hotels, Restaurants, Commercial buildings.
	(iii) status of CETPs details of existing CETP and ETP infrastructure ,Gap analysis,proposed along with complying status	No specific proposal	No CETP proposed
	(iv) status of solid waste management & details of processing facilities details of existing infrastructure, Gap analysis,proposed along with completion timeline		**<u>Kozhikode corporation</u>**
		Functioning	(i) Existing centralized waste disposal facility of 100 MT/DAY at Njeliyanparamba(windrow composting)
		30/06/2021. Work in progress	(ii) Proposal of 450 TPD waste to energy plant at Njeliyanparamba implementation in progress. Caping work started.
		Functioning	(iii) Chicken waste rendering plant of 40TPD functioning in Thamarassery – 170 chicken stalls of Kozhikode corporation are disposing off the waste through this rendering plant.
		Work in progress	Rendering plant construction for chicken stall waste – Perumanna . Peruvayal

		Functioning. And work progressing	(iv) 3 MRF facilities existing (At Njeliyamparamba(Super MRF) 3TPD-with plastic shredding unit, west hill industrial estate -2TPD --with plastic shredding unit,Near Jayanthi nagar colony) -70% completed
		Functioning	(v) 24 units of aerobic compost facilities existing (Tagore hall, S K Pottakkad hall, Jubilee hall, Mofusil bus stand,T.B. Clinic,Circle office).
		Functioning	(vi) 350 ring compost and 150 Biogas plants installed in house holds.-kkd Corporation 26 biogas plant complete –peruvayal 190 ring compost complete –mavoor
		Functioning	(vii) Community level biogas plant-3nos(Mental Hospital 1TPD, ITI Malikadav -1TPD, Juvine home- 1TPD)
		Functioning	(viii) 3 Biogas plants in market (Central market 2TPD, Vegitable market 2TPD, New bus stand,2TPD)
		Functioning	(ix)Treatment facility for waste in Central Market – Tendering in Progress
			(x) Establishment of slaughter house-
		30/03/2021	**Mavoor Panchayath** MCF 1 nos,ring compost,compost pit-Completed and functioning
		31/12/2022	**Perumanna Panchayat** Compost pit and MCF with baling machine (1 nos) -Work in progress
		31.03.2021	**Peruvayal Panchayat** Compost pit,mini MCF 2 nos,bio gas plant- Work in progress MCF-1 nos temporarly functioning
		31.03.2021	**Olavanna Panchayat** MCF-1 completed Mini MCF -3 Work in progress MRF -1 In block

	(v) latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;		Analysis report of Kallayi river stretch for the month of September 2020 Attached as **Annexure 2**
	(vi) preventing dumping of waste and scientific waste management including bio-medical waste plastic waste and decentralizeing waste processing, including waste generated from hotels, ashrams,etc.		Same as Item no. 5.1(v) Fine of 32 Lakhs imposed for illegal dumpinh of solid wastes into rivers and public places.Instalation of CCTV. Biomedical waste from Hospital,labs ,clinics collected through image, plastic waste disposal through recyclers. Individual solid waste processing facilities like bio gas plant, bio bins in high rise building, hotels, restaurants etc. Fencing proposed by irrigation department.
	(vii)ground water regulation		NIL
	(viii) adopting good irrigation practices		NIL
	(ix) protection and management of flood plain zones(FPZ),		Flood prone mapping- Proposed by irrigation department
	(x) Rain water harvesting	31/03/2021	**<u>Mavoor Panchayat</u>** Well recharging-Estimate under

			preparation
		31/03/2021	**Peruvayal Panchayat** Well recharging-Work in progress
		31/03/2021	**Olavanna Panchayat** Well recharging-Work in progress
	(xi) Maintaining minimum environmental flow of river		Initiated
			Perumanna Panchayat
		31/03/2021	Cleaning of Mampuzha river-Work in progress
			Perumanna Panchayat
		31/03/2021	Cleaning of Mampuzha river-Ongoing
			Olavanna Panchayat Cleaning of Mampuzha river-
		Completed	Completed
	(xii)Plantation on both sides of the river	Completed	**Mavoor Panchayat** 3500units completed
	(xiii) Setting up biodiversity parks on flood plains by removing encroachment		Bio park in Kozhikode district-Proposed by irrigation department

(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

ACTION PLAN FOR RIVER KALLAYI, KERALA

		Kozhikode Corporation							
No.	Activity	Implementing agency	Time line	Progress in the month of January 2021	Progress in the month of February 2021	Progress in the month of march 2021	Progress in the month of April 2021	% works completed	Details of works remaining
1	Identification of illegal outlets into storm water drain and issue Notice to such units	Kozhikode Corporation	30.12.2020	4 Notice Issued.		3 notices issued file imposed 1500	5 notice issued fine imposed 3750	On going work	
2	Waste to energy project proposed at Njeliyamparamba	KSIDC	30.06.2021	40 % of Legacy waste clearing completed.		On going	On going		
3	Establishment of Aerobic compost units	Kozhikode Corporation	Completed	Work Completed	Work Completed	Work Completed	Work Completed	100%	
	24 units established in 6 sites		functioning						

4	Segregation of solid waste at source level and treatment of house hold wastes	Kozhikode Corporation	30.06.2019	Work completed	Work Completed	Work Completed	Work Completed		
	300 ring compost and 150 biogas plant installed							Work completed	
5	Setting up of rendering treatment plant for chicken stall wastes	Fresh cut agency	on trial run	100% chicken waste collected	100% chicken waste collected	100% chicken waste collected and treated	100% chicken waste collected and treated		
	Installed in Thamarassery panchayath. Now waste is collected from 170 units								
								Completed	
6	Implementation of Green protocol unit	Kozhikode Corporation	30.06.19	Completed	Completed	Completed	Completed	100%	

7	*Setting up of common STP of (13 MLD)* *7.1 At Kothi bridge- 6 MLD plant proposed* *7.2 At Avikkal -7 MLD plant proposed*			Negotiation with the bidders completed. Market analysis of rates in progress	Selection notice issued.PCB and KCZMA application for NOC s	Selection notice issued.PCB and KCZMA application for NOC	Selection notice issued.PCB and KCZMA application for NOC	Total station survey stared and 15kms completed	Construction of 6 & MLD STP s and 98 KMS sewer line.
8	Cleaning of Canoli canal	Kozhikode Corporation	20.07.2019	Special Cleaning Drive Scheduled in Feb 2021	Special Cleaning Drive Scheduled in March 2021	Special Cleaning Drive Scheduled in APRIL 2021	Special Cleaning Drive Scheduled in MAY 2021	0%	Kwil Work on going
9	Purchasing of Solar Boat for Canoli canal cleaning	Kozhikode Corporation	31.03.2020	NA	NA	NA		Project Dropped	

10	Installation of CCTV Camera for the Identification and monitoring of illegal activities	Kozhikode Corporation	31.03.2020	NA	NA	NA	NA	Project Dropped	
11	Establishment of Mobile Septage Units	Kozhikode Corporation	31.03.2020	NA	NA	NA	NA	Project Dropped	
12	Action taken against dumping of wastes into river and public places	Kozhikode Corporation	Continuing	12 Notice Issued	12 Notice Issued	12 Notice Issued 8500 fine imposed	10 Notice Issued 7000	On going work	
13	Cleaning of B.K canal	Kozhikode Corporation	31.03.2020	Retaining wall of length 50m has been constructed. Slit removed for 50m	Railing work in bridges	Railing work in bridges	Fencing fixed	Work completed	Cleaning of tributaries 100m. Fixing o

									f f e n c i n g
14	Establishment of treatment plant at Medical college (3 MLDplant) Tender over 14.1 -2 MLD plant proposed 14.2- 1 MLD plant proposed	Kozhikode Corporation	31.03.2020	Estimate revised. Revised drawing and estimate presented before technical committee LSGD. Suggested corrections. Meeting to be scheduled for presenting the corrected estimate	Approval of revised drawing and estimate pending with the technical committee LSGD SITE.clearences process	Approval of revised drawing and estimate pending with the technical committee LSGD SITE laying of network to be initiated this month	2 MLD network started 150m excavation completed .pipe inspection completed and 2 MLDSTP site cleared.STP foundation works started.	5%	3 KMs of pipe laying

15	Construction of drains at Y.M.RC Ayyankar colony	Kozhikode Corporation	31.03.2020	RE pending with CE LSGD. Silt removal in progress	Re approved from LSGD work ongoing at site	Re approved from LSGD work ongoing at site	Work started , a report to chief technical examiner has been sent.	58%	300 m strom water drainage construction and 1000m canal side wall construction are pending.
16	Implementation of STP at Kottooli (13.5 MLD)	Kozhikode Corporation		Now stay order has been lifted. Additional fund is required					
17	Treatment facility for waste water in Central market	Kozhikode Corporation	EOI Process Ongoing	EOI Process Ongoing	EOI Process Ongoing				

18	Establishment of comfort stations	Kozhikode Corporation	5 comfort station work completed		5 comfort station work completed		60%	
19	Provide facility for	Suchitwa Mission	Neliyanparamba work completed. Others on going		Neliyanparamba work completed. Others on going		30 %	70%
	MRF,RRF, Super MRF			Neliyanparamba work completed. Others on going				
	3 units existing							
	19.1 Njeliyanparamb							
	19.2 Industrial estate							
	19.3 Meyorbhavanjayanthinagar colony							
20	Identification of illegal outlets from house to storm water drain and issue Notice to such Houses	Kozhikode Corporation	On going process	On going process	On going process	On going process		
21	Establishment of Plastic shredding unit	Kozhikode Corporation	On going process	On going process	Project started		100%	

22	Establishment of slaughtering unit	Kozhikode Corporation	Submitted to Impact Kerala for KIFB Aid –Got Initial Approval. Final Document Preparation going on					
23	Cleaning of drains in Kozhikode Town	Kozhikode Corporation	On going process	On going process	On going process	On going process		

	Perumanna Grama Panchayath								
No.	Activity	Implementing agency	Time line	Progress in the month of january 2021	Progress in the month of February 2021	Progress in the month of March 2021	Progress in the month of April 2021	% works completed	Details o remainin
1	Outlets into strom water drain and issue notice	Perumanna G P	Continues process	4 notice issued	6 notice issued	6 notice issued	6 notice issued	On going	
2	Establishment of six aerobic compost units in panchayat	Perumanna G P	Mar-21	Work started	Work started 1	Work started	Work started 1	80 % work completed	5 units w started if place is a
3	Collection and segregation of solid waste in the river	Perumanna G P	Continues process in every year					73 % work completed	

4	Setting up of residential treatment plant for chicken stall waste	Perumanna G P	Continues process	Resolution passed by Panchayat board to execute an agreement with Fresh cut	Resolution passed by Panchayat board to execute an agreement with Fresh cut	Resolution passed by Panchayat board to execute an agreement with Fresh cut,thamarassery kkd	Resolution passed by Panchayat board to execute an agreement with Fresh cut,thamarassery kkd	90%	
5	Setting up of 360 soak pit plant in all houses near the river area and panchayat	Perumanna G P MGNREGS	Mar-21	110 nos completed	110 nos completed	110 nos completed	119 nos completed	Remaining work has been suspended as lack of personal days for current year	
6	implimentation of 360 compost unit near river side and panchayat	Perumanna G P MGNREGS	Mar-21	110 nos completed	110 nos completed	110 nos completed	126 nos completed	Remaining work has been suspended as lack of personal days for current year	

7	Implementation of water flow project (aluvangal thazham perumbatta elamanapadam,valiyapadam.mampuzhthode naveekarana project no 260/2021 project cost 16.67 lakhs) . it is a joint venture project by grama,block and jilla panchayat	Perumanna G P, Kozhikode block panchayat, Kozhikode jilla panchayat	Mar-21					Estimate under preparation (AE project)	Tender h done	
8	Cleaning of mampuzha river (project name : mampuzha water flow restoration,project no 01/2018-19	Distric panchayat Kozhikode	2018-19	Completed by panchayat	Completed by panchayat	Completed by panchayat	Completed by panchayat	25 lakhs transferred to district panchayat	Work is c by distric panchaya ,kozhikoc	
9	Establishment of 18 nos of mini MCF in different wards including payyadimetal where the river is flowing	Perumanna G P MGNREGS	Mar-21	10 nos completed	11 nos completed		11 nos completed	100 %	7 un start	

10	Collection of plastic waste from the river	Perumanna G P	Continous process		Three time completed	Three time completed	Three time completed	NA	Proc be d ever

	Peruvayal Grama Panchayath								
No.	Activity	Implementing agency	Time line	Progress in the month of January 2021	Progress in the month of February 2021	Progress in the month of March 2021	Progress in the month of April 2021	% works completed	Details of works remaining
1	Outlet in storm water drain and issued notice	Peruvayal G P	Continuous process	20 notice issued	9 notice issued	9 notice issued	5 notice issued	On going	

2	Establishment of 5b units anaerobic composed unit in panchayat.	Peruvayal G P through MGNREGS	4/2021 TO 03/2021	WORK WILL COMMENCE ON THIRD WEEK OF DECEMBER 2020	WORK WILL COMMENCE ON THIRD WEEK OF MARCH 2021	WORK WILL COMMENCE ON THIRD WEEK OF MARCH 2021	WORK WILL COMMENCE ON	NA	
3	Setting up of rentering plant for chicken solid waste	Peruvayal G P	Continuous process	Commence on 18/09/2020	Commence on 18/09/2020	Commence on 18/09/2020	COMMENCE ON 18/09/2020	100%	
4	Setting up of 379 soak pit plant in all houses	Peruvayal G P	04/2020 to 03/2021	On going	On going	On going	ON GOING	Nil	170 will be finished within march 2021
5	Cleaning of mambuzha river (project name mambuzha renovation) project no : 190/2017-18	District panchayat Kozhikode	2017-18	Completed by panchayat	Completed by Panchayat	Completed by Panchayat	COMPLETED BY PANCHAYATH	25 lakhs transferred to district panchayat	Ongoing
6	Establishment of 8 numbers of mini9 MCF	Peruvayal G P through MGNREGS	4/2020 TO 2021	2 mini MCF completed	4 mini MCF completed	4 mini MCF completed	6 mini MCF Completed	80%	4 will started immediately

7	Collection of plastic waste from the river	Peruvayal G P	Continuous process		3 times collected	3 times collected	3 times collected	100%	Continuous process
8	Collection and segregation of solid waste in the river	Peruvayal G P	Continuous process	3 times collected	3 times collected	3 times collected	3times collected		Continuous process
9	Establishment of Bio gas plant	Peruvayal G P	2020-21	26 numbers completed	26 numbers completed	26 numbers completed	26 number completed	70%	Work will be completed by the end of february 2021
10	Well recharge	Peruvayal G P through MGNREGS	2020-21	63 numbers completed	63 numbers completed	63 numbers completed	78 number completed	82%	Work will be completed by the end of february 2021

				Mavoor Gp					
No	Activity	Implementing agency	Time line	Progress in the month of January 2021	Progress in the month of Febraury 2021	Progress in the month of march 2021	Progress in the month of April 2021	% Work completed	Details of work
1	MCF	Mavoor Gp	31.03.2019	Completed and functioning	Completed and functioning	Completed and functioning	Completed and functioning	100%	Nil
2	Fish market construction	Mavoor Gp	31.03.2019	Completed and functioning	Completed and functioning	Completed and functioning	Completed and functioning	100%	Nil
3	Ring compost	Mavoor Gp	31.03.2019	Completed and functioning	Completed and functioning	Completed and functioning	Completed and functioning	100%	190 units
4	Tree plantation in river side	Mavoor Gp	Completed	Completed	Completed	Completed	Completed	100%	3500 units
5	Compost pit	Mavoor Gp	Completed	Completed	Completed	Completed	completed	100%	1000 units
6	Well	Mavoo	31.03.202	Estimate	Estimate	Estimate	Estimate under		2 units (Buds sc

	recharge	r Gp	1	under preparation	under preparation	under preparation	preparation		dispensary)
7	Bucket compost	Mavoor Gp	31.03.2021	Ongoing	Ongoing	Ongoing	Ongoing	50%	502 units
8	Collection of non biodegradable waste	Mavoor Gp	Throughout the year	Ongoing	Ongoing	Ongoing	Ongoing		
9	Transportation of waste material to refinement unit	Mavoor Gp	Throughout the year	Completed	Completed	Completed	Completed	100%	31805KG

OLAVANNA GRAMAPANCHAYAT

No	ACTIVITY	IMPLIMENTING AGENCY	TIMELINE	PROGRESSIN THE MONTH OF JANUARY 2021	PROGRESSIN THE MONTH OF February 2021	PROGRESSING THE MONTH OF MARCH2021	PROGRESSING THE MONTH OF APRIL 2021	% WORKS COMPLETED	DETAILS O
1	Collection of plastic waste from the river	Olavanna gramapanchayat	Continous process	2 times collected	2 times collected	2 times collected	2 times collected	100%	Process continuing
2	Collection of segregation of solid waste in the river	Olavanna gramapanchayat	Continous process	2 times collected	2 times collected	2 times collected	2 times collected	100%	Process continuing
3	Establishment of Mini MCF in all wards	Olavanna gramapanchayat through MGNREGS	4/2020 To 3/2021	2 Mini MCF Completed	2 Mini MCF Completed	2 Mini MCF Completed	2 Mini MCF Completed		Remaining will sta
4	Cleaning of Mambuzha river	District Panchayat	2018/19						Completed
5	Well recharge	Olavanna gramapanchayat through MGNREGS	4/2020 To 3/2021	8 No's completed	8 No's completed	8 No's completed	8 No's completed		Work will be comp 2021
6	Setting up of 300sockpit plant in houses	Olavanna gramapanchayat through MGNREGS	4/2020 To 3/2021	48 No's completed	48 No's completed	48 No's completed	48 No's completed	15%	Work will be comp 2021

7	Action taken against dumping of waste into river	Olavanna gramapanchay at	Continous process				100%	Continuing

Irrigation Department

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of September 2020	Progress in the month of October 2020	Progress in the month of November 2020	% works completed	Details of works remaining
1	Desilting of Kallayi river from Kaduppini to Kothi in Kozhikode Corporation	Irrigation department	31.03.21	DPR submitted to SE,INC,KKD on 16.10.2019 for Rs 773.05 lakhs (7.30 crores for desilting of river and 43.05 lakhs for fencing of bridges) under action plan of kallai river				
2	Provide fencing on the sides of the Bridge	Irrigation department	31.03.21					
3	Dredging, Desilting & removal of weeds from E K Canal (11.2 km)	Irrigation department	31.07.19	Work entrusted to kerala waterways & infrastructure Ltd (KWIL)				
4	Bio Park in Kozhikode District	Irrigation department		Land for the proposed bio park is to be demarcated by the revenue authorities after necessary boundary survey and subsequent bio cover work are to be done				

				by the social forestry department		
5	Flood Prone Mapping in Kozhikode District	Irrigation department		Acton to be taken by the hydrology wing of irrigation department as this needs data collection, scientific analysis and modeling		

Kerala State Pollution Control Board

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of September 2020	Progress in the month of October 2020	Progress in the month of November 2020	% works completed	Details of works remaining
1	River water quality monitoring- Kallayi river National Water Quality Monitoring Programme(NWMP)	KSPCB	Ongoing; monthly frequency					
2	River water qualitymonitoring– Kallayi rivers State Water Monitoring Programme, KSPCB fund (SWMP)	KSPCB	Ongoing. Seasonal monitoring – pre-monsoon, monsoon, post-monsoon					
3	Inspection and effluent quality monitoring of the flats, industrial units, service stations, hospitals, hotels etc . in Malappuram Municipal area	KSPCB	Ongoing Interval: Red– 1month.					

