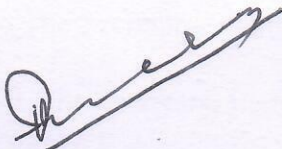


ACTION PLAN FOR THE REJUVENATION OF POLLUTED RIVER STRETCH

KORAYAR AT KANJIKODE

Submitted by District Level Technical Committee (Palakkad District)

Before the River Rejuvenation Committee

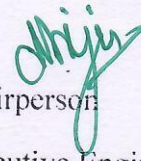


Member and Convenor

Environmental Engineer

Kerala State Pollution Control Board

Palakkad



Chairperson

Executive Engineer

Minor Irrigation Division

Palakkad



EXECUTIVE SUMMARY

A District Level Technical Committee (Palakkad District) was constituted for preparing Draft Action Plan for the Rejuvenation of polluted river stretches. The polluted river stretches in the district were Kalpathypuzha at Kalpathy and Korayar at Kanjikode. The members of the committee are as follows.

1. Executive Engineer, Minor Irrigation, Palakkad: Chairperson
2. Joint Director, LSGD, Palakkad
3. Environmental Engineer, District Office, Kerala State Pollution Control Board : Member & Convenor
4. General Manager, District Industries Centre: Member
5. Manager, KINFRA, Palakkad
6. The District Co-ordinator, District Suchitwa Mission : Member
7. The Secretary, Palakkad Municipality : Member
8. The Secretary, Malampuzha Grama Panchayat
9. The Secretary, Akathethara Grama Panchayat
10. The Secretary, Pudukkottai Grama Panchayat
11. The Secretary, Elapully Grama Panchayat
12. The Secretary, Kozhinjampara Grama Panchayat
13. The Secretary, Vadakarapathy Grama Panchayat
14. Divisional Environment and House Keeping Manager, Railway Authority, Palakkad

The action plan for Korayar at Kanjikode was prepared after several deliberations. The committee hereby submits the draft action plan before the River Rejuvenation committee constituted by the Govt. of Kerala. Dated this the 10th of September, 2025.

The first meeting of District Level Technical Committee (DLTC) on Polluted River Stretch (As per order of Hon'ble NGT in OA 673 of 2018) was held on 21.12.2023 through video

conference. Subsequently, Kerala State Pollution Control Board (KSPCB) collected samples from these stretches and analysed. A joint inspection in major polluted areas of Korayar was conducted with Minor Irrigation department officials and KSPCB officials for detecting the main sources of pollution on river stretches. The Korayar River, a tributary of the Kalpathy River which eventually joins the Bharathapuzha, is a water resource for Palakkad District. The 21.16 km stretch between Menonpara Bridge in Vadakarapathy Grama Panchayat and Mukkai in Palakkad Municipality has been identified by the Central Pollution Control Board (CPCB) as a polluted river stretch. The river has suffered degradation due to untreated sewage discharge from residential colonies and labour quarters, industrial effluents, illegal sand mining, and indiscriminate dumping of solid waste.

CHAPTER 1

INTRODUCTION

Central Pollution Control board (CPCB) is monitoring the water quality of aquatic resources all over the country at 3500 locations in 29 States and 6 Union Territories under National Water Monitoring Programme. The present monitoring network covers 2541 locations on the surface water and 989 on Wells (ground water). Water samples are being analyzed for 28 parameters consisting of physicochemical and bacteriological parameters for ambient water samples apart from the field observations. Besides this, 9 trace metals and 15 pesticides are analyzed in selected samples. Bio-monitoring is also carried out on specific locations.

OBJECTIVES OF WATER QUALITY MONITORING UNDER NWMP

- Rational planning of pollution control strategies and their prioritization;
- To assess nature and extent of pollution control needed in different water bodies or their part;
- Assimilative capacity of a water body thereby reducing cost on pollution control;
- The fitness of water for different uses;
- To evaluate effectiveness of pollution control measures already in existence;
- Water quality trend over a period of time;
- To understand the environmental fate of different pollutants

The water quality monitoring results obtained during the years indicate that the organic and bacterial contamination continue to be critical in water bodies. This is mainly due to discharge of domestic wastewater mostly in untreated form from the urban centres of the country. The municipal corporations and other urban local bodies at large are not able to treat increasing load of municipal sewage flowing into water bodies without treatment. Secondly the receiving water bodies also do not have adequate water for dilution. Therefore, the oxygen demand and bacterial pollution is increasing day by day. This is mainly responsible for water borne diseases. The water quality monitoring results were analysed with respect to indicator of oxygen consuming substances (Bio Chemical Oxygen Demand or BOD) and indicator of pathogenic bacteria (total coliform and faecal coliform).