			Orange – 3 months. Green – 6 months.					

	SuchitwaMission							
No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of September 2020	Progress in the month of October 2020	Progress in the month of November 2020	% works completed	Details of works remaining
1	Board displaying messages against dumping to be placed in river banks	Suchitwa Mission	15.07.19	Estimate prepared				

Action Plan by Ground WaterDepartmen

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of September 2020	Progress in the month of October 2020	Progress in the month of November 2020	% works completed	Details of works remaining
B(i)	Ground Water resources and regulation of ground water extraction by industries particularly in over expolited as critical zones/blocks (Earlier status: As per Groundwater resources of Kerala, 2017 estimate ,Kozhikkode Block comes under the Kallai river basin and the block is safe with stage of groundwater extraction 68.49%)	Ground Water Department		Nil	Nil	Nil		
B(ii)	Ground water recharging / rain water harvesting (Earlier status : The average pre-monsoon groundwater level is 7.23mbgl. Groundwater Department has implemented 3 no of dug well recharge schemes at Kozhikkode block)	Ground Water Department		Nil	Nil	Nil		

B(iii)	Periodic ground waste quality assessment and remedial actions in case of contaminated ground water tube wells/bore wells or hand pumps (Earlier status - Groundwater Department has 1 observation piezometer (BW)in the river stretch.)	Ground Water Department		Nil	Nil	Nil		
B(iv)	For regulating use of ground water for irrigation purpose, adopting good irrigation practices (Earlier status - The total irrigation draft in the block area is 488.76 ha.m.)	Ground Water Department		Nil	Nil	Nil		

Action plan by irrigationDepartment

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of September 2020	Progress in the month of October 2020	Progress in the month of November 2020	% works completed	Details of works remaining
E	Dredging and desilting	Irrigation Dept	3 years					
E	E-flow (by micro water shed management)	Irrigation Dept	3 years					
E	Flood plain zone (protection and management)	Irrigation Dept	3 years					
E	Greenery development (plant in trees on thebanks)	Irrigation Dept	3 years					

Kerala State Pollution Control Board, District Office, Kozhikode

NATIONAL MISSION FOR CLEAN GANGA

Format for submission of monthly progress report by state/UTs

(Hon'ble NGT in the matter of OA.No. 673/2018 dated 6/12/2018)

For the month of APRIL 2021– Kuttiady polluted river stretch

Sl No	Activity to be monitored	Timeline	Submission of progress by state/UT-complinace status
1	Ensure 100% treatement of sewage at least in-situ remediation		Nil
2	Commencement of setting up of STPs and other sources of generation of sewage to the STPs must be ensured		Nil
3	Timeline for completing all steps of action plans including completion of setting up STPs and their commissioning		Nil
4	Chief secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the secretary level • Chief secretaries may have an accountable person attached in their office for this purpose		Not applicable
	• Monitoring at state level must take place		Nil

5	Progress report may be furnished by the state/UTs to • Secretary,ministry of jal shakti • Member secretary,CPCB	Monthly (preferably before 20th of every month)	Nil
5.1	Progress report may be comprised of details along with completion timeline on: (i) identification of polluting source including drains contributing to river pollution and action as per NGT order on insitu treatment	Primary STP (Oil and Grease trap with grit chamber) Will be implemented by 31/3/2021	Drains identified. Pollution load calculated. Action plan prepared. Notices issued by concerned Panchayath Secretaries to individual units. Action under progress by individual units. Monthly progress report of Kuttiady, Maruthomkara, Cheruvannur, Changaroth,Perambra, Kavilumpara, Velom Panchayaths,Chakittapara, Payyoli, Thurayoor, Irrigation department, Water Authority, Shuchitwa mission for the month of October 2020 is attached as **Annexure 3.**
	(ii) status of STPs, I&D and sewage networks details of existing infrastructure,proposed along with completion timeline		Mostly rural area. No common STP proposed. Individual septic tank and soak pit system provided for house hold, units like bakery, cool bars small restaurants with less seating capacity. Individual STPs for high rise building, hotels, Restaurants, Commercial buildings.

	(iii) status of CETPs details of existing CETP and ETP infrastructure ,Gap analysis,proposed along with complying status	---	No CETPs proposed
	(iv) status of solid waste management & details of processing facilities details of existing infrastructure, Gap analysis,proposed along with completion timeline	31/03/2021 Completed and functioning Completed and functioning Completed and functioning 31/103/2021 31/10/2021 31/03/2021	**Kuttiyadi Panchayth** Construction started for block level MRF for 7 panchayath in the Kuttiyady block. MCF of Kuttiyadi Panchayath set up with shredding unit- work completed and functioning. Mini MCF set up in all wards of Kuttiyadi panchayath. **Kavilumpara panchayath** 3 MCFs are functioning. **Maruthomkara Panchayath** MRF completed and functioning. Biogas plant work completed. **Velom Panchayath** – Community level – Biogas plant.Work under construction(80% work completed). 50 nos of Biogas plant for house hold- Completed and functioning **Perambra Panchayath** MCF- Tendering in progress Mini MCF – work completed. **Changaroth Panchayath** Project for setting up MCF approved. Site to be identified soon. Biogas plant and Ring compost for house hold proposed. Plastic shredding unit

		Completed and functioning 31/03/2021	proposed. **<u>Chakkittapara Panchayath</u>** MCF-Completed **<u>Payyoli Municipality</u>** 2000units of ring compost,500units of biogas plant,5000units of bio bin-Work in progress
	(v) latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;		Water quality monitoring result for the month of October 2020 is attached as **Annexure-4**
	(vi) preventing dumping of waste and scientific waste management including bio-medical waste plastic waste and decentralizeing waste processing, including waste generated from hotels, ashrams,etc.		Same as Item no. 5.1(v) Biomedical waste from Hospital,labs ,clinics collected through image, plastic waste disposal through recyclers.Individual solid waste processing facilities like bio gas plant, bio bins in high rise building, hotels etc. Fencing proposed by irrigation department.
	(vii)ground water regulation		NIL
	(viii) adopting good irrigation practices		NIL
	(ix) protection and management of flood		

	plain zones(FPZ), (x) Rain water harvesting	Work in progress 31/03/2021	**Velom panchayath** 22527 rain water pit , well recharge – 1500 houses **Kavilumpara panchayath** well recharge – 160 houses **Maruhtonkara panchayath** Well recharge- Action plan and TS approved **Cheruvanoor panchayath** Well Recharge – Project in progress **Chakkittapara Panchayath** Well recharging through MGNREGS
	(xi) Maintaining minimum environmental flow of river		**Kavilumpara panchayath** Adopted steps to remove sands and rock dumped durig rain flood **Maruthonkara panchayah** 74 works ongoing under MGNREGS(RWH, soil conservation). **Kavilumpara panchayath** 5 works ongoing under MGNREGS for protection of river sides **Chakkittapara Panchayath** Removal of pebbles and renovation of Kuttiady river through MGNREGS **Payyoli Municipality** Rejuvation/cleaning of Naivarani thodu by removing slit and other solid wastes-Work in

	(xii) Plantation on both sides of the river (xiii) Setting up biodiversity parks on flood plains by removing encroachment		progress

(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

ACTION PLAN FOR RIVER KUTTIYADI, KERALA

	KuttyadiGrama Panchayath								
No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of JANUVARY 2020	Progress in the month of J FEBRUARY 2021	Progress in the month of MARCH 2021	Progress in the month of APRIL 2021	% works completed	Details of works remaining
D	Geo textiles at river bed	MGNREGS	31.03.2018	Nil	Nil	Nil	Nil	Nil	Na
E	Haritha sahayastapana agreement	Kuttyadi Grama Panchayath	31.03.2020	Completed	Completed	Completed	Completed	100%	Na
C(ii)	Removal of Non bio degradable waste	Kuttyadi Grama Panchayath	31.03.2020	Completed	Completed	Completed	Completed	100%	Na
C(ii)	Clean green kuttyadi	Kuttyadi Grama Panchayath	31.03.2020	96%	98%	99%	99%	99%	Plastic collection from home
A(b)	Community toilet	Suchitwa mission	31.03.2020	100%				100%	
C(ii)	MRF	Block panchayath	31.03.2020	Nil	Nil	Nil	Ni	Nil	
C(ii)	MCF	Kuttyadi Grama Panchayath	31.03.2019	100%				100%	
A(b)	Sanitary latrine	Kuttyadi Grama Panchayath	31.03.2019	Nil	Nil	Nil	50%	50%	50%
B(ii)	Well recharging	MGNREG	31.03.2019	Nil	Nil	Nil		Nil	Nil
E	Camera surveillance	Kuttyadi Grama	completed					100%	completed

		Panchayath							
E	Rejuvenation of Kuttiyadi river	MGNREGS	31.03.2020	Nil	Nil	Nil	50%	50%	
C(ii)	Disposal of non degradable bio waste	Kuttyadi Grama Panchayath	31.03.2020	97%	98%	99%	99%	99%	Collection for MCF
E	Clean Village	Kuttyadi Grama Panchayath	31.03.2020	Nil	95%	98%	98%	95%	
C(ii)	MRF	Block Panchayat	31.03.2020	Na	Na	Na	Na	Na	completed
C(ii)	MCF	Kuttyadi Grama Panchayath	31.03.2020	100%	100%	100%	100%	100%	
C(ii)	Retrofitting	Kuttyadi Grama Panchayath	31.03.2020	96%	97%	98%	99%	99%	
				Nil					

	VelamGramaPanchayath								
No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of Januvary 2021	Progress in the month of February 2021	Progress in the month of March 2021	Progress in the month of April 2021	% works completed	Details of works remaining
C(ii)	Govardhian Biogas plant	Velam GP	31.03.2020					40	Well, Road
C(ii)	MCF	Suchitwa mission	31.03.2020					90	Well, Water
C(ii)	Biogas plant 50 No.s	Suchitwa mission	31.03.2020						
B(ii)	Well recharge 1500 houses	MGNREGS	31.03.2020						Nil
C(ii)	Installation of Biogas plant for individual benefic iaries	Socio Economic unit Foundation	31.12.2019					6	0
C(ii)	Installation of Ring compost	Socio Economic unit Foundation	31.12.2019					11	0
C(ii)	Making compostpit	MGNREGS	31.0.2020	4	5				20

Maruthomkara GramaPanchayath

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of January 2021	Progress in the month of February 2021	Progress in the month of march 2021		Progress in the month of April 2021	% works completed	Details of works remaining
C(ii)	MRF	Block panchayath	2019-2020	Completed	Completed	Completed		Completed	100	Completed
C(ii)	Biogas plant	Maruthomkara GP	2019-2020	Completed	completed	Completed		Completed	100	Completed
B(ii)	Well recharge	Maruthomkara GP	2019-2020	Completed	completed	Completed		Completed	100%	160 Completed
A(b)	Sanitary complex	Maruthomkara GP	2019-2020	Completed	completed	Completed		Completed	100%	Concrete Completed
E	Haritha sahayathapana agreement	Maruthomkara GP	2019-2020	Completed	completed	Completed		Completed	100%	Completed
C(ii)	Biogas plant	Maruthomkara GP	31.03.2020							
A(b)	Sanitary Complex	Maruthomkara GP	31.03.2020							

	PerambraGrama Panchayat								
No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of January 2021	Progress in the month of February 2021	Progress in the month of March 2021	Progress in the month of April 2021	% works completed	Details of works remaining
E	Haritha sahayasthapana agreement	Perambra grama panchayath	31.03.2020	HSS identified	HSS identified	HSS identified	HSS identified		
C(ii)	Solid waste removal	Perambra grama panchayath	31.03.2020	Continued	Being continued	Being continued	Being continued	90%	Fortnight collection of non biodegradable waste from houses is being continued
	Zero waste Perambra	Perambra grama panchayath	31.03.2020	Completed	Completed	Completed	Completed	100%	
C(ii)									
A(b)	Publictoilet	Perambra grama panchayat	31.07.2019	Commissioned	Commissioned	Commissioned	Commissioned	100%	

	MCF	Perambra grama panchayat	31.10.2019	Commissioned	Commissioned	Commissioned	Commissioned	95%	Electrification tender
C(ii)									
C(ii)	Fish market construction	Perambra grama panchayat	31.10.2019	Finishing work	Finishing work	Finishing work	Finishing work	95%	Electrification tendered

Kavilumpara GramaPanchayath									
No.	Activity	Implementing agency	Time line	Progress in the month of January 2021	Progress in the month of February 2021	Progress in the month of March 2021	Progress in the month of April 2021	% works completed	Details of works remaining
(as per Action Plan)									
E	Haritha sahayasthapana agreement	Kavilumpara GP	31.03.2020	Completed	Completed	Completed	Completed	100% Completed	NA
	Collection of non-biodegradable waste	Kavilumpara GP	31.03.2020	1.5 ton	1.5 ton	1.5 ton	1.5 ton	60 % Completed	40 % work in progress
C(ii)									
	MCF	Kavilumpara GP	31.03.2020	Completed	Completed	Completed	Completed	100% Completed	NA
C(ii)									
	Well recharge	MGNREGS	31.03.2020	Work Started	Work Started	Work Started	Work Started	NIL	Work Started
B(ii)									
D	River cleaning	Kavilumpara GP	31.03.2020	Completed	Completed	Completed	Completed	100% Completed	NA

Chakkittapara Grama Panchayat

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of January 2021	Progress in the month of February 2021	Progress in the month of March2021	Progress in the month of March2021	% works completed	Details of works remaining
D	Removal of pebbles dumped if any	MGNREGS	31.03.2020	Nil	Nil	Nil	Nil		Nil
E	Harithasahayastapana agreement	ChakkittaparaGramaPanchayath	31.03.2020	Completed	Completed	Completed	Completed	100%	Nil
C(ii)	Removal of Non bio degradable waste	ChakkittaparaGramaPanchayath	31.03.2020	Completed	Completed	Completed	Completed	100%	Nil
A(b)	Community toilet	Suchitwa mission	31.03.2020					100%	Nil
C(ii)	MCF	ChakkittaparaGrama Panchayath	31.03.2020					100%	Nil
A(b)	Sanitary latrine	ChakkittaparaGrama Panchayath	31.03.2020	80%	85%	85.5%	85.5%	85.5%	
B(ii)	Well recharging	MGNREG	31.03.2020	35%	36%	36.4%	36.4%	36%	
E	Rejuvenation of Kuttiyadi Puzha	MGNREGS	31.03.2020	Nil	Nil	Nil	Nil	Nil	Nil
C(ii)	Disposal of non degradable bio waste	ChakkittaparaGrama Panchayath	31.03.2020	80%	81%	81.3%	81.3%	81.3%	Collection from

									MCF
E	Clean Village	ChakkittaparaGrama Panchayath	31.03.2020	25%	31%	31.2%	31.2%	31.2%	
C(ii)	MCF	ChakkittaparaGramaPanchayath	31.03.2020					100%	Nil

	CheruvannurGramaPanchayth								
No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of January 2021	Progress in the month of February 2021	Progress in the month of March 2021	Progress in the month of April 2021	% works completed	Details of works remaining
E	Haritha SahayaSthapana agreement	Cheruvannur GP	31.03.2020	Functioning properly	Functioning properly	Functioning properly	Functioning properly	100%	Na
	Collection of plastic waste	Cheruvannur GP	31.03.2019	Functioning properly	Functioning properly	Functioning properly	Functioning properly	N100 %	Na
C(ii)									

A(b)	Repairing of households toilets	Cheruvannur GP	31.03.2020	Na	NA	NA	NA	100%	Na
A(b)	Construction of Community toilet at Nirappam Stadium	Cheruvannur GP	31.03.2020	WORK PROGRESS	WORK PROGRESS	WORK PROGRESS	WORK PROGRESS	50%	Roof and finishing work
B(ii)	Well recharging	Grama panchayath & MGNREGS	31.03.2019	COMPLETED	COMPLETED	COMPLETED	COMPLETED	Na	Na
A(b)	Latrine Construction	Grama panchayath & MGNREGS	31.03.2019	NA	NA	NA	NA	100%	Na
new	Take a break toilet cum relaxation centre	Cheruvannur GP	31.03.2021	TS Accorded				0	Construction on work
new	Thumbur moozhi Aerobic bin compost	Cheruvannur GP	31.03.2021	TS Accorded				0	Construction on work

Koorachund Grama Panchayat

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of January 2021	Progress in the month of February 2021	Progress in the month of March 2021	Progress in the month of April 2021	% works completed	Details of works remaining
	Setting up of MCF	Koorachund GP	31/11/2020	Piller casted	Roof completed	completed	completed	80%	Ongoing
	Collection of non degradable waste	Koorachund GP harithakarma sena	Through out the year	Collected	collected	collected	collected	80%	Ongoing
	Transportation of waste material to clean kerala mission	clean kerala mission	Through out the year	Ongoing	ongoing	ongoing	ongoing	80%	Ongoing
896	Renewal/construction of public toilet	Koorachund GP MGNREGS	Through out the year	Pillar casted	Roof completed	ongoing	ongoing	100%	nil
859	Brook cleaning	Koorachund GP MGNREGS	07-01-2020	Ongoing	ongoing	ongoing	ongoing	75%	nil
1211	Setting up of mini MCF	Koorachund GP MGNREGS	Through out the year	Ongoing	ongoing	ongoing	ongoing	65%	Ongoing
199	Well recharge	Koorachund GP MGNREGS	Through out the year	Progress in the month of January 2021				65%	Ongoing

Thiruvallur Grama Panchayat

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of January 2021	Progress in the month of February 2021	Progress in the month of March 2021	Progress in the month of April 2021	% works completed	Details of works remaining
1	drainage cleaning	Thiruvallur GP	2020-21	Completed	Completed	Completed	Completed	100%	Nil
2	haritha sahaya sthabana agreement	Thiruvallur GP	2020-21	Completed	Completed	Completed	Completed	100%	Nil
3	Removal of non bio degradable waste	Thiruvallur GP	2020-21	Completed	Completed	Completed	Completed	100%	Nil
4	Community toilet	suchitwa mission	2020-21	nil	nil	nil	nil		Project will be prepared after election
5	MCF	Thiruvallur GP	2020-21	started	started	Not started	started		Due to social assault work temporarily stopped.MCF functioning in a rental building
6	non recyclable inorganic waste hand over to clean kerala company	Thiruvallur GP	2020-21	Nil	Nil	Negotiation completed agreement to be	Nil		Negot iation on progress

						executed with clean kerala company.			
7	Waste management project to veterinary hospital	Thiruvallur GP	2020-21	Nil	Nil	Annual plan for waste management exists.	Nil		Letter send to AE ,LSGD for preparing deep burial pit
8	Renovation of various canals	Thiruvallur GP	2020-21	completed	completed	Work progressing	completed	100%	Nil
9	Toilet to schools, anganvadies and bus stand	Thiruvallur GP	2020-21	Nil	Started	Toilet to schools completed toilet at bus stand to be started.	Started		Work completed up to lintel level bus stand building construction project started

Thurayur Grama Panchayat

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of January 2021	Progress in the month of February 2021	Progress in the month of March 2021	Progress in the month of April 2021	% works completed	Details of works remaining
	Removal of pebbles dumped if any			Nil	Nil	Nil	Nil	Nil	Nil
	Haritha sahaya sthabana agreement	Thurayur GP	31.03.2020	Completed	Completed	Completed	Completed	100%	Nil
	Removal of non bio degradable waste	Thurayur GP	31.03.2020	Completed	Completed	Completed	Completed		Nil
	Community toilet	SUCHITWA MISSION	31.03.2020	Nil	Nil	Nil	Nil	100%	DPC approved after technical sanction and tender is under process
	MCF	Thurayur GP	31.03.2020						basement completed
(b)	Sanitary latrine	Thurayur GP	31.03.2020	Nil	Nil	Nil	Nil	Nil	
Ii)	Well recharge	MGNREGS	31.03.2020	Nil	Nil	Nil	Nil	Nil	
	Rejuvation of kuttiadi river	MGNREGS	31.03.2020	Nil	Nil	Nil	Nil	Nil	

	Disposal of non degradable bio waste	Thurayur GP	31.03.2020	60%	70%	70%	70%	70%	Collection directly from houses
	Clean village	Thurayur GP	31.03.2020	Nil	Nil	Nil	Nil	Nil	
Ii)	MCF	Thurayur GP	31.03.2021					partial	Basement completed

	Maniyur Grama Panchayat								
No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of January 2021	Progress in the month of February 2021	Progress in the month of march 2021	Progress in the month of April 2021	% works completed	Details of works remaining
15	innovation of canals	MGNREGS	2020-21	15 Canals innovation completed	15 canals innovation completed	15 canals innovation completed	15 canals innovation completed	100%	Nil
68	innovation of streams	MGNREGS	2020-21	17 streams innovation completed	17 streams innovation completed	17 streams innovation completed	17 streams innovation completed	25%	51

2	innovation of streams	Maniyur GP	2020-21	2 streams innovation completed	2 streams innovation completed	2 streams innovation completed	2 streams innovation completed	100%	Nil
21	building up of mini MCF	MGNREGS	2020-21	Work of 6 mini MCF completed	Work of 7 mini MCF completed	Work of 9 mini MCF completed	Work of 9 mini MCF completed	43%	12
21 wards	collection of non bio degradable waste	Harithakarmasena Maniyur GP	2020-21	waste in five wards was removed in december month 2020	waste in five wards was removed in december month 2020	waste in 19th wards was removed in February month 2020	waste in 19th wards was removed in February month 2020	90%	Waste in 2 wards
	Well recharge	MGNREGS	2020-21					86%	1

	CHANGAROTH GRAMAPANCHAYATH								
No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of January 2021	Progress in the month of February 2021	Progress in the month of March 2021	Progress in the month of April 2021	% works completed	Details of works remaining
C(ii)	Setting up of MCF	Changaroth GP	Sep-19	Completed	Completed	Completed	Completed	Completed	Completed
C(ii)	Collection of non-biodegradable waste	Haritha karma sena	throughout the year	-	-	-	-	ongoing	ongoing
C(ii)	Bio gas plants for house hold	Changaroth GP	Nov-19	Completed	Completed	Completed	Completed	Completed	Completed
C(ii)	Ring compost unit	Changaroth GP	Dec-19	Completed	Completed	Completed	Completed	Completed	Completed
C(ii)	Plastic shredding unit	Changaroth GP	Mar-20	Dropped	Dropped	Dropped	Dropped	Dropped-	Dropped
A(b)	House hold sanitary units	Changaroth GP	Jan-20	Ongoing	Ongoing	Ongoing	Ongoing	ongoing	ongoing

C(ii)	Transportation of waste material to refinement unit	Changaroth GP	Sep-19	Completed	Completed	Completed	Completed	Completed	ongoing
C(ii)	Bamboo Cultivation river banks	MGNREGS	31.03.2020	No progress	No progress	No progress	No progress	Ongoing	Unavailability of bamboo plants

	PAYYOLI MUNCIPALITY								
No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of January 2021	Progress in the month of Februar 2021	Progress in the month of March 2021	Progress in the month of April 2021	% works completed	Details of works remaining
	Included in the water shed area based development master plan.A municipal level committee formed for monitoring	Payyolimunicipality,Irrigation department	31.12.2021	Preparing the estimate	Preparing the estimate	Preparing the estimate	Preparing the estimate	NA	Work in progress
	Establishment of 2000units of ring compost	Payyoli municipality	31.03.2021	NA	NA	NA	NA	NA	Work in progress
	Establishment of 500 units of bio gas plant	31.03.2021	NA	NA	NA	NA	NA	NA	Work in progress
	Establishment of 5000units of bio bin	Payyoli municipality	31.03.2021	NA	NA	NA	NA	NA	Work in progress

	A contract agreement has been signed between municipality and fresh cut organic pvtltd,arentering plant functioning at Ambayathode,Thamarassery for the scientific treatment of chicken stall waste generated	Fresh cut organic pvt ltd	04.09.2020	100% chicken waste collected	100% chicken waste collected	100% chicken waste collected	100% chicken waste collected	100%	Completed
	Implementation of green protocol	Payyoli municipality	30.06.2020	Completed	Completed	Completed	Completed	100%	Completed
	Rejuvation/cleaning of Naivaranithodu by removing slit and other solid wastes	Payyoli municipality	31.3.2021						Work in progress
	Collection of plastic/non bio degradable house hold waste	Harithakarmasena	Ongoing	Collection started in 13wards	Collection started in 13wards	Collection started in 13wards	Collection started in 13wards	25%	NA
	Action taken against littering in public places	Payyoli municipality	Continuing	20notice issued.Fined -Rs.30190/-	20notice issued.Fined -Rs.30190/-	20notice issued.Fined -Rs.30190/-	20notice issued.Fined -Rs.30190/-		NA

Irrigation Department

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of September 2020	Progress in the month of October 2020	Progress in the month of November 2020	% works completed	Details of works remaining
E	Salt water Extrusion - Construction of RCB upstream of Perincherikadavu across Kuttiady river (Gulikapuzha) in Kozhikode District	Irrigation Dept	July 31 2022					
C(ii)	Fencing the sides of Bridges to prevent dumping of wastes - 5 no's	Irrigation Dept	July 31 2022					

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

RIVER TIRUR, MALAPPURAM

S. No.	Activity to be monitored	Timeline	Submission of progress by state/UT-Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation		
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured		
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning		
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose.		
	• Monitoring at State level must take place		
6	Progress report may be furnished by the State/UTs to • Secretary, Ministry of Jal Shakti • Member Secretary,CPCB		

6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment. (II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infra structure, Gap Analysis, Proposed along with completion timeline (III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure,GapAnalysis, Proposed along with completion timeline, No. of industries and complying status		Last updated report submitted was on 13 April2021 (i)Identified 17 drains out of which 9 were additionally identified on 11.07.2019 (ii)Market – 45 KLD- Was working. Given direction for providing some corrective measures to increase the working efficiency of STP on 21.10.2020.Inspected and took sample as part of performance evaluation. During inspection STP was found non functional. Show cause notice issued on 27.04 .2021. (ii)Bus Stand -50 KLD –Conducted trial run on 20.10.2020. They had applied for the ICE in 2017, and the application was returned then for obtaining clarifications. The Municipality was given letter to apply and obtain ICO for the bus stand STP on 21.10.2020. Application not submitted till the date. Again Direction letter issued on 6.03.2021.Recently Show Cause Notice issued on 27.04.2021.copy of SCN enclosed for reference. (iii)NIL

	(iv) <u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline		(iv)De centralised treatment facilities, Disposal using sanitary landfills, composting operations, MRF, MCF etc.
	(v)Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;		(v)Attached as Annexure II-Analysis report during the month of April)
	(vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.		(vi)Actions are being initiated to prevent illegal waste dumping. BMW are being disposed scientifically through IMAGE. Municipality have MRF, MCF facilities
	(vii)Ground water regulation		NA
	(viii) Adopting good irrigation practices,		Complying
	(ix) Protection and management of food plain Zones (FPZ),		NA
	(x) Rain water harvesting,		Complying
	(xi)Maintaining minimum Environmental flow of river		Complying

	(xii) Plantation on both sides of the river (xiii) Setting up biodiversity parks on flood plains by removing encroachment		NA Encroachment survey progressing

ACTION PLAN FOR RIVER TIRUR, KERALA

1.	1.IRRIGATION DEPARTMENT							
No.	Activity	Implementing agency	Time line	Progress during month of February 2021	Progress during month of March 2021	Progress during month of April 2021	% works completed	Details of works remaining
1.1.1	Strengthening the right side bund of Tirur- Ponnani Puzha at Porur, ward no. I Tirur Municipality	Irrigation Department	6 Months				nil	These two works are combined and DPR for an amount Rs.23 Lakhs submitted for approval on22/11/2020 and price file(219/10970/1 A) submitted on 24.11.2019
1.1.2	Cleaning and development of old Ponnani thodu at Thazhepalam	Irrigation Department	6 Months				nil	
1.1.3	Repair and Rehabilitation of Koottayi Regulator cum Bridge across Tirur Ponnani Puzha in Mangalam GramaPanchayath in Malappuram Dist	Irrigation Department	18 Months				nil	This work is arranged under Rebuild Kerala Initiative (RKI) and in tender process
1.1.4	Pollution abatement of rivers of the state-preparation of DPR by engaging two Engineering colleges	Jointly by department and Engineering college	February 2021			Sample collected analyzed	100%	DPR prepared and submitted

2.TIRUR MUNICIPALITY

No.	Activity	Implementing agency	Time line	Progress during month of February 2021	Progress during month of March2021	Progress during month of April2021	% works completed	Details of works remaining
2.1	Provide septic tank for nearest houses	Tirur Municipality	Dec 2019	completed	completed	completed	completed	NIL
2.2	Establishment of Solid waste Treatment Plant Thumboor Muzhi Model Aerobic Bin	Tirur Municipality	March 2020	completed	completed	completed	completed	NIL
2.3	Establishment of Non Degradable waste treatment Plant, Resource Recovery facility, Plastic Shredding Unit Segregation shed	Tirur Municipality	March 2020	completed	Completed	Completed	completed	NIL
2.4	Slaughtering House	Tirur Municipality	December 2020	Work stopped temporarily due to survey	Civil works have completed. Technical Sanction from Suchitwa Mission approved and on this basis Tender given for mechanical works	Technical Sanction for Electrification applied for. Besides this a proposal for ETP and biogas plant associated with the slaughter house also submitted before Suchitwa mission.	50%	50%
2.5	Fencing on Bridgeside ThalakkadathurBridge	Tirur Municipality	December 2020	completed	completed	completed	completed	NIL

2.6	Installation of CCTV Camera near the river Bank Thalakadathur Bridge	Tirur Municipality	May 2020	Completed	completed	completed	completed	NIL
2.7	Planting of Bamboo seedlings on the river bank (Thazhepalam)	Tirur Municipality	June 2020	Completed	completed	completed	completed	NIL
2.8	Renovation of Effluent treatment plant at fish Market. AMC Granted ETP with Aerobic System	Tirur Municipality	June 2019	completed	completed	completed	completed	Under complaint. Notice issued
2.9	Setting up of STP at Private Bus stand	Tirur Municipality	June 2020	completed	completed	completed	Temporary electrification given and conducted trial run.	Electrification pending. Change of some mechanical parts required Complete with in May last week
2.10	Setting up of a new drain after demolishing the old one. The old one was the hub of the waste water outlet of the shops and other establishments. The proposed drain is constructing in the middle of the road so as to avoid intrusion of pipes from outside	Tirur Municipality	June 2020	Completed	Completed	Completed	Completed	Completed
2.11	Identification of illegal outlets in to storm water drain sand fine shall be imposed on such units	Tirur Municipality					Fine imposing mechanism going on	

	3.KERALA STATE POLLUTION CONTROL BOARD							
No.	Activity	Implementing agency	Time line	Progress in the month of February2021	Progress in the month of March2021	Progress in the month of April2021	% works completed	Details of works remaining
3.1	River water quality Monitoring-Thalakadathur National Water Quality Programme(NWMP)	KSPCB	Ongoing; Monthly frequency			Ongoing monthly frequency		
3.2	River water quality Monitoring State Water monitoring programme (SWMP)	KSPCB	Ongoing; Seasonal			Ongoing seasonal		
3.3	Inspection and effluent quality monitoring of the flats, Industrial units, Service stations, hospitals, auditorium, hotels in Municipal area		Ongoing; Interval; Red – 1 month, Orange- 3 months, Green- 6 months			Ongoing		
	4. ACTION PLAN BY VARIOUS GRAMA PANCHAYATHS- THALAKKAD, VETTOM, MANGALAM, CHERIYAMUNDAM							
No.	Activity	Implementing agency	Time line	Progress in the month of February 2021	Progress in the month of March2021	Progress in the month of April2021	% works completed	Details of works remaining

4.1	Protection of Tirur Ponnani River	Thalakkad Grama Panchayath handover fund to District Panchayath	31.03.2020	May be submitted for tendering	May be submitted for tendering	May be submitted for tendering		NIL
4.2	Installation of CC TV camera on YetterikadavuKunjulikkadavuMangattiri Bridge, Aikkanchiri Bridge, Paravanna Bridge	Vettom - KS SECURITY SYSTEM	Spill over due to lack of fund	completed	completed	completed	completed	NIL
4.3	Installation of CC TV camera	Mangalam Grama Panchayath Win Plus Agency, Kondotty	Completed	In progress	In progress	completed	completed	NIL
4.4	Haritha KeralamThirur-Ponnanipuzha protection	Mangalam Grama Panchayath Nirmithi Kendra, Kozhikode	31.03.2020	completed	completed	completed	completed	NIL
4.5	Fencing on bridge side Thalakadathur	Cheriyamundam Grama Panchayath	March 2020	completed	completed	completed	completed	NIL
	5.GROUND WATER DEPARTMENT							
No.	Activity	Implementing agency	Time line	Progress in the month of February2021	Progress in the month of March2021	Progress in the month of April2021	% works completed	Details of works remaining
5.1.	Ground Water resources and regulation of ground water extraction by industries particularly in over exploited as critical zones/blocks (Earlier status: As per Groundwater resources of Kerala, 2017 estimate a total number of 2 blocks (Tirur and Kuttippuram) comes under the	Ground water Department		**No action included in the approved action plan to be performed by Ground Water**	**No action included in the approved action plan to be performed by Ground Water**			

	Tirur river basin. These two blocks are semi-critical blocks and the stage of groundwater extraction ranges from 77.75 % to 77.92%)							
5.2	Ground water recharging / rain water harvesting (Earlier status : The average pre - monsoon groundwater level ranges from 6.14mbgl - 8.49 mbgl.)			**No action included in the approved action plan to be performed by Ground Water**	**No action included in the approved action plan to be performed by Ground Water**			
5.3	Periodic ground waste quality assessment and remedial actions in case of contaminated ground water tube wells/bore wells or handpumps (Earlier status : No observation well along the river stretches)				**No action included in the approved action plan to be performed by Ground Water**	**to be performed by Ground Water**		
5.4	For regulating use of ground water for irrigation purpose, adopting good irrigation practices (Earlier status : The total irrigation draft in the area ranges from 49.14 - 870.97 ha.m.)				**No action included in the approved action plan to be performed by Ground Water**			

6.REVENUE DEPARTMENT

6.1	Survey of boundaries of river side	Revenue department		Vettom Panchayath Survey completed .	Survey in Tirur Municipality region started. Tirur Municipality have submitted fund for surveying	Survey in Tirur Municipality region progressing surveying.		