As part of a periodic assessment of water quality of rivers in the country, CPCB identifies polluted river stretches (PRS) considering Bio Chemical Oxygen Demand (BOD) as a criteria parameter. The polluted river stretches have been divided into five priority categories.

Priority I –Locations exceeding BOD concentration 30 mg/l

Priority II –BOD concentration 20-30 mg/l

Priority III –BOD concentration 10-20 mg/l

Priority IV –BOD concentration 6-10 mg/l

Priority V –BOD concentration 3-6 mg/l

CPCB in 2018 identified 351 polluted river stretches in India. The assessment of water quality for identification of polluted river stretches found that 31 states and Union territories (UT) had rivers and streams that did not meet the water quality criteria. These states-UTs have to submit their action plans for improving the quality of water. Maharashtra has the highest number of polluted river stretches (53), followed by Assam (44), Madhya Pradesh (22), Kerala (21), Gujarat (20), Odisha (19) and West Bengal and Karnataka (17). Out of the 21 polluted rivers (Total 44 Kerala has) identified in Kerala Bharathapuzha stretch along Pattambi made it to the list from Palakkad district. In the study "*Polluted river stretches for restoration of water quality -2022*" the number of polluted river stretches has decreased from 351 in the year 2018 to 311. In Palakkad, the river Bharathapuzha and Bhavani river were delisted and new polluted river stretches Korayar and Kalpathypuzha are added. As per the water quality report by CPCB-*Polluted River Stretches for restoration of water quality 2022*, the new polluted river stretches are stretches of **Korayar River** flowing beside Kanjikode industrial area and joining Narakampilly River and **Kalpathy River**, confluence of Walayar River, Korayar River, Varattar and Malampuzha River, flowing mainly through Palakkad Municipality area.

OA 673/2018 -HON'BLE NATIONAL GREEN TRIBUNAL (NGT)

Hon'ble National Green Tribunal (NGT) in the matter of O.A, No. 673/2018 in the matter of News item published in 'The Hindu' authored by Sri. Jacob Koshy-Titled '*More river stretches are now critically polluted in India CPCB*' passed orders on 20.09.2018, 19.12.2018, 08.04.2019 and 06.12.2019. All states and Union Territories are directed to prepare action plans within two months

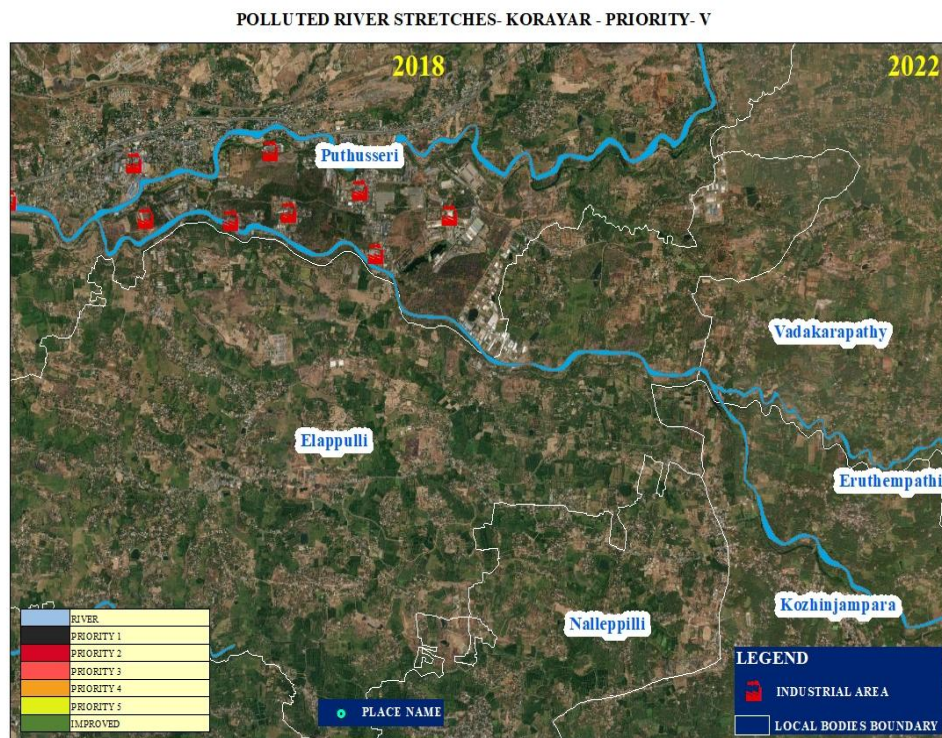
for bringing all the polluted river stretches to be fit at least for bathing purposes (i.e., BOD<3mg/L & FC <500MPN/100ml) within six months from the date of finalization of the action plans. River Water is considered to be fit for bathing when it meets the criteria of having Chemical Oxygen Demand (COD) (800) <30mg/l, Dissolved Oxygen more than 50mg/l and L and Faecal Coliform Bacteria to be less than 500 MPN/100ml.