				Cheriyamundam, Mangalam have submitted amount for survey. Account details are given to Purathur Panchayath. The amount will be transferred to the account of Survey Superidentant for further actions		Purathur Panchayath submitted amount on 10.03.2021 survey to be started	10%	

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

RIVER KADALUNDI, MALAPPURAM

S. No.	Activity to be monitored	Timeline	Submission of progress by state/UT-Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation		
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured		
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning		
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose.		
	• Monitoring at State level must take place		
6	Progress report may be furnished by the State/UTs to • Secretary,Ministry of Jal Shakti • Member Secretary,CPCB		

6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment. (II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline (III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure,Gap Analysis, Proposed along with completion timeline, No. of industries and complying status (iv) <u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline (v)Latest water quality ofpolluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;		Last updated report submitted was on April 13 2021 (i)Identified 3 drains on 10.12.2018 (ii)Malappuram municipality – 30 KLD finished and was operational early. It is not operating properly due to absence of oil trap. Project submitted for approval for construction of oil trap and revamping STP (No further progress reported). Directed letter issued on08.03.2021 to the municipality. Not applied yet for consent. Did not attended DLTC meeting. (iii)Nil (iv)Disposal using sanitary landfills, composting, MRF, MCF etc (v)Attached Analysis Report for the month of April 2021.

	(vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.		(vi)Actions are being initiated to prevent illegal waste dumping. BMW are being disposed scientifically through IMAGE. Municipality have MRF, MCF facilities
	(vii)Ground water regulation		(vi)NA
	(viii) Adopting good irrigation practices,		Complying
	(ix) Protection and management of food plain Zones (FPZ),		NA
	(x) Rain water harvesting,		Complying
	(xi)Maintaining minimum Environmental flow of river		Complying
	(xii) Plantation on both sides of the river		NA
	(xiii) Setting up biodiversity parks on flood plains by removing encroachment		NA

ACTION PLAN FOR RIVER KADALUNDI, MALAPPURAM, KERALA

1.	MALAPPURAM MUNICIPALITY-SHORT TERM SOLID & LIQUID WASTE MANAGEMENT ACTION PLAN							
No.	Activity	Implementing agency	Time line	Progress in the month of February2021	Progress in the month of March2021	Progress in the month of April2021	% works completed	Details of works remaining
1.1	Slaughter house and Poultry house	Malappuram Municipality	July 2010	Date shall be extended to March 2021	Date shall be extended to March 2021	Date shall be extended to March 2021	On progress	On progress
1.2	Valiyathodu Cleaning - 8 Km length	Malappuram Municipality	completed	completed	completed	completed	completed	Nil
1.3	Installation of screening net in the Valiyathodu	Malappuram Municipality	completed	completed	completed	completed	completed	Nil
1.4	Identification of polluting points in Kadalundi river & awareness campaign - River walk(puzhanadatham – 15 km length)	Malappuram Municipality	completed	completed	completed	completed	completed	Nil

1.5	Sanitation facility and treatment of waste water in the markets - Treatment plant	Malappuram Municipality	completed	completed	completed	completed	completed	Nil
1.6	The discharge of waste water from the surrounding houses to the Valiyathodu - Blocking of discharge of liquid waste	Malappuram Municipality	completed	completed	completed	completed	completed	Nil
1.7	Identification of illegal outlets into storm water drains and fine imposed on such units.	Malappuram Municipality	ongoing	completed	completed	completed	completed	Nil
1.8	Biodegradable waste Bio bins – 176 Bucket compost – 269 Thumboormuzhi Aerobic bins - 4 Biogas plant -55	Malappuram Municipality	 March 2020 March 2020 March 2020 March 2020	On progress	On progress	On progress	On progress	On progress
1.9	Non biodegradable waste MCF Plastic shredding and Bailing Echo Kiosk	Malappuram Municipality	 Completed March 2020	Completed Shall be extended to march 2021	Completed Shall be extended to march 2021	Completed On progress	Completed On progress	Completed On progress

1.10	Identification and monitoring of illegal activities CC TV Network installation	Malappuram Municipality	March 2020	Shall be extended to march2021	Shall be extended to march 2021	On progress	On progress	On progress

2.KERALA STATE POLLUTION CONTROL BOARD

No.	Activity	Implementing agency	Time line	Progress in the month of February 2021	Progress in the month of March 2021	Progress in the month of April 2021	% works completed	Details of works remaining
2.1	River water quality Monitoring- Thirurangadi, Hajiyarpally National Water Quality Programme(NWMP)	KSPCB	Ongoing; Monthly frequency			100%		
2.2	River water quality Monitoring - Thirurangadi, Kooriyad, Manikut, Hajiyarpally, Anakkayam, Oravambrum - State Water	KSPCB	Ongoing; Seasonal - Pre - monsoon, monsoon, post - monsoon			100%		

	monitoring programme (SWMP)							
2.3	Inspection and effluent quality monitoring of the flats, industrial units, service stations, hospitals, hotels etc. in Malappuram Municipalarea	KSPCB	Ongoing; Interval; Red – 1 month, Orange- 3 months, Green- 6 months			100%		
	3.GROUND WATER DEPARTMENT							
No.	Activity	Implementing agency	Time line	Progress in the month of February2021	Progress in the month of March 2021	Progress in the month of April 2021	% works completed	Details of works remaining
3.1.	Ground Water resources and regulation of ground water extraction by industries particularly in over exploited as critical zones/blocks (Earlier status : As per Groundwater	Ground water Department				**No action included in the approved action plan to be performed by Ground Water Department**		

	resources of Kerala, 2017 estimate a total number of 3 blocks (Mankada, Vengara and Malappuram) comes under the Kadalundi river basin. Out of three blocks Malappuram and Vengara are semi-critical blocks and the rest is a safe one, stage of groundwater extraction ranges from 69.43 % to 79.84%)							
3.2	Ground water recharging / rain water harvesting (Earlier status : The average pre - monsoon groundwater level ranges from 7.59mbgl - 13.57 mbgl. Groundwater Department has implemented 3 no of roof top rain water	Ground water Department				**No action included in the approved action plan to be performed by Ground Water Department**		

	recharging through recharge pit schemes in Vengarablock.)							
3.3	Periodic ground waste quality assessment and remedial actions in case of contaminated ground water tube wells/bore wells or handpumps (Earlier status : Groundwater Department has 6 observation dug wells and 14 bore wells in the river stretch. (report attached) (Map No: 7 attached))	Ground water Department				**No action included in the approved action plan to be performed by Ground Water Department**		
3.4	For regulating use of ground water for irrigation purpose, adopting good irrigation practices (Earlier status : The total irrigation draft in the area ranges from 979.683 - 1857.49 ha.m.)	Ground water Department				**No action included in the approved action plan to be performed by Ground Water Department**		

ANALYSIS REPORT OF POLLUTED STRETCH POINTS IN TIRUR RIVER –APRIL 2021

o	Name of point	PARAMETERS				
		P^H	DO(mg/l)	BOD(mg/l)	COD(mg/l)	FC(cfu/100ml)
	Drain near Tirur Railway station	Dried				
	Thazhepalam drain	7.2	3.1	1.8	6.2	63
	Naduvilangadi drain (old ponnani thodu)	7.2	5.3	1.2	4.8	72
	Annassery drain	Dried				
	Canal at CV Land	Dried				
	Canal at Mangalam thuruth	Dried				
	Canal at Pullooni	7.9	2.8	2.7	8.2	62
	Drain near Mangattiri bridge	6.5	2.8	1.1	6	45
	Drain near Ettirikkadavu bridge	6.9	2.4	0.7	5	34
0	Epothingal	Dried				
1	Asarikkadav	7.8	5	2.6	8.4	90
2	Kandanath kadav	6.5	2.0	1.8	7.2	60
3	Pancharamoola	Dried				
4	Kakadav	6.7	2.5	1.4	5.6	62
5	Kanathkadav	6.5	1.3	1.1	4.4	95
6	Drain near tirur railway station	Dried				
7	Payyanangadi(kadayithodu)	Dried				

ANALYSIS REPORT OF POLLUTED STRETCH POINTS IN KADALUNDY RIVER –APRIL 2021 ALONG HAJIYARPALLY

Sl .No	Name of point	PARAMETERS				
		pH	DO (mg/l)	BOD(mg/l)	COD(mg/l)	FC (cfu/100ml)
1	Valiyangadi drain	7.8	2.1	1.0	4	79
2	Valiyangadi bypass drain	Dried				
3	Valiyathod drain	Dried				
4	Hajiyarpally	7.6	8.2	2.5	10	64

National Mission for Clean Ganga

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(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)
RIVER KUPPAM, KANNUR

S. No.	Activity to be monitored	Timeline	Submission of progress by State/UT- Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation		
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured		
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning		
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose		
	• Monitoring at State level must take place		
6	Progress report may be furnished by the State/UTs to • Secretary, Ministry of Jal Shakti • Member Secretary, CPCB		
6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT		

	order on in-situ treatment. (II) Status of STPs, I&D and sewerage networks Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (III) Status of CETPs Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status (iv)Status of Solid Waste Management & Details of Processing Facilities Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river; (vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc. (vii)Ground water regulation (viii) Adopting good irrigation practices		

	(ix) Protection and management of food plain Zones (FPZ) (x) Rain water harvesting (xi)Maintaining minimum Environmental flow of river (xii) Plantation on both sides of the river (xiii)Setting up biodiversity parks on flood plains by removing encroachment			

ACTION PLAN FOR RIVER KUPPAM, KERALA

Ref para no:48 as per NGT order 673/2018 dated:20.09.2018	Activity	Implementing Agency	Time of Completion	Progress in the month of February 2021	Progress in the month of March 2021	Progress in the month April of 2021	% works completed
	Udayagiri GP						
A (b)	Sanitation Facility	Udaya giri GP	03/2020				
C (ii)	Biodegradable waste disposal	Udaya giri GP	Ongoing project				
C (ii)	Non bio degradable Waste Disposal	Clean kerala Company	Ongoing project				
E	Awareness	Youth, Asha workers and other stake holders	Ongoing project				

	Chapparappadavu GP							
A (b)	Sanitation Facility	Chapparappadavu GP	06/2019					
C (ii)	Biodegradable waste disposal	Ward Sanitation Committee of Local Body	12/2019					
C (ii)	Non bio degradable Waste Disposal	Local body (Haritha Karma Sena)	03/2020					
E	Awareness	Youth, Asha workers and other stake holders	03/2020 (Will extend if necessary)					
	Pariyaram Panchayat							
A (b)	Sanitation Facility	Pariyaram Panchayat	03/2020		Completed			
C (ii)	Biodegradable waste disposal		03/2022		Ring compost - 550, pipe compost - 2500/- Bakashi - 10, Bio bin - 92, dung pit - 207 Toilet - 73, sock pit - 296, Biogass plant - 3, portable biogass - 33, Total - 3764			
C (ii)	Non bio degradable Waste Disposal	Pariyaram Panchayat	On going project		On going		2 Ton handed over to Clean Kerala Company and 2 ton ready to hand over.	
E	Awareness	Youth, Asha workers and other stake holders	Whenever necessary		On going			
A (b)	Identific ation of illegal outlets in to drains and stoppage of the same	Pariyaram Panchayat	09/2019		Completed			

PARIYARAM GRAMA PANCHAYATH
C POYIL P.O.
Mob: 9496089042

	Madayi GP							
A (b)	Sanitation Facility	Local Body	2022					
C (ii)	Biodegradable waste disposal	Ward Sanitation Committee of Local body	Bio bins, pit compost -2022 Thumpoormuzhi = 2020					
C (ii)	Non bio degradable Waste Disposal	Haritha Karma sena	On going project					
E	Awareness	Youth, Asha workers and other stake holders	On going project					
A (b)	Identification of illegal outlets in to drains and stoppage of the same	Local Body	2022					
	Thalipparamba Municipality							
A (b)	Sanitation Facility	Municipality						
C (ii)	Biodegradable waste disposal							
C (ii)	Non bio degradable Waste Disposal	Haritha Karma sena						
E	Awareness	Youth, Asha workers and other stake holders	Once in a month					
	Pattuvam GP							

E	Awareness	Youth, Asha workers and other stake holders	Whenever necessary					
C (ii)	Remova l of plastic wastes from the river bank							

Action Plan by Irrigation Department

Sl no	Activity	Implementing Agency	Time for completion	Progress in the month of February 2021	Progress in the month of March 2021	Progress in the month April of 2021	% works completed	Details of works remaining
1	Providing fencing on Kuppam bridge (NH) across Kuppam river at Thalipparamba in Thalipparamba Municipality	Irrigation department	2021					
2	Providing Fencing on Pazhayangadi Bridge across Kuppam River at Pazhayangadi	Irrigation Department	2021					
3	Regualting activites in flood plain zone, protection and management of flood plain zone	Irrigation Department	3 years					
4	Greenery development- Plantation plan. Plantation on both sides of the river, setting up biodiversity parks on flood plains by removing encroachment	Irrigation Department	3 years					

5	Issues relating to E- flow, maintaining minimum environmental flow of river(by having watershed management provisions)	Irrigation Department	3 years					

Combined Action Plan

	Proposed action	Agency	Timeline	Progress in the month of February 2021	Progress in the month of March 2021	Progress in the month April of 2021	% works completed	Details of works remaining
1	Provide toilets to residences with treatment and disposal system for sewage and sullage	Local Body						
2	Construction of new community toilets with treatment system	All local bodies Suchitwa Mission, Revenue department	Proposed Construction Of new community Toilet at satellite points on the bank of river					
3	Entry of rain water and rain water recharging to all channels and drain	All local bodies , Kerala Water Authority	Drains are inspected before rain and all channels and stream are cleaned once in a year					
4	Sanitary facility in hotels (around 7) one hospital, Establishments situated in the ward for the segregation, treatment and disposal of solid wastes as per SolidWastesManagementRules, 2016	Pollution Control Board , Health department	Check they have board consent and sanitation facility is provided					
5	Adequate number of kitchen bins shall beprovided	Municipalities and local bodies	One project year					
6	Providing proper waste handling facility. For wastewater and solid wastes	Local body	One project year					

7	Rendering plant for poultry wastes	Local body	As per their project and fund availability					
8	Slaughter house waste disposal facility	Local body	One common slaughter house for 3 to 4 local body					
9	Strict monitoring of disposal of waste(sewage, sullage, degradable waste, non-biodegradable waste) surveyed area and also in the catchment of theriver i)Verify Whether consent to operate of the Board exists	Pollution Control Board	Six months					
10	Sanitation survey is to be conducted for 100m on either sides of the other parts of polluted stretch if any located nearby	Pollution Control Board	Six months					
11	Awareness for residence association:	Suchitwamission/LSGD/Corporation	Once in a month					

Action Plan by Ground Water Department

Sl.No	Ref para no:48 as per NGT order 673/2018 dated:20.09.2018	Activity	Progress in the month of February 2021	Progress in the month of March 2021	Progress in the month April of 2021	% works completed	Details of works remaining
1	B(i)	Ground Water resources and regulation of ground water extraction by industries particularly in over expolited as critical zones/blocks					
2	B(ii)	Ground water recharging / rain water harvesting					

3	B(iii)	Periodic ground waste quality assessment and remedial actions in case of con taminated ground water tube wells/bore wells or hand pumps					
4	B(iv)	For regulating use of ground water for irrigation purpose, adopting good irrigation practices					

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

RIVER MOGRAL, KASARGOD

S. No.	Activity to be monitored	Timeline	Submission of progress by State/UT- Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation		
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured		
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning		
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose		
	• Monitoring at State level must take place		
6	Progress report may be furnished by the State/UTs to • Secretary,Ministry of Jal Shakti • Member Secretary,CPCB		

6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment. (II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline (III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure,Gap Analysis, Proposed along with completion timeline, No. of industries and complying status (iv)<u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline (v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river; (vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including		

	waste generated from hotels, Ashrams, etc. (vii)Ground water regulation (viii) Adopting good irrigation practices (ix) Protection and management of food plain Zones (FPZ) (x) Rain water harvesting (xi)Maintaining minimum Environmental flow of river (xii) Plantation on both sides of the river (xiii)Setting up biodiversity parks on flood plains by removing encroachment		

ACTION PLAN FOR RIVER MOGRAL, KASARAGOD DISTRICT, KERALA
MONTHLY PROGRESS REPORT FOR THE MONTH OF MARCH 2021
RIVER MOGRAL, KASARGOD

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of November 2020	Progress in the month of December 2020	Progress in the month of January 2021	Progress in the month of February 2021	Progress in the month of March 2021	Progress in the month of April 2021	% works completed	Details of works remaining
C	Material collection facility	Mogral Puthur Grama Panchayath	March 2020	Completed.	Completed.	Completed.	completed	completed	completed	100 %	NA
C	Waste collection including vehicle hire charge to collect waste.	Mogral Puthur Grama Panchayath	March 2020	Not started	Not started	Not started	Not started	NIL	NIL	0 %	
E	Installation of camera	Mogral Puthur Grama Panchayath	June 2020	Ongoing	Ongoing	Not completed	Ongoing	Ongoing	Ongoing	0%	
A (b)	Drainage Cleaning at Ballor, Kottakkunnu, Majal, Neerchal, Blarkode, Goovathadka, Pernadka,	Mogral Puthur Grama Panchayath	2019	Completed	Completed	Completed	Completed	Completed	Completed	100 %	NA

	Shankra, Eriyal,KK Puram Arjal Vishnu Temple										
C(ii)	Haritha Karmasena Activity/ Collecting Non Bio degradable materials including Plastics from households	Mogral Puthur Grama Panchayath	On-going	Conducted training and started collection of plastics from households and temporarily stored in a shed.	NIL	NIL	Started	Started	Started	75%	
C(iii)	Bamboo Capital Bamboo Planting - aiming water conservation and raising water levels thus preventing solid erosion, waste dumping in publicplaces	Mogral Puthur Grama Panchayath	On-going	Completed	Completed	Completed	Completed	Completed	Completed	100 %	NA

E	River cleaning	Mogral Puthur Grama Panchayath	2019	Completed	Completed	Completed	Completed	Completed	Completed	100 %	NA
C(iii)	Bamboo Plantation of Madhur	Madhur grama Panchayath	2019	Report not provided	Report not provided	Not completed	18500 being maintained by NREGA	18500 being maintained by NREGA	18500 being maintained by NREGA	100 %	NIL
C(ii)	Viability Gap Funding for Haritha Karmasena	Madhur grama Panchayath	2019	Total amount Rs.1,00,000/- expenditure Rs.25300/	Total amount Rs.1,00,000/- expenditure Rs.25300/	Total amount Rs.1,00,000/- expenditure Rs.25300/	Total Amount Rs1,00,000/- Expenditure RS25300	Total Amount Rs1,00,000/- Expenditure RS25300	Total Amount Rs1,00,000/- Expenditure RS25300	25%	NIL
C(ii)	Material recovery facility centre	Madhur grama Panchayath	2019	Completed	Completed	Completed	Completed	Completed	Completed	100%	Completed
C(ii)	Construction of Plastic Shredding Machine building	Madhur grama Panchayath	2019	Completed	Completed	Completed	Completed	Completed	Completed	100 %	Completed
C(ii)	Purchase of Plastic shredding machine	Madhur grama Panchayath	2019	Yet to float tender	Yet to float tender	Yet to float tender	Project No 234 Amount Rs 6,00,000/- yet to tender	Project No 234 Amount Rs 6,00,000/- yet to tender	Project No 234 Amount Rs 6,00,000/- yet to tender	-	Yet to float tender
C	Tying of net on both sides of the bridge	Irrigation Department	2019-2020	Estimate for fencing work on both sides of	DPR submitted to Chief Engineer, I	DPR submitted to Chief Engineer, I & A (PRICE ID:	DPR submitted to Chief Engineer, I	DPR submitted to Chief Engineer	DPR submitted to Chief Engineer	-	Work still under process.

				Mogral NH Bridge at Kadavath proposed for Rs.32.00 lakhs. Estimate submitted to Chief Engineer through PRICE ID: 2019/10715/IA dated 15.11.2019 for approval	& A (PRICE ID: 2019/10715 /IA) for approval	2019/10715/I A) for approval	& A (PRICE ID: 2019/107 15/IA) for approval	(Price ID: 2019/107 15/IA) for approval.	(Price ID: 2019/107 15/IA) for approval.		
A(a)	Water quality monitoring	KSPCB	Being done regularly		Water quality is being monitored by KSPCB, Kasaragod regularly.						

Sd/-

Environmental Engineer

MOGRAL RIVER - MOGRAL BRIDGE (Existing NWMP Station)			
Sampling Point			Mogral Bridge
NWMP Station Code			2304
Latitude			12˚33'36.5"N
Longitude			74˚57'21.0"E
Date of Sampling			23.04.2021
Nature and flow of the river			Medium flow, water level decreased
Sl.No	Parameters	Unit	Mogral Bridge
1	Temperature	˚C	28
2	pH	-	7.52
3	Conductivity	µmhos/cm	54800
4	Turbidity	NTU	3.4
5	BOD	mg/l	1.74
6	Dissolved Oxygen	mg/l	5.2
7	Total Coliforms	cfu/100ml	360
8	Feacal Coliforms	cfu/100ml	112
9	Feacal Streptococcus	cfu/100ml	30
10	Chlorides	mg/l	20200
11	Total Alkalinity	mg/l	125
12	Total Hardness	mg/l	7000
13	Calcium Hardness	mg/l	6200
14	Magnesium Hardness	mg/l	800
15	Calcium	mg/l	2480
16	Magnesium	mg/l	194.4
17	Total Dissolved Solids	mg/l	34500
18	Sodium	mg/l	10450
19	Potassium	mg/l	274

MOGRAL RIVER - PUZHAKKARA (Proposed NWMP Station)			
Sampling Point			Puzhakkara
Distance from existing NWMP Station			3.25 km
Latitude			12˚33'58.1"N
Longitude			74˚58'43.7"E
Date of Sampling			23.04.2021
Nature and flow of the river			Water level decreased, medium flow
Sl.No	Parameters	Unit	Puzhakkara
1	Temperature	˚C	28
2	pH	-	7.88
3	Conductivity	µmhos/cm	13720
4	Turbidity	NTU	1.1
5	BOD	mg/l	0.73
6	Dissolved Oxygen	mg/l	4.8
7	Total Coliforms	cfu/100ml	260
8	Feacal Coliforms	cfu/100ml	52
9	Feacal Streptococcus	cfu/100ml	10
10	Chlorides	mg/l	4300
11	Total Alkalinity	mg/l	84
12	Total Hardness	mg/l	2200
13	Calcium Hardness	mg/l	1500
14	Magnesium Hardness	mg/l	700
15	Calcium	mg/l	600
16	Magnesium	mg/l	170.1
17	Total Dissolved Solids	mg/l	8000
18	Sodium	mg/l	2250
19	Potassium	mg/l	88

Sd/-
Assistant Scientist

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

RIVER UPPALA, KASARGOD

S. No.	Activity to be monitored	Timeline	Submission of progress by State/UT- Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation		
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured		
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning		
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose		
	• Monitoring at State level must take place		
6	Progress report may be furnished by the State/UTs to • Secretary,Ministry of Jal Shakti • Member Secretary,CPCB		

6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment. (II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline (III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure,Gap Analysis, Proposed along with completion timeline, No. of industries and complying status (iv)<u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline (v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river; (vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic		

	waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc. (vii)Ground water regulation (viii) Adopting good irrigation practices (ix) Protection and management of food plain Zones (FPZ) (x) Rain water harvesting (xi)Maintaining minimum Environmental flow of river (xii) Plantation on both sides of the river (xiii)Setting up biodiversity parks on flood plains by removing encroachment		

ACTION PLAN FOR RIVER UPPALA, KASARAGOD DISTRICT, KERALA
MONTHLY PROGRESS REPORT FOR THE MONTH OF MARCH 2021
RIVER UPPALA, KASARGOD

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of November 2020	Progress in the month of December 2020	Progress in the month of January 2021	Progress in the month of February 2021	Progress in the month of March 2021	Progress in the month of April 2021	% works completed	Details of works remaining
C(ii)	Material collection facility. Operation	Mangalpady Grama Panchayath	2019	Report not submitted	Activity continuing	Activity continuing	Activity continuing	Activity continuing	Activity continuing	100%	Completed
C	Waste management including purchase of vehicle to collect waste.	Mangalpady Grama Panchayath/ Green Space Private company	2019-2020	Report not submitted	Work being carried out regularly	Work being carried out regularly	Work being carried out regularly	Work being carried out regularly	Work being carried out regularly	-	Approval for purchase of vehicle not sanctioned from Government.
E	Installation of camera	Mangalpady Grama Panchayath	March 2020		Project dropped						
C	Electrification of material collection facility	Manjeshwaram Grama Panchayat	2019-2020	Completed in November 2019 and MCF inaugurated on 16.09.2020	Completed in November 2019 and MCF inaugurated on 16.09.2020	Completed in November 2019 and MCF inaugurated on 16.09.2020	Completed in November 2019 and MCF inaugurated on 16.09.2020	Completed in November 2019 and MCF inaugurated on 16.09.2020	Completed in November 2019 and MCF inaugurated on 16.09.2020	100 %	Completed

C	Transportation of collected waste	Manjeshwaram Grama Panchayat	March 2020	995m3 Waste collected from various public places and River sides and transported to Disposal center in March and 338m3 Waste collected in June 2020. Waste is being collected from Manjeshwaram near Railway Station, Manjeshwaram Town near Surumathodu, Hosangadi town, NH 66 near checkpost, Mada, Karoda, Kunjathur, Thumminadu, 10th mile.	995m3 Waste collected from various public places and River sides and transported to Disposal center in March and 338m3 Waste collected in June 2020. Waste is being collected from Manjeshwaram near Railway Station, Manjeshwaram Town near Surumathodu, Hosangadi town, NH 66 near checkpost, Mada, Karoda, Kunjathur, Thumminadu	995m3 Waste collected from various public places and River sides and transported to Disposal center in March and 338m3 Waste collected in June 2020. Waste is being collected from Manjeshwaram near Railway Station, Manjeshwaram Town near Surumathodu, Hosangadi town, NH 66 near checkpost, Mada, Karoda, Kunjathur,	995m3 Waste collected from various public places and River sides and transported to Disposal center in March and 338m3 Waste collected in June 2020. Waste is being collected from Manjeshwaram near Railway Station, Manjeshwaram Town near Surumathodu, Hosangadi town, NH 66 near checkpost, Mada, Karoda, Kunjathur, Thumminadu, 10th mile.	995m3 Waste collected from various public places and River sides and transported to Disposal center in March and 338m3 Waste collected in June 2020. Waste is being collected from Manjeshwaram near Railway Station, Manjeshwaram Town near Surumathodu, Hosangadi town, NH 66 near check post, Mada, Karoda, Kunjathur, Thumminadu,10th mile.	995m3 Waste collected from various public places and River sides and transported to Disposal center in March and 338m3 Waste collected in June 2020. Waste is being collected from Manjeshwaram near Railway Station, Manjeshwaram Town near Surumathodu, Hosangadi town, NH 66 near checkpost, Mada, Karoda, Kunjathur, Thumminadu,10th mile.		Work yet to be completed.

					, 10th mile.	Thumminadu, 10th mile.	CLEAN MANJESHWAR CAMPAIGN - Waste collected from various places across the panchayath and N H on 28/02/2021 and disposed at MCF Gerukkatte using bio capping facility	CLEAN MANJESHWAR CAMPAIGN - Waste collected from various places across the panchayath and N H on 28/02/2021 and disposed at MCF Gerukkatte using bio capping facility	CLEAN MANJESHWAR CAMPAIGN - Waste collected from various places across the panchayath and N H on 28/02/2021 and disposed at MCF Gerukkatte using bio capping facility		
E	Installation of camera	Manjeshwaram Grama Panchayat	March 2020	CC Camera installed at Karoda, National Highway, Suramathodu, and Near Manjeshwaram. 2020-21 Project 58/2020-21 CC camera	CC Camera installed at Karoda, National Highway, Suramathodu, and Near Manjeshwaram. 2020-21 Project 58/2020-21 CC	CC Camera installed at Karoda, National Highway, Suramathodu, and Near Manjeshwaram. 2020-21 Project 58/2020-21 CC	CC Camera installed at Karoda, National Highway, Suramathodu, and Near Manjeshwaram. 2020-21 Project 58/2020-21 CC	CC Camera installed at Karoda, National Highway, Suramathodu, and Near Manjeshwaram. 2020-21 Project 58/2020-21 CC	CC Camera installed at Karoda, National Highway, Suramathodu, and Near Manjeshwaram. 2020-21 Project 58/2020-21 CC camera		Tendered

				installation at Uppala riverside.	camera installation at Uppala riverside.	camera installation at Uppala riverside.	camera installation at Uppala riverside. 2020-21 Project 58/2020-21 forwarded work order to contractor of CC Camera installation at Uppala river side. Sent a letter through email to National Highway Authority Kasargod to allot the permission for installation of CC camera.	camera installation at Uppala riverside. 2020-21 Project 58/2020-21 forwarded work order to contractor of CC Camera installation at Uppala river side. As per the direction from NH Kasaragod, sent a letter through email to project director Kozhikode to allot the permission for installation of CC camera.	installation at Uppala riverside. sent a letter through email to project director,NH project implementation unit 34/743 b, behind populer vehicle maruthi showroom, civil station, kozhikode to allot the permission for installation of cc camera. reminder letter sent on 17.04.2021 through email and registered post (copy to PCB)		

C	Tying of net on both sides of the bridge	Irrigation Department	2019-2020	Estimate for fencing work on both sides of Uppala NH Bridge proposed for Rs.47.00 lakhs. Estimate submitted to Chief Engineer through PRICE 2019/10825/IA dated 15.11.2019 for approval	Estimate for fencing work on both sides of Uppala NH Bridge proposed for Rs.47.00 lakhs. Estimate submitted to Chief Engineer through PRICE 2019/10825/IA dated 15.11.2019 for approval	DPR submitted to Chief Engineer, I & A (PRICE ID: 2019/10825/IA) for approval.	DPR submitted to Chief Engineer, I & A (PRICE ID: 2019/10825/IA) for approval.	DPR submitted to Chief Engineer (Price ID: 2019/10825/IA) for approval.	DPR submitted to Chief Engineer (Price ID: 2019/10825/IA) for approval.	-	Work still under process.
E	Continuous vigil on waste dumping on roads	Police Department		Completed	Completed	Completed	Completed	Completed		100%	Completed
A(a)	Water quality monitoring	KSPCB	Being done regularly		Water quality is being monitored by KSPCB, Kasaragod regularly.						

Sd/-

Environmental Engineer

UPPALA RIVER - UPPALA BRIDGE (Existing NWMP Station)			
Sampling Point			Uppala Bridge
NWMP Station Code			2306
Latitude			12˚41'41.7"N
Longitude			74˚54'16.9"E
Date of Sampling			23.04.2021
Nature and flow of the river			Moderate flow, water level decreased
Sl.No	Parameters	Unit	Uppala Bridge
1	Temperature	˚ C	29
2	pH	-	7.45
3	Conductivity	µmhos/cm	50000
4	Turbidity	NTU	1.2
5	BOD	mg/l	0.87
6	Dissolved Oxygen	mg/l	4.13
7	Total Coliforms	cfu/100ml	390
8	Feacal Coliforms	cfu/100ml	88
9	Feacal Streptococcus	cfu/100ml	20
10	Chlorides	mg/l	17600
11	Total Alkalinity	mg/l	90
12	Total Hardness	mg/l	7400
13	Calcium Hardness	mg/l	5700
14	Magnesium Hardness	mg/l	1700
15	Calcium	mg/l	2280
16	Magnesium	mg/l	413.1
17	Total Dissolved Solids	mg/l	30500
18	Sodium	mg/l	9100
19	Potassium	mg/l	251

UPPALA RIVER - UPPALA RIVER NEAR BHAGAVATHI TEMPLE (Bhagavathi Gate) - (Proposed NWMP Station)			
Sampling Point			Uppala River Near Bhagavathi Temple (Bhagavathi Gate)
Distance from existing NWMP Station			878.66 m
Latitude			12˚41'20.1"N
Longitude			74˚54'34.0"E
Date of Sampling			23.04.2021
Nature and flow of the river			Water level decreased, moderate flow
Sl.No	Parameters	Unit	Uppala River Near Bhagavathi Temple (Bhagavathi Gate)
1	Temperature	˚ C	29
2	pH	-	7.71
3	Conductivity	µmhos/cm	3980
4	Turbidity	NTU	1
5	BOD	mg/l	1.06
6	Dissolved Oxygen	mg/l	6.66
7	Total Coliforms	cfu/100ml	240
8	Feacal Coliforms	cfu/100ml	80
9	Feacal Streptococcus	cfu/100ml	20
10	Chlorides	mg/l	1170
11	Total Alkalinity	mg/l	34
12	Total Hardness	mg/l	650
13	Calcium Hardness	mg/l	500
14	Magnesium Hardness	mg/l	150
15	Calcium	mg/l	200
16	Magnesium	mg/l	36.5
17	Total Dissolved Solids	mg/l	2300
18	Sodium	mg/l	615
19	Potassium	mg/l	28

Sd/-
Assistant Scientist

Sd/-

MEMBER SECRETARY

Time-limit
By Speed post

GOVERNMENT OF KERALA

Water Respources (WS-B) Department

No.B2/222/219/WRD 27/11/2019,Thiruvananthapuram

From
Secretary to Government

To
Dr.M.Dhinadhayalan
Adviser (PHEE)
Nirman Bhawan, Ministry of Housing
and Urban Affairs ,Government of India
New Delhi - 110032.

Sri.A.Sudhakar DH,WQM-I Division,
Central Pollution Control Board,
Parivesh Bhawan, East Arjun Nagar,
New Delhi - 110032.

Sir,

Sub: Water Resources Department - Hon'ble NGT order dtd 11.09.2019 passed in O.A.No.496/2016 in the matter of News item published in Hindusthan Times dtd 19.06.2015 - Consolidated Report of the State of Kerala - submitting of - reg

Ref: a.Letter No.Q-1514/1/216-CPHEEO dated 25/1/219 of the Ministry of Housing and Urban Affiars, New Delhi
b)Letter F.No.A-14011/325-2015/2019-WQM-II dated 24.10.2019 of the Central Pollution Control Board.

With reference above, I am directed to forward herewith consolidated report of State of Kerala regarding the present status of the implementation and aciton plans on Rain Water Harvesting for Conservation of Water for the purpose of filing a combined report before Hon'ble NGT in compliance with the judgment dated 11.09.2019.

Yours Faithfully,
GOPAKUMARAN NAIR B
ADDITIONAL SECRETARY

For Secretary to Government.

WATER RESOURCES DEPARMENT

GOVT. OF KERALA

SIGNIFICANCE OF RAIN WATER HARVESTING FOR CONSERVATION OF WATER

Status of implementation and Action Plan

KWA, GWD & KRWSA - Consolidated Report

Index

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1. Introduction.

Kerala is a blessed land with green vegetation, rivers, backwaters and vast natural resources. The state receives an average annual rainfall of 3000 mm. But Kerala faces severe water scarcity between February and mid May every year which leads to acute water shortages during summer, especially in the drinking water sector. Paucity of water during this period for drinking and other needsimpact adversely the health and livelihood of the people especially rural poor. This situation is expected to persist in the coming years also. It is estimated that Kerala needs 5823 million cu. metres of water additionally over and above the existing resources every year to meet its needs. Despite 44 rivers and world's largest well density, per capita surface and groundwater availability of the State is lower than that of other States in the country. Harvesting rainwater, which is abundantly available, for dry months lends itself as a viable solution in Kerala for solving the shortage of drinking water. If even a small proportion of the huge volume of rainwater lost to the sea can be successfully harvested, it can solve the problem of drinking water scarcity in Kerala especially in the dry months. Government of Kerala has embarked on a special campaign for promoting Rain Water Harvesting (RWH). The efforts taken at various levels are observed to be attracting large population to practice RWH. Moreover the programme is well accepted by people in Kerala, especially those who are living in hilly, costal and remote areas with limited access to potable water.