In spite of directions in several Judgments, discharge of untreated sewage and Industrial effluents in rivers and water bodies is continuing at a large scale. Sewage Treatment capacity is disproportionate to the sewage generated.

CHAPTER 2

KORAYAR AT KANJIKODE

The Korayar River originates from the confluence of the Varattayar at Menonpara and flows through Vadakarapathy, Elapully, Pudussery, Kozhinampara, Marutharoad, and Palakkad Municipality before joining the Kalpathy River at Mukkai. The river eventually drains into the Bharathapuzha, one of Kerala's major rivers. The 21.16 km stretch under consideration passes through both rural, urban and industrial settlements and supports irrigation, agriculture, and local livelihoods.



Currently, the river is heavily polluted due to untreated domestic sewage, industrial effluents, illegal sand mining, and solid waste dumping. Siltation, accumulation of aquatic weeds, and growth of unwanted vegetation have reduced the river's width and carrying capacity. Water flow is obstructed at bridges and check dams, further affecting water quality. The Korayar River is undergoing severe ecological degradation due to multiple human and environmental factors. Untreated sewage from residential colonies and labour quarters, along with industrial effluents,

directly enter the river, contributing to high pollution loads. Illegal sand mining has destabilised the riverbanks, while indiscriminate dumping of solid waste, especially near bridges, has further worsened conditions. Over time, siltation and the unchecked growth of aquatic weeds have narrowed the river channel, reducing its carrying capacity and increasing the risk of flooding during monsoons. Damaged check dams and diversion structures have diminished the effectiveness of water storage and regulation, and many irrigation canals remain silted or in poor condition, impacting agriculture. Collectively, these challenges have left the Korayar River polluted, ecologically imbalanced, and unable to fully support the communities depending on it.



Fig: Korayar near Korayar bridge



Fig: Korayar at Pudussery



Fig: Korayar at Arangottukulambu

ANALYSIS REPORT OF KORAYAR IN THE YEAR 2024

Sampling Month	Dissolved O ₂ (mg/L)	pH	BOD (mg/L)	Total Coliform (MPN/100ml)	Fecal Coliform (MPN/100ml)	Fecal Streptococci (MPN/100ml)	Class
January	6.4	7.9	2.8	310	100	1.8 (BDL)	B
February	6.5	8.23	2.5	400	110	1.8 (BDL)	B
March	2.5	7.8	7	630	350	58	E
April	No Water Flow						
May	No Water Flow						
June	4.3	7.4	4.2	210	110	1.8 (BDL)	D
July	5.3	8.1	1.8	430	350	21	B
August	7.2	8	1.4(BDL)	580	400	40	C
September	6.7	7.3	3	1000	920	430	C
October	7.8	8.2	2.2	500	300	20	B
November	6.8	8.26	2.9	300	200	100	B
December	7.1	7.4	1.6	400	200	40	B