Rainwater harvesting is a technique or strategy for the collection of rainwater and storing it in the right way for future use. The water can be collected from various surfaces and platforms and stored for later use. In most cases, the water is usually collected from rooftops and other hard surfaces. Rainwater harvesting is considered as a very reliable way to conserve water. One of the simplest ways of storing water from the collection is storage tanks. The systems used for water collection is based on simple techniques that are very easy to maintain. The overall expenses used in setting up harvesting methods are much cheaper compared to other purifying or pumping means. Also, its maintenance is feasible on the economic front as it does not require deep pockets. Another important advantage is that it reduces dependency on other ground water sources.

As we all know, Kerala has a sloppy terrain and the rain water we receive will flow into the sea within a day. It emphasise the importance of conscious efforts to conserve this precious resource. We should adopt local specific and eco-friendlymethods and techniques to conserve the rain water and thereby enrich our ground water level. It is evident that we have developed so many models of rainwater harvesting and ground water recharging.

2. NOTE ON THE SIGNIFICANCE OF RAIN WATER HARVESTING FOR CONSERVATION OF WATER.

A. KERALA RURAL WATER SUPPLY & SANITATION AGENCY (KRWSA)

1. Implementation of RWH units through Jalanidhi Projects

Scaling up of rooftop rainwater harvesting programme with the component of ground water recharge is found suitable for the individual households as alternative method for providing drinking water and gradually improving the water table. Hence the technology was adopted in implementing the World Bank aided Kerala Rural Water Supply and Sanitation Project (**popularly known as Jalanidhi**) since 2001. The project has been implemented with people participation for setting up of small and large water supply scheme managed and operated by the beneficiary themselves. The cost is shared by Government (GoK), concerned Gramapanchayath (GP) and beneficiary (BG) in definite proportion.

Many of the GPs especially belonging to hilly and coastal regions are seriously planning to adopt RWH as technology option to provide the source of the water supply schemes. The RWH technology for providing as a source of the water supply scheme is more economical and the water so obtained is free from quality issues. The agency could so far construct 23,390 nos of RWH structures all over Kerala through Jalanidhi phase-1 & Phase 2 project. Details are as shown below,

JALANIDHI - Details of RWH structures constructed				
Status as on 30.06.19				
Sl No.	**District**	**Jalanidhi-Phase-1 (FY2000-2008)**	**Jalanidhi-Phase-2 (FY 2012-2019)**	**Total RWH structures constructed**
1	Trivandrum	-	-	0
2	Kollam	695		695
3	Alappuzha	-	-	0
4	Pathanamthitta	754	89	843
5	Kottayam	1645	3073	4718
6	Iddukki	900	6123	7023
7	Ernakulam	690		690
8	Thrissur	393		393
9	Palakkad	2183		2183
10	Malappuram	1395		1395
11	Kozhikkode	1701		1701
12	Wayanad	79		79
13	Kannur	840	488	1328
14	Kasargode	2029	313	2342
	Total	**13304**	**10086**	**23390**

2. Implementation of RWH units under State Plan Scheme by Rain Centre-KRWSA

Rain Centre functioning under KRWSA was constituted in the year 2004 to promote Rain Water Harvesting and Ground Water Recharge activities in the State. Initially the Centre was focusing on promoting the concept of Rain Water Harvesting and as part of it a number of IEC activities along with training programmes were conducted throughout the State. Demo RWH tanks of various capacities were constructed in public institutions with the idea of disseminating the ferro cement technology to the general public.

Initially World Bank assistance and MGP funds were provided for promoting Rain Water Harvesting activities. Considering the need for inculcating the habit of rain water harvesting as alternate source of water among people, a detailed proposal was submitted to the Planning Board for including in the 12th Five Year Plan. The proposal was approved and budget allocation was sanctioned from the first year of 12^{th} Plan.

Scaling up of roof top Rain Water Harvesting programme with the component of Ground Water Recharge is found suitable for the individual households as alternative method for providing drinking water and gradually improving the water table. The programme is well accepted by the people in the State, especially those who are living in hilly, coastal and remote areas with limited access to potable water.

. During the last six years the Centre was assisting individual households and schools to construct RWH structures with the primary objective of minimizing the drinking water issues. The programme is implemented utilizing the Plan provision provided in the State Budget of every Financial Year.

Many of the Grama Panchayths, especially those located at hilly and coastal regions are seriously implementing Rain Water Harvesting as a technology option to solve the drinking water issues of their GPs. Similarly, many institutions with demand for large quantity of water have evinced interest in establishing rain water harvesting units as an additional source of drinking water.During the last six year period 7100 Nos .of families in 34 Grama Panchayaths and 840 Nos. Govt. Schools in the state have been assisted under the programme.

The assistance of the programme was extended to schools belonging to both Government and aided sector. The programme named as **'JalaSowhrudhaVidhayalayam'** was implemented State wide by assisting the selected Government/Aided schools to construct RWH structures. The selection of schools under the programme was entrusted to the Education Department.

The RWH &GWR programme is implemented on a cost sharing basis, the capital cost sharing pattern being 5% for BPL and 10% for APL category. The estimated unit cost for the construction of 10,000 litre capacity ferro cement RWH unit is Rs.65600/-. The unit cost is likely to vary from location to location based on the rate fluctuations of materials in the market.The State has recognized need and importance of Rain Water Harvesting programme once again especially under the light of recent floods.

The rain water harvested and stored in the RWH tanks becomes a blessing to several families as they have enough pure water to survive the drought and flood period. Also the concerned GPs and households take initiatives to share the water with the families that had shortage of drinking water. Considering the increased demand for RWH as an alternative and additional source of water, it is essential that financial support is extended from Government at least till such time that the technology gains wide acceptance.

a) Aim of the scheme

The broad aim of the programme is to improve the drinking water facility of the individual households and schools that are facing acute shortage of water. Rain Water harvesting is adopted as alternative source for drinking water as the existing water sources of most of the households and schools in remote and hilly areas dry up from the month of January onwards. The RWH tanks provided as part of this programme will be used as a supplementary source during the rainy season and the water stored at the end of the rainy season is carefully utilized in the summer months.

The concept of harvesting rain water for drinking and other purposes are made known to the general community and student community while they are involving in the implementation and post implementation period of the programme. The message of rain water harvesting as alternative source of water and conservation of the rain water for the future is passed on to generations irrespective of their age, social status etc. The programme is contributing to the sustainability of the water bodies as it ensures ground water recharge along with rain water harvesting and that in turn will be long term measures taken for addressing the water scarcity problems.

b) Objective of the programme

The specific objectives of the programme are:

1. To popularize RWH with individual households as alternative solution to drinking water scarcity.
2. To institutionalize RWH as a means of water conservation and alternate/additional solution for drinking water in public/Government institutions.
3. To promote the concept of RWH & GWR across the State aimed at building awareness of the general public on water conservation.
4. To initiate campaign for popularizing the concept of well recharge for improving the water table towards ensuring water security.
5. To establish replicable Rain Water Harvesting models for the State.

c) Plan Fund Allocation Status - year wise

Sl.No	Financial Year	Fund allocated (lakhs)	Fund Released (Lakhs)	Beneficiary share mobilized (Lakhs)	Remarks
1	2012 – 13	1202.00	802.00	60.56	Work completed.
2	2013 – 14	420.00	400.00	35.58	Work completed.
3	2014 – 15	400.00	420.00	31.96	Work completed.
4	2015 – 16	420.00	420.00	00	Work completed. No cost sharing for school RWH programme
	2016 – 17	1000.00	200.00		
5	2017-18	1820.00	500.00	73.04	Work completed.
6	2018-19	1500.00	1127.00	67.42	Work completed.
7	2019-20	2031.00	500.00	00	Work under progress.
	Total		**4409.00**	**265.56**	

Physical Status - Year Wise.

Financial Year	Name of District	No. of GPs	Name of GPs covered	No. of RWH units constructed
2012-13	Kannur	6	Udayagiri	246
	Idukki		Konnathadyp	500
			Velliyamattom	350
			Kanjikuzhy	45
	Kottayam		Manarcadu	280
			Parathodu	530
2013-14	Idukki	4	Karunapuram	450
			Kokkayar	425
	Ernakulam		Pallipuram	105
			Nayarambalam	55
2014-15	Idukki	5	Kattapana	200
			Kamakshy	200
			Peruvanthanam	200
	Kasargod		West Eleri	200
			Mangalpady	200
2015-16 & 2016-17	State vide – 14districts	All the districts	Implemented in selected 840 Govt. Schools	840
2017-18	Thiruvananthapuram	9	Anad	62
	Kollam		Clappana	57
			Kalluvathukkal	215
	Pathanamthitta		Niranam	53
			Puramattom	175
	Kottayam		Koruthodu	303
			Thalanadu	175
	Palakkad		Thrikkaderi	235
	Kasargod		Valiyaparamba	300
2018-19	Thiruvananthapuram	10	Aryanadu	4
			Aryamgodu	122
	Pathanamthitta		Vechoochira	175
	Alappuzha		Edathwa	175
			Neelamperoor	175
			Ramankari	175
	Kottayam		Poonjar	175
			Thrikodithanam	175
	Idukki		Karimkunnam	175
			Senapathy	175
	TOTAL	**34**		**7927**

Various stages of construction of Rain Water Harvesting Tank of 10000 Litres capacity.

RWH units constructed in individual households.

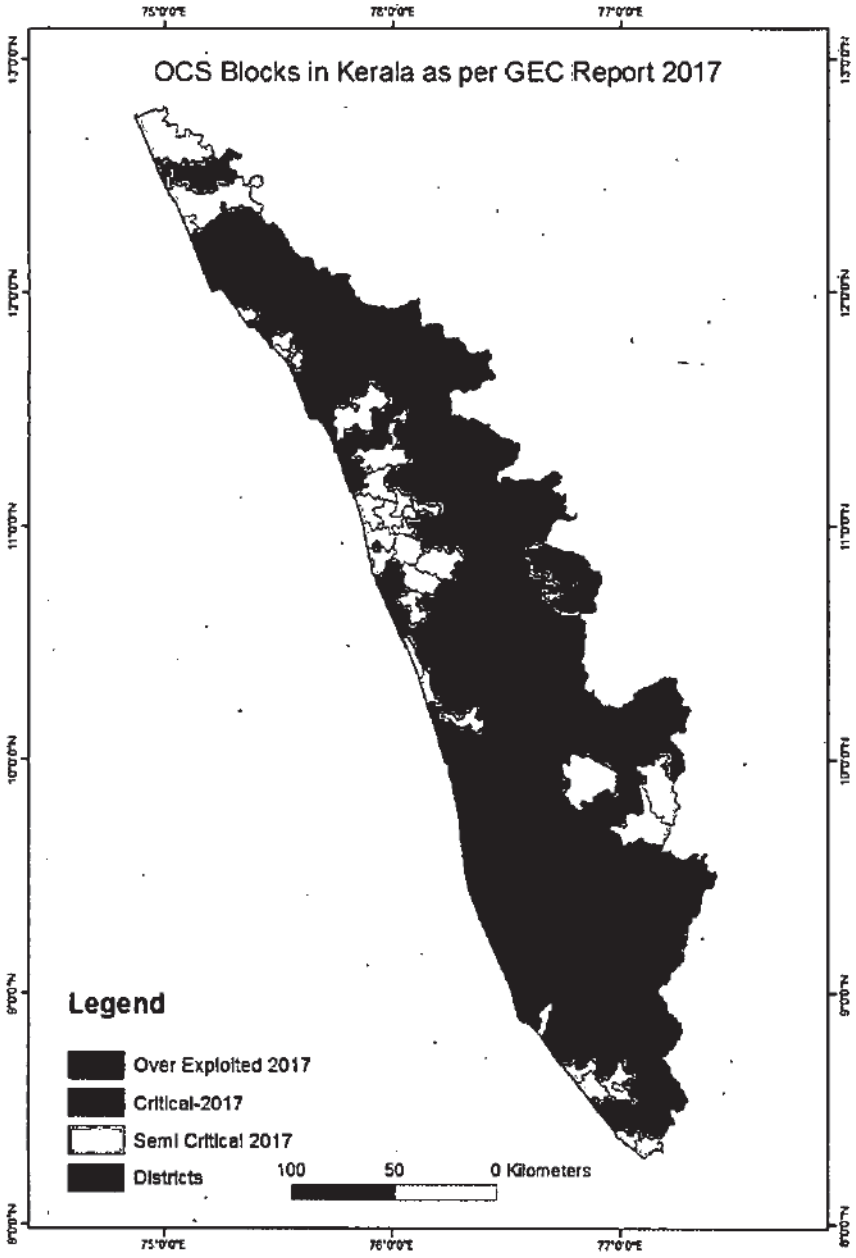
B. GROUND WATER DEPARTMENT (GWD)

The State of Kerala is blessed with abundant rainfall that amounts to an average of 3,000 mm, which is two times more than that of National average. But the pattern in rainfall distribution indicates 69 % of the annual rainfall is received during the Southwest Monsoon (June to September) and 16 % received during Northeast Monsoon (October to December) and the remaining is from the Summer Rains. . The intensity of rainfall is high and the precipitation occurs in short spells lasting only few hours. The rainfall is the major source of groundwater recharge. As per the latest groundwater resource estimation, the annual groundwater availability in Kerala as on March 2017 has been computed as 5.21 BCM, in which rainfall recharge accounts for about 82% of the annual recharge, with the remaining contributed by other sources. In Kerala the topography is highly undulating and steep and hence the rain falls on the ground drains fast into the sea without contributing much to groundwater recharge.

About 88% of the total geographic areas are underlined by massive hard rocks. Whereas, the weathered laterite that forms the cap rock acts as phreatic aquifer is not appreciable enough (20 meters approx.) to store entire rainfall. Due to this reason, the hilly areas often experience water scarcity immediately after the rainfall due to hydrogeological and other natural topographic complexities.

Categorization of Areas

Based on the periodic groundwater resource assessment jointly carried out by Central Groundwater Board and State Groundwater Department, the assessment units (Development Blocks) have been categorized into Safe, Semi-Critical, Critical and Over-Exploited according to the stage of groundwater development. On the Basis of recent estimation; out of 152 Nos of blocks a total number of 119 blocks are categorized as Safe and, 30 blocks are categorized as Semi-critical and 2 blocks as Critical and 1 as Over-Exploited. Special attention is being given to recharge groundwater in these OCS blocks through roof top rainwater harvesting by making use of recharge wells/pits. It is also seen that number of bore wells are increasing and deep groundwater extraction also depleting the groundwater resources rapidly. The list of OCS blocks and its stage of development is given in the Annexure-I.



Scheme for Groundwater Conservation and Recharge

Groundwater Department is implementing a "Scheme for Groundwater Conservation and Recharge". Under this scheme, rain water collected from the roof-top is harvested for recharging the aquifer through dug wells and recharge pits. The recharging of deep aquifers through bore wells are also being experimented. The total budget outlay during the period 2019-20 was450 lakhs. It is estimated that there are about 65 Lakhs dug wells in Kerala and the groundwater extractions by means of traditional dug wells are prevalent source of fresh water. There are number of public dug wells left abandoned and needs renovation. These dug wells can be considered as suitable structures to recharge groundwater. The Central Groundwater Board has prepared a Block wise master plan in 2015 to take up artificial groundwater recharge to groundwater. The same canbe used as a guideline to stream line groundwater recharge activities of the Department.

Groundwater recharging initiatives of Groundwater Department

Groundwater department is engaged in recharging groundwater through roof top rainwater harvesting in public buildings and government institutions. Department had successfully carried out roof top rainwater harvesting in Kattakada Legislative Assembly Constituency of Thiruvananthapuram District. This constituency was officially declaredas the first Assembly constituency in Kerala to implement artificial groundwater recharging structures in all Government offices and Schools in November 14th 2019. The details of groundwater recharging initiatives carried out by groundwater department in government institutions and public buildings are given in the Annexure-II

The Department had undertaken a program to assess the scope of groundwater recharge through bore wells through experimental studies across the State. The interim results of bore well recharging studies from Idukki District ispromising. Due to limited storage spaces in the phreatic aquifer zones, the scope of storing huge volume of groundwater in the deep aquifers through bore wells is being explored. Groundwater department had already prepared a proposal in the Karadikunnu Watershed of Chittor Block of Palakkad District to carry out bore well recharging.

Roof top Rainwater Harvesting

Rainwater Harvesting is the technique of collection and storage of rainwater in any form of container for the use at the time of need. This is also called insitu rainwater harvesting. The excess water can be diverted for recharging groundwater table. In Kerala insitu rainwater harvesting is recommended in the coastal area and also elevated hilly areas where groundwater quality/quantity may not be suitable/sufficient for drinking purpose. Artificial recharge to groundwater is a process by which the groundwater reservoir is augmented at a rate exceeding the natural conditions of replenishment. If the source water for recharge is rainwater, then it is generally called rainwater harvesting to recharge groundwater. It is to be noted that the Roof Top Rainwater Harvesting structures are mandatory in all new buildings in Kerala, but the enforcement mechanism is not sufficient. By considering the availability of large number of open wells and roof tops in the OCS blocks the scope of groundwater recharging through roof water harvesting is high.

Roof Top Rainwater Harvesting in Public Buildings

Successful recharging structure depends on the hydrogeology of the area, nature and extent of the aquifer, soil cover, topography, depth to water level and quality of groundwater. The availability of source water and clean roof tops are the prime requisite for groundwater recharging. The source for groundwater recharge is basically assessed in terms of non-committed surplus monsoon run off. Kerala is blessed with abundant rainfall and utilizable monsoon run off is quantified as about 42,000 MCM. The areas having a post monsoon water level of >6m can be considered as ideal for artificial groundwater recharging.

Groundwater Department proposed to recharge groundwater through plan scheme from the year 2020 to 2025. The roof top rainwater harvesting projects can be achieved by making use of the dug wells, recharge pits, bore wells in government institutions and public buildings.A total number of 33 Blocks in Kerala belongs to OCS category as per the latest groundwater resource estimation as on March 2017. A total number of 1010 different artificial groundwater recharge structures are proposed to be implemented in government owned buildings and institutions in these blocks for an amount of Rs.1025.25 lakhs. The proposed structures in each district, its expected cost and its implementation plan are given in the Annexure-III (a-e).

Annexure-I

List of Blocks in the OCS Category in Kerala

Sl. No	District	Name of the Block	Category	Stage of Groundwater Development
1	Ernakulam	Parakkadavu	Semi Critical	79.12
2	Idukki	Elam Desom	Semi Critical	73.8
3	Idukki	Kattappana	Semi Critical	81.43
4	Idukki	Nedumkandam	Semi Critical	84.28
5	Kannur	Kannur	Semi Critical	80.74
6	Kannur	Panur	Semi Critical	89.84
7	Kannur	Thalassery	Semi Critical	79.42
8	Kasargod	Kanhangad	Semi Critical	77.67
9	Kasargod	Kasaragod	Critical	97.68
10	Kasargod	Karadka	Semi Critical	82.03
11	Kasargod	Manjeswar	Semi Critical	83.36
12	Kollam	Mukhathala	Semi Critical	73.13
13	Kozhikode	Ballussery	Semi Critical	84.7
14	Kozhikode	Kunnamangalam	Semi Critical	82.56
15	Malappuram	Kondotty	Semi Critical	84.72
16	Malappuram	Kuttippuram	Semi Critical	77.92
17	Malappuram	Malappuram	Semi Critical	74.91
18	Malappuram	Thanur	Semi Critical	83.86
19	Malappuram	Thriurangadi	Semi Critical	82.57
20	Malappuram	Tirur	Semi Critical	77.75
21	Malappuram	Vengara	Semi Critical	79.84
22	Palakkad	Chittur	Over Exploited	104.49
23	Palakkad	Pattambi	Semi Critical	81.37
24	Palakkad	Thrithala	Semi Critical	76.64
25	Palakkad	Malampuzha	Critical	97.72
26	Thiruvananthapuram	Athiyannur	Semi Critical	88.91
27	Thiruvananthapuram	Chirayinkil	Semi Critical	83.06
28	Thiruvananthapuram	Parassala	Semi Critical	81.94
29	Thiruvananthapuram	Pothencode	Semi Critical	87.71
30	Thiruvananthapuram	Nedumangad	Semi Critical	85.02
31	Thrissur	Chowannur	Semi Critical	75.94
32	Thrissur	Mathilakom	Semi Critical	81.24
33	Thrissur	Thalikkulam	Semi Critical	75.22

Annexure-II

Details of Groundwater Conservation and Recharge Schemes implementedby Groundwater Department in Government Institutions and Buildings.

Financial Year	Budget Allocation in Lakhs	Expenditure in Lakhs	Structure
2012-13	50	44	In the 12th 5 year plan(2012 -2017) , Total Budget Allocation was 260 lakhs in which 219.91 lakhs expenditure incurred for completing 1 Subsurface dyke 169 Nos of Recharge Pit/ Dug well Recharge Schemes and 4 Nos of Check dams
2013-14	60	58.57	
2014-15	70	39.46	
2015-16	40	38.15	
2016-17	40	39.68	41 Recharge pit/Dugwell
2017-18	157	124.32	83 Recharge pit/Dugwell Recharge Scheme 5 Borewell Recharge Scheme
2018-19	350	129.09	76 Recharge pit/Dugwell Recharge Scheme 5 Borewell Recharge Scheme

C. Kerala Water Authority (KWA)

It may be noted that the issue for consideration in the OA 325/2015 is identification, protection and restoration of water bodies whereas in the OA 253/2015 (afterwards OA 496/2016) the issue is the problem of water quality on account of contamination of groundwater. In the order dated 10.05.2019 in the OA 325/2015, the Principal Bench of NGT has observed that reuse of treated sewage water as well as restoration of water bodies are connected to ground water conservation, which in turn is connected to remedying the pollution of polluted river stretches and directed all the States and UTs to review the existing framework of restoration of all the water bodies by preparing an appropriate action plan, while in OA 496/2016, the Principal Bench of NGT noted the need for comprehensive groundwater management plan covering Rain Water Harvesting (RWH) systems, use of treated water for ground water recharge and regulation of extraction of groundwater, apart from revival and rejuvenation of water bodies.

The above directions in the two original applications before the Principal Bench indicates the need for a comprehensive action plan consisting mainly of actions pertaining to pollution control of rivers, sewage management, ground water management and rain water harvesting. The indicative guidelines (copy attached) published by CPCB in June 2019 in compliance to the order dated 10.05.2019 of the Principal Bench of NGT in OA 325/2015 contains the key activities and components and agencies to perform the task. As per this the agencies responsible for rainwater harvesting (RWH) are Local Bodies and District Magistrates and hence the comprehensive action plan for RWH is to be submitted by those departments. However, KWA has plans to implement RWH in assets owned and managed by KWA. Though KWA gives priority to perennial surface water sources while designing schemes, groundwater extraction is resorted to in small/mini water supply schemes. When such schemes are changed to comprehensive water supply schemes based on surface water sources in a phased manner, KWA has plans to handover the sources (tube/bore wells) of such small/min schemes to Ground Water Department for using them as a source for ground water recharging. Besides this, roof top rainwater harvesting is now practiced in some buildings and water treatment plants of KWA and we have plans to adopt this to the maximum possible extent in buildings owned by KWA.

The actions on the other points mentioned in the indicative guidelines published by CPCB in June 2019 in compliance to the order dated 10.05.2019 of the Principal Bench of NGT in OA 325/2015 and pertaining to KWA is detailed below.

2 (g) GW Protection - Capping of contaminated tube wells and potable water supply through alternate measures in the affected areas of ground water

As per status in IMIS, the web portal of the Ministry of Jal Shakti, Government of India as on 01.04.2015 there were 95 Fluoride affected habitations in the State. Out of the above, 63 habitations have been covered with piped water supply as on 31.03.2019. As per the current status 32 habitations are remaining to be covered and ongoing projects are available for 17 habitations which will be covered by 2021 March.

Regarding the remaining 15 habitations, repeated water quality tests were conducted based on directions from the Ministry of Jal Shakti to ensure detection of contamination. As per the test

results, now fluoride content is within the Acceptable / Permissible limit in 7 out of these 15 habitations. Action is being taken to cover the remaining 8 habitations with piped water supply by 2021 March for which feasible proposals are being prepared. Aggressive RWH and recharging these quality affected sources will also help redeem the situation.

3. Sewage Management

(a) Identification of cities,towns and villages discharging sewage into river/tributary

Though 21 river stretches in Kerala were identified as polluted by the Hon'bleNGT , it was observed that only one river in Trivandrum, viz, Karamana River is reported with problem of direct discharge of sewage in to the river/tributary.The Action Plan for this river was approved by NGT. Out of the remaining 20 rivers, no river was identified as having problem of pollution due to direct discharge of sewage into the water body. Action plan for 13 rivers approved by the River Rejuvenation Committee (RRC) were submitted to CPCB and Hon'ble NGT in 06/2019 and permission was sought for exempting the remaining 7 rivers from the list as these stretches were having BOD less than 3 mg/L.Based on the direction by CPCB that these cannot be exempted and action plan has to be submitted the action plan for these rivers also have been prepared by KPCB.

The status report as on 07.11.2019 on the actions (short term)to be taken by KWA as per the Approved Action Plan of Karamana River is indicated below:

No.	Activity	Cost Rs. in Cr.	Source of fund	Timeline	Present Status
a)	Pumping lines from the terminal pumping station Kuriyathi, to be connected directly to STP at Muttathara	3.375	AMRUT	May-19	Work completed and commissioned.
b)	Rehabilitation/upgradation of Thaliyal and Aranoor Sewerage Pumphouse by rehabilitation of existing well, construction of new well and grit chamber, installation of new pump sets	2.37	Plan scheme	May-20	Work order issued for Thaliyal. No offer received for Aranoor. To be retendered.
c)	5 MLD sewage treatment plant at Medical College	19.2	AMRUT	May-20	Work started. The progress of work is slow due to lack of permission for dumping excavated earth.
d)	Installation of adequate pumps in Mudavanmughal and Enchakkal pumping stations	0.23	Plan scheme	Mar-20	No response to tender. Presently retendered.

e)	DG sets in all lift and pumping stations – Mudavanmughal, , Kuriyathi, Pattoor, Kannammola, Plamoodu,Murinjapalam	0.92	Plan scheme	May-20	AS issued by Government in State Plan 2019-20 Bharat Heavy Electrical Limited has submitted their report and the report is under scrutiny.
f)	Reconnect sewer at Rajaji Nagar, stop outflow of sewage into Amayizhanchanthodu, control stormwater entry into sewer to avoid overflow in Thampanoor area. Sewage generated in Rajaji Nagar shall be diverted to main sewer line. Sewage generated in Thoppil area shall be diverted main sewer line	0.1	Maintenance work	Dec-19	Work could not proceed since the foundation of the bus terminal falls in the alignment. The scope of the work to be revised by rerouting the pipeline through main road.
g)	Divert the sewer line from the School compound of Government Karamana High School	0.42	Plan Scheme	May-20	Agreement executed. Road restoration charges remitted to PWD. Road restoration estimate from NH to be obtained.
h)	Rehabilitation by laying new lines increasing size of undersized main and reconstruction by dilapidated manholes for the last 3 years		Plan Scheme/ AMRUT	May-20	Works completed – 23 No. (Rs. 3.58 cr.)
	Total works in progress (62No.)	15.26			In progress – 39 No. (Rs. 11.68 cr.)
	Works in tendering stage (16No.)	4.05			Tendered/To be tendered – 16 No. (Rs. 4.05 cr.)
i)	Extension of sewer network wherever technically feasible in new areas of existing blocks		Plan scheme / AMRUT	May-20	Works completed - 11 No. (Rs. 1.68 cr.)
	In progress(20 No.)	15.78			In progress – 9 No. (Rs. 14.1 cr.)
	Tendering(9 No.)	9.31			Tendered/To be tendered – 9 No. (Rs. 9.31 cr.)
j)	Around 155 houses in Kurukuvilakom, Kannettumukku shall be provided with septic treatment system.	To be estimated			Not technically feasible to connect to the existing sewer system. Septic tanks will be provided by Corporation.

k)	Procurement of sewer cleaning machines and equipment maintenance	3.17	Plan Scheme	May-20	Work tendered. No response to first tender. Work retendered.
l)	Establishment of six additional blocks in uncovered areas		JNNURM& AMRUT	May-20	Works completed - 1 No. (Rs. 2.28 cr.)
	In Progress (10 nos.)	87.33			In progress – 9 No. (Rs. 85.05 cr.)
	Tendering (10 nos)	25.59			Tendered/To be tendered – 10 No. (Rs. 25.59 cr.)

(b) Identifying drains joining river and their quantification and characterization of pollution load

This has to be done by the LSGIs

(c) Preparation of DPR for interception and diversion of drains to STPS for which suitable site to be identified and plan for utilisation of treated sewage

(f) Restoration of natural drains for carrying only stormwater(but not sewage)

(h) Interception and diversion of sewage from drains and connectivity to STPs

The above action points (c,f,h) are interrelated. The main activities mentioned like restoration of natural drains for carrying only stormwater, preparation of DPR and interception and diversion of sewage from all drains are to be carried out by the local bodies/irrigation/PCB. However, as part of the action plan for Karamana river,the drain carrying sewage to the river from the terminal pumping station at Kuriyathi was intercepted and separate pumping main was laid to convey sewage directly to STP at Muttathara. This has resulted in taking about 20 MLD sewage additionally to STP (increasing the capacity utilisation from 50 MLD to 70 MLD.

(d) Execution of STP works and necessary infrastructure and ensuring household sewer connection for full utilisation of STP.

The present generation of sewage in Thiruvananthapuram city is estimated as 140MLD. Sewage presently treated is around 70MLD at the Muttathara treatment facility with a capacity of 107 MLD with facility for co-treatment of septage. The remaining sewage is managed through individual septic tanks and pit latrines. Around 30 tankers of septage are emptied at the STP on a daily basis. The projected sewage generation/day in the year 2051 is 153 MLD. With 80% coverage through piped sewerage system, additional STP required is only for 15 MLD (Existing capacity of STP is 107 MLD).Inorder to ensure household sewer connection and full utilisation of the STP long term measures are planned as below. The plan is to complete these activities within a period of three years.

No.	Long term measures proposed	Amount Required (Rs.in Crore)	Present Status
a)	Extension of sewerage system to Block F to G coastal belt	200	AS for the proposal for engaging Consultants for preparation of Detailed Engineering Report has been received under RKI (Rs. 17 Crores)
b)	Extension of sewerage system to Block H toR	700	
c)	Extension of sewerage system to Newly added areas of corporationviz, Kazhakootam, Sreekaryam,Kudappanakunnu, Vattiyoorkavu&Vizhinjam	300	
d)	Providing sewerage system in Block A to E	100	
e)	Rehabilitation of existing network and pump house in block A to E	100	
f)	Procurements of equipment for maintenance sewerage system	10	
g)	Additional STP requirement	60	
h)	**Total Amount required**	**1,470**	

(g) Ensuring utilisation of treated sewage for beneficial use such as agriculture, construction activity, washing/flushing/cleaning/industrial cooling etc.

In order to promote the reuse of treated water, treated sewage water from STP had been given free of cost. But only very few are using the facility. As potential users are very less for the treated sewage water (only secondary treatment), it has been decided to provide tertiary treatment for a part of the treated water as an initial step to enhance the reuse of water. Accordingly Administrative sanction has been accorded by the Government for 5MLD tertiary treatment at STP, Muttathara vide GO(Rt) No. 419/2019/WRD dated 14.06.2019. This can overcome the apprehension of people in using treated sewage water to a large extent.Weshall generate awareness among builders to utilize the treated effluent (tertiary treated) for construction purpose. Once tertiary treatment plant at Muttathara is completed as detailed above, more demand for the treated water is expected.The identified potential users are as follows

Travancore Titanium Ltd (1.50 MLD)
English India Clay (0.5 MLD)
VSSC (0.2 MLD)
Railway terminals (0.5 MLD)
Airport 2 terminals (0.5 MLD)
BSF (0.1 MLD)
Air force station (0.1 MLD)
NHAI-median wetting (0.2 MLD)
Construction agencies (0.5 MLD)
Educational Institutions around Muttathara (0.1 MLD)
Resort and Hotels around Kovalam (0.3 MLD)
Dairy farm-irrigation (0.5 MLD)

As the agency responsible for both water supply and sewage services, KWA shall make sure that needful action is taken as per the plan.

Plan of Action

Rain Water Harvesting for Conservation of Water.

a) Kerala Rural Water Supply & Sanitation Agency (KRWSA)

b) Ground Water Department (GWD)

c) Kerala Water Authority (KWA)

a) Kerala Rural Water Supply & Sanitation Agency (KRWSA)

Plan of Action for the RWH & GWR activities proposed for Financial Years 2019-20 and 2020 -21.

a) Construction of Individual household level RWH tanks of 10000 ltrs capacity.

The household level RWH tanks provided shall help the families to directly harvest the rain water and use it for drinking and other domestic purposes. The proposed structure can store rain water for the three summer months, thereby addressing water scarcity during summer.

The programme envisages covering 3000 Nos. of households selected from 20 GPs who shall be provided assistance for 300 Nos. of RWH units per GP. The support under this programme shall be considered in order to fill the gap of water supply coverage. Thus the assistance shall be provided to households where there are no facilities at all for drinking water at present. Major criteria for selecting the GPs will be low percentage of water supply coverage. The 10% beneficiary contribution shall ensure an increased sense of responsibility and ownership among the beneficiaries and sustainability of the structure in the long term.

b) Installation of Open well Recharge system for sustainability.

The broad aim of the programme is to improve the water quantity and quality levels of homestead open dug wells. The sustainability of the water sources is ensured by promoting rain water harvesting and ground water recharge activities and that in turn will become long term measures for addressing the water scarcity problems.

It is envisaged to recharge 13500 Nos. of seasonal and quality affected wells of 20Nos. of selected GramaPanchayths where the water quality and quantity problems are severely affected. The GPs that are categorized under critical blocks and JalanidhiPanchayaths shall be prioritized while selecting the GPs. The wells shall be made sustainable through recharging the same by directing rain water from the roof tops. The water quality of these wells is ensured by protecting them from pollution. Possible measures shall be taken in order to sanitize the well as part of sustainability. The sources of rural water supply schemes which require the support for recharging through rain water harvesting will also be included under the programme. The programme will be implemented on a cost sharing basis.

c) Community Managed Rain Water Harvesting storage tanks for SC/ST/other backward colonies where water scarcity is acute.

Common rain water harvesting storage tanks shall be constructed for providing water to a group of families living together. There are several SC/ST/other backward colonies where water is a major issue and people residing in such colonies had to walk long distance for fetching water. The public well provided with in the colony may not be yielding sufficiently to provide water to the requirement of the people in the colony. The common RWH storage tank provided shall serve as a substitute source and the overflow from the storage tank shall be directed to the public well as recharge mechanism.

In order to sustain the scheme, the existing open/bore well source in the colony shall be rehabilitated or additional well shall be provided with the arrangement for pumping and

distribution system to the households in the colony. The scarcity of water during the summer months can be managed by utilizing the sources alternatively.

The structure shall be constructed in a common place and water shall be collected from the houses located nearby the structure. The colony shall be mobilized to form into a beneficiary group and the post operation activities shall be entrusted with the group. The structure shall be constructed on a cost sharing basis to ensure the participation of the households for ownership and responsibility. The size of the structures shall be decided based on the number of households in selected colony. It is proposed to implement the programme in 7 Nos. of selected colonies.

d) Implementing RWH & GWR activities for Govt. institutions in Tvpm city.

A portion of the Plan provision is proposed to be utilized for RWH projects in Thiruvanathapuram city complementing 'Operation Anantha – II', the flood control project being implemented in Thiruvanathapuram city.

One of the major activities proposed for controlling flood in Thiruvanathapuram city is adoption of rain water harvesting and roof top rain water collection and storage systems. The various efforts taken as part of 'Operation Anantha – I' has resulted in controlling the flood to a great extent in the city. In flood control and management measures, the water retention measure reduces the flow of water discharged to the canals and drains, thereby avoiding the overflow of canals and drains. Rain Water harvesting and roof top rain water storage systems help in holding the runoff and will reduce the chances of flooding, besides improving the ground water table. The improved water table will reduce the dependency on piped water also.

Sl.No	Name of activity proposed	Financial Year 2019-20		Financial Year 2020-21	
		No. of units approved	Estimated Amount (Rs. in crore)	No. of units proposed	Estimated Amount (Rs. in crore)
1	Construction of Individual household level RWH tanks of 10000 ltrs capacity with GWR system	1000 Nos. of individual house holds	7.10	2000 Nos. of individual house holds	14.00
2	Installation of Open well Recharge system for attainability of wells.	8500 Nos. of individual house holds	9.35	5000 Nos. of individual house holds	20.00
3	Community Managed Rain Water Harvesting storage tanks in SC/ST/other backward colonies where water scarcity is acute	2 Nos. of Colonies	0.10	5 Nos. of Colonies	0.50
4	Implementing RWH & GWR activities for Govt. institutions in Tvpm city. ***	10 Nos of Govt. Institutions	3	12 Nos of Govt. Institutions	2
	Total		**19.55**		**36.5**

*** *See annexure for details*

***Annexure

Sl No.	Name of Institution	Component	Units
1	Fire and Rescue Services Head quarters	Construction of 1 No. of Open well with pump and accessories	1
		Construction of 1 No. of GLSR (26000 litre)	1
		Installing pipe lines for the collection of rain water from existing building	1
2	ARP Camp	Construction of 1 No. of Rain Water Harvesting and Flood Moderation Pond at ARP Camp, Nandavanam, Thiruvananthapuram (239000 litres capacity)	1
		Construction of 50 Nos. of Rain Water Recharge pits at ARP Camp, Thiruvananthapuram	50
		Construction of 50Nos. of Rain pits at ARP Camp, Thiruvananthapuram	50
3	SAP Camp	Developing and renovating the exiting Rain Water Harvesting and Flood Moderation Pond (1976500 litres capacity)	1
		Construction of 200Nos of rain water Recharge pits.	200
		Construction of 200Nos. of Rain pits.	200
		Supply and Fixing of 1 No. of Syntex tank(5000 ltr)	1
4	SAP Quarters	Construction of 1 No. of Open well at SAP, Quarters Area, Peroorkada, Thiruvananthapuram	1
		Construction of 100Nos. of Rain Water Recharge pit	100
		Construction of 100Nos. of Rain pits.	100
		Supply and Fixing 1 No. of ofSyntex tank(5000 ltr capacity)	1
5	Kerala Legislative Assembly Complex	**Museum**	
		Renovation of 1 No. of existing 5.00 lakhs litre capacity RWH units of Museum building	1
		Cleaning of the existing well	1
		Construction of 1 No. of rain pit	1
		At Secretary's Residence	
		Renovation of 1 No. of existing 10,000.00 litre capacity RWH units	1
		At Deputy Speaker's Residence	
		Renovation of 1 No of existing 10,000.00 litre capacity RWH units	1
		Construction of 1 No. of rain pit	1
		At Hon'ble Speaker's Bungalow	
		Renovation of 1 No. of existing 10,000.00 litre capacity RWH units	1
		At Main building premises	
		Renovation of 1 No.of existing 5.00 lakhs litre capacity RWH units	2
		Construction of 10Nos. of Recharge pit pit	10

6	Govt. Ayurveda College	Renovation of existing 8 Nos. of RWH unit at the premises of Govt Ayurveda College - Thiruvananthapuram	1
		Construction of 30Nos. of rain water Recharge pit	30
		Renovation works 1No. existing well	1
		Construction of 100Nos. of Rain pits	100
7	SMV High School	Construction of 4Nos. of RWH units at SMV High School, Mg Road, Thiruvananthapuram	4
		Construction of 103Nos.Rain Water Recharge pits.	103
		Renovation of 1No.of existing open well	1
	Girls High School And Higher Secondary school premises cotton hill	Renovation of 1 No. of existing RWH unit at Govt. Girls high school and higher secondary school premises Cotton Hill, Thiruvananthapuram	1
		Construction of 120Nos. of Rain Water Recharge pits.	120
		Renovation of 1 No. of existing open well	1
8	Girls Pre-Primary & Primary School Cotton Hill	Providing RWH facilities at govt. Girls High School And Higher Secondary school premises, Manakkadu, Thiruvananthapuram	1
9	Girls High School And Higher Secondary school premises, Manakkadu	Renovation of 2Nos. of existing RWH units at the premises of the school	2
		Renovation of 1No. of existing open well	1
		Construction of 55 Nos. of Recharge pits.	55
10	Govt Teachers Training Institute, Manakkadu	Renovation of the existing RWH system	1
		Construction of 100 Nos.of Rain Water Recharge pits	100
		Renovation of 1No.of existing open well	1

b) Ground Water Department (GWD)

IMPLEMENTATION PLAN AT A GLANCE

Implementation Year	No of DWR	No of RCP	No BWR	Estimated Cost In Lakhs
2020-21	76	43	50	170.75
2021-22	89	44	57	193.25
2022-23	97	50	60	209.5
2023-24	108	52	59	220.75
2024-25	97	52	76	231
GRAND TOTAL				**1025.25**

*DWR – Dug Well Recharge
*RCP – Recharge Pits
*BWR – Bore well Recharge

Annexure-III a

Action Plan for Artificial Groundwater Recharge in OCS Blocks during 2021-22

Sl. No	District	Name of the Block	*DWR	*RCP	*BWR
1	Ernakulam	Parakkadavu	1	1	0
2	Idukki	Elam Desom	1	1	2
3	Idukki	Kattappana	1	1	2
4	Idukki	Nedumkandam	1	1	2
5	Kannur	Kannur	3	1	2
6	Kannur	Panur	3	2	1
7	Kannur	Thalassery	3	1	2
8	Kasargod	Kanhangad	3	2	1
10	Kasargod	Karadka	2	1	2
9	Kasargod	Kasaragod	3	1	1
11	Kasargod	Manjeswar	2	1	1
12	Kollam	Mukhathala	2	3	2
13	Kozhikode	Ballussery	3	1	1
14	Kozhikode	Kunnamangalam	2	1	1
15	Malappuram	Kondotty	2	1	1
16	Malappuram	Kuttippuram	2	1	1
17	Malappuram	Malappuram	2	1	1
18	Malappuram	Thanur	2	1	1
19	Malappuram	Thriurangadi	2	2	1
20	Malappuram	Tirur	2	2	1
21	Malappuram	Vengara	2	2	1
22	Palakkad	Chittur	3	1	1
25	Palakkad	Malampuzha	2	2	2
23	Palakkad	Pattambi	3	1	1
24	Palakkad	Thrithala	2	1	2
26	Thiruvananthapuram	Athiyannur	3	1	1
27	Thiruvananthapuram	Chirayinkil	2	1	1
30	Thiruvananthapuram	Nedumangad	3	1	1
28	Thiruvananthapuram	Parassala	3	1	1
29	Thiruvananthapuram	Pothencode	2	1	1
31	Thrissur	Chowannur	3	1	5
32	Thrissur	Mathilakom	3	2	4
33	Thrissur	Thalikkulam	3	2	3
	Total Number of Structures		**76**	**43**	**50**
	Estimated Unit Cost in Lakhs		**1**	**0.75**	**1.25**
	Total Amount Expected		**76**	**32.25**	**62.5**

Annexure-III b

Action Plan for Artificial Groundwater Recharge in OCS Blocks during 2021-22

Sl. No	District	Name of the Block	DWR	RCP	BWR
1	Ernakulam	Parakkadavu	2	2	0
2	Idukki	Elam Desom	1	1	2
3	Idukki	Kattappana	1	1	2
4	Idukki	Nedumkandam	0	1	2
5	Kannur	Kannur	4	1	2
6	Kannur	Panur	2	1	3
7	Kannur	Thalassery	2	1	1
8	Kasargod	Kanhangad	3	1	2
10	Kasargod	Karadka	3	2	1
9	Kasargod	Kasaragod	3	1	1
11	Kasargod	Manjeswar	3	2	1
12	Kollam	Mukhathala	2	2	3
13	Kozhikode	Ballussery	3	1	1
14	Kozhikode	Kunnamangalam	2	1	1
15	Malappuram	Kondotty	1	1	1
16	Malappuram	Kuttippuram	2	2	1
17	Malappuram	Malappuram	2	1	1
18	Malappuram	Thanur	2	2	1
19	Malappuram	Thriurangadi	2	1	1
20	Malappuram	Tirur	2	2	1
21	Malappuram	Vengara	2	1	1
22	Palakkad	Chittur	4	1	2
25	Palakkad	Malampuzha	4	1	2
23	Palakkad	Pattambi	4	1	2
24	Palakkad	Thrithala	3	2	2
26	Thiruvananthapuram	Athiyannur	5	1	2
27	Thiruvananthapuram	Chirayinkil	4	1	2
30	Thiruvananthapuram	Nedumangad	3	1	1
28	Thiruvananthapuram	Parassala	3	2	1
29	Thiruvananthapuram	Pothencode	3	1	1
31	Thrissur	Chowannur	4	2	5
32	Thrissur	Mathilakom	4	1	4
33	Thrissur	Thalikkulam	4	2	4
	Total Number of Structures		**89**	**44**	**57**
	Estimated Unit Cost in Lakhs		1	0.75	1.25
	Total Amount Expected in Lakhs		89	33	71.25

Annexure-III c

Action Plan for Artificial Groundwater Recharge in OCS Blocks during 2022-23

Sl. No	District	Name of the Block	DWR	RCP	BWR
1	Ernakulam	Parakkadavu	2	3	1
2	Idukki	Elam Desom	1	1	4
3	Idukki	Kattappana	0	0	2
4	Idukki	Nedumkandam	1	1	2
5	Kannur	Kannur	4	2	1
6	Kannur	Panur	3	2	2
7	Kannur	Thalassery	3	2	2
8	Kasargod	Kanhangad	3	2	2
10	Kasargod	Karadka	3	2	1
9	Kasargod	Kasaragod	3	2	1
11	Kasargod	Manjeswar	3	2	1
12	Kollam	Mukhathala	2	3	2
13	Kozhikode	Ballussery	3	1	1
14	Kozhikode	Kunnamangalam	2	1	1
15	Malappuram	Kondotty	2	2	1
16	Malappuram	Kuttippuram	2	1	1
17	Malappuram	Malappuram	2	1	1
18	Malappuram	Thanur	2	1	1
19	Malappuram	Thriurangadi	3	1	1
20	Malappuram	Tirur	3	1	1
21	Malappuram	Vengara	3	1	1
22	Palakkad	Chittur	3	2	2
25	Palakkad	Malampuzha	4	1	2
23	Palakkad	Pattambi	4	1	3
24	Palakkad	Thrithala	4	1	3
26	Thiruvananthapuram	Athiyannur	4	2	1
27	Thiruvananthapuram	Chirayinkil	4	2	2
30	Thiruvananthapuram	Nedumangad	4	1	2
28	Thiruvananthapuram	Parassala	4	2	2
29	Thiruvananthapuram	Pothencode	4	1	2
31	Thrissur	Chowannur	4	1	3
32	Thrissur	Mathilakom	4	2	4
33	Thrissur	Thalikkulam	4	2	4
	Total Number of Structures		**97**	**50**	**60**
	Estimated Unit Cost in Lakhs		1	0.75	1.25
	Total Amount Expected		97	37.5	75

Annexure-III d

Action Plan for Artificial Groundwater Recharge in OCS Blocks during 2023-24

Sl. No	District	Name of the Block	DWR	RCP	BWR
1	Ernakulam	Parakkadavu	2	2	1
2	Idukki	Elam Desom	1	1	4
3	Idukki	Kattappana	1	0	2
4	Idukki	Nedumkandam	1	1	2
5	Kannur	Kannur	3	2	2
6	Kannur	Panur	4	2	1
7	Kannur	Thalassery	4	1	2
8	Kasargod	Kanhangad	4	2	2
10	Kasargod	Karadka	4	2	1
9	Kasargod	Kasaragod	4	2	1
11	Kasargod	Manjeswar	4	2	1
12	Kollam	Mukhathala	2	3	2
13	Kozhikode	Ballussery	3	1	1
14	Kozhikode	Kunnamangalam	3	1	1
15	Malappuram	Kondotty	3	2	1
16	Malappuram	Kuttippuram	3	2	1
17	Malappuram	Malappuram	3	2	1
18	Malappuram	Thanur	3	2	1
19	Malappuram	Thriurangadi	3	1	1
20	Malappuram	Tirur	3	1	1
21	Malappuram	Vengara	2	2	1
22	Palakkad	Chittur	4	4	3
25	Palakkad	Malampuzha	4	2	4
23	Palakkad	Pattambi	4	2	3
24	Palakkad	Thrithala	4	2	3
26	Thiruvananthapuram	Athiyannur	4	1	2
27	Thiruvananthapuram	Chirayinkil	4	1	1
30	Thiruvananthapuram	Nedumangad	4	1	2
28	Thiruvananthapuram	Parassala	4	1	1
29	Thiruvananthapuram	Pothencode	4	1	2
31	Thrissur	Chowannur	4	1	2
32	Thrissur	Mathilakom	4	1	3
33	Thrissur	Thalikkulam	4	1	3
	Total Number of Structures		**108**	**52**	**59**
	Estimated Unit Cost in Lakhs		1	0.75	1.25
	Total Amount Expected		108	39	73.75

Annexure-III e

Action Plan for Artificial Groundwater Recharge in OCS Blocks during 2024-25

Sl. No	District	Name of the Block	DWR	RCP	BWR
1	Ernakulam	Parakkadavu	2	2	1
2	Idukki	Elam Desom	1	1	2
3	Idukki	Kattappana	1	0	2
4	Idukki	Nedumkandam	1	1	2
5	Kannur	Kannur	3	2	2
6	Kannur	Panur	3	2	2
7	Kannur	Thalassery	3	2	2
8	Kasargod	Kanhangad	4	2	2
10	Kasargod	Karadka	4	1	2
9	Kasargod	Kasaragod	4	2	2
11	Kasargod	Manjeswar	3	1	2
12	Kollam	Mukhathala	2	3	2
13	Kozhikode	Ballussery	3	1	2
14	Kozhikode	Kunnamangalam	3	1	2
15	Malappuram	Kondotty	2	2	2
16	Malappuram	Kuttippuram	3	2	2
17	Malappuram	Malappuram	3	2	2
18	Malappuram	Thanur	3	2	3
19	Malappuram	Thriurangadi	2	2	2
20	Malappuram	Tirur	3	1	2
21	Malappuram	Vengara	2	1	2
22	Palakkad	Chittur	3	1	3
25	Palakkad	Malampuzha	3	1	2
23	Palakkad	Pattambi	3	1	3
24	Palakkad	Thrithala	3	2	2
26	Thiruvananthapuram	Athiyannur	3	2	3
27	Thiruvananthapuram	Chirayinkil	4	3	2
30	Thiruvananthapuram	Nedumangad	4	2	3
28	Thiruvananthapuram	Parassala	4	2	3
29	Thiruvananthapuram	Pothencode	3	1	3
31	Thrissur	Chowannur	4	2	4
32	Thrissur	Mathilakom	4	1	3
33	Thrissur	Thalikkulam	4	1	3
	Total Number of Structures		**97**	**52**	**76**
	Estimated Unit Cost in Lakhs		**1**	**0.75**	**1.25**
	Total Amount Expected in Lakhs		**97**	**39**	**95**

c) Kerala Water Authority (KWA)

KWA has plans to implement RWH in feasible places. Roof top rainwater harvesting is now practiced in only one or two buildings and water treatment plants of KWA and we have plans to adopt this to the maximum possible extent in buildings owned by KWA. For this structures with roof top area exceeding 100 m^2 has been identified and action is planned to implement rooftop rain water harvesting in all these buildings within a span of two years. The Action plan is indicated below.

Name of Office	Name of District	Area of available roof tops >100m2	Approximate Qty of Rain Water that can be harvested (Litre/year)	Time Line
WS Division, Attingal	Thiruvananthapuram	3977	3579300	May 2020
Sewerage Division Patoor	Thiruvananthapuram	2275	2047500	May 2020
WS Division, Neyyatinkara	Thiruvananthapuram	1706.25	1535625	May 2020
Project Div Kollam	Kollam	1576	1418400	Sep 2020
PHD Kottarakkara	Kollam	7589	6830100	Sep 2020
PH Division Thiruvalla	Pathanamthitta	3830	3447000	Sep 2020
PH Division Pathanamthitta	Pathanamthitta	750	675000	Sep 2020
Project Adoor	Pathanamthitta	1150	1035000	Sep 2020
PHD Kottayam	Kottayam	3852	3466800	Jan 2021
Project Kottayam	Kottayam	1800	1620000	Jan 2021
PHD Kaduthuruthy	Kottayam	1252	1126800	Jan 2021
PH Division Thiruvalla	Alappuzha	800	720000	Jan 2021
PHD Alappuzha	Alappuzha	16079	14471100	Jan 2021
PHD Muvattuppuzha	Ernakulam	3962	3565800	May 2021
PH Division Thodupuzha	Idukki	8829	7946100	May 2021
Project DivNattika	Thrissur	3211	2889900	May 2021
PH. Dn. Thrissur	Thrissur	5180	4662000	May 2021

PH. Dn. Irinjalakkuda	Thrissur	2081	1872900	May 2021
Project DivNattika	Palakkad	750	675000	May 2021
PH. Dn. Palakkad	Palakkad	3833	3449700	Sep 2021
PHD Shornur	Palakkad	6953	6257700	Sep 2021
PH Division, Vadakara	Kozhikkode	2666	2399400	Sep 2021
PH Division, Kozhikode	Kozhikkode	34905.21	31414689	Sep 2021
PH Division, S.Bathery	Wayanad	6644.21	5979789	Sep 2021
P.H Division, Malappuram	Malappuram	2840	2556000	Dec 2021
P.H Division, Edappal	Malappuram	2480	2232000	Dec 2021
WS Division, Kannur	Kannur	23758	21382200	Dec 2021
WS Division, Thaliparamba	Kannur	13018.6	11716740	Dec 2021

IV. Conclusion.

While Kerala is considered to be a water surplus State, the irony is that the State regularly faces acute water scarcity in the summer months. Much of this can be attributed to poor water management practices and limited water conservation measures. Rain Water Harvesting, as a water conservation measure, needs to be popularized by the State as a means of involving the public in effective water management.

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