ANALYSIS REPORT OF KORAYAR IN THE YEAR 2025 (January-June)

Sampling Month	Dissolved O ₂ (mg/L)	pH	BOD (mg/L)	Total Coliform (MPN/100ml)	Fecal Coliform (MPN/100ml)	Fecal Streptococci (MPN/100ml)	Class
January	8.4	8.3	2	400	200	40	B
February	7.1	8.2	2	1000	500	60	C
March	5	8	3	500	300	60	B
April	4.1	7.4	3	1500	800	700	
May	3.3	8.5	1.3	5000	2000	240	E
June	7.2	8	2.2	3100	1600	360	C

CHAPTER 3

ACTION PLAN FOR KORAYAR AT KANJIKODE

No	Activity (Ongoing/Proposed)	Implementing agency	Plan/ Progress in Detail	Estimated Expenditure in Lakhs	Source of Fund	Time line	Expected Outcome
1	Establishment and Modernisation of MSW treatment Plant- (Biodegradable waste) and Installing house hold and community level solid/ Liquid waste management units	Vadakara pathy Grama Panchayat	100% works completed installation of thumboorm uzhi plant is completed. Yet to start operation	Rs. 14 Lakhs		March 2026	Better SWM in Panchayat
		Kozhinjampara Grama Panchayat	Purchase of vehicle. Vehicle Booked	Rs.1400000	Own fund	31.03. 2026	
			Thumboor muzhi model aerobic composting Plant, Purchase of biobin for individual beneficiaries Tender Completed. Soak pit construction - Included in action plan for 2025-26 in MGNREG Scheme 278 units	Thumboorm uzhi-Rs. 400000/- BIO BIN-Rs. 574000/- Rs. 55.6 Lakhs	CFC Fund Central Fund		

		Puduserry Grama Panchayat	Project on implementation level- Tender completed	Rs. 6165000/-	CFC Tied, Project Bharath Fund, Suchitwa Mission	March 2026	
		Elappully Grama Panchayat	House hold compost bin. Sent for DPC approval	RS. 6040800/-	CFC Tied	Dec 2026	
			Conveyor belt purchase. Tender work in progress	Rs. 200000/-	CFC Tied	6 months (Before Jan 2025)	Conveyor belt purchase. Tender work in progress
2	Material collection Facility (Solid Waste Management)	Kozhinjampara Grama Panchayat	Column level. 50% Works completed. Roof Concreting, electrification remaining.	Rs. 3089000/-	Plan fund, CFC, own fund	31.03. 2026	
		Puduserry Grama Panchayat	Tender in progress	Rs. 5000000/-	Centrally sponsored scheme fund- Rs. 1600000/-, Receipts from other LSG's (District Panchayat) – Rs.	2025-26	

					3300000/-, Development fund (CFC tied grant) – Rs. 100000/-		
		Elappully Grama Panchayat	MCF with working area 3184 sq. ft is operational	MCF electrification Rs. 295860/-	CFC Tied	Dec 2025	
3	Door to Door Collection and Transportation of MSW	Kozhinjampara Grama Panchayat	Purchase of vehicle Vehicle booked	Rs. 1400000/-	Own Fund	31.03. 2026	
		Vadakara pathy Grama Panchayat	Ongoing process				
		Puduserry Grama Panchayat	Ongoing Process				
		Elappully Grama Panchayat	Transportation of MSW Uniform and protective equipments to Haritha Karma Sena	Rs. 800000/-	CFC tied	Ongoing processes	
4	Regulating activities in flood plain zone protection and management of flood plain zone including side bank protection and greenery development	Vadakara pathy Grama Panchayat	Greenery and side bank protection activities are being done through MGNREGS	NA	NA	March 2026	
		Elappully Grama Panchayat	cleaning of Brushwood and three	Rs. 300000/-	MGNREGA	Jan 2026	

			Check dams project. Out of which one is completed.				
5	Issues relating to maintaining minimum flow of river, including removal of light jungles and muddies from river courses	Irrigation department	DPR Prepared and will be submitted soon	Total proposed estimate amount:- 900 Lakhs, of which 240 Lakhs are provided for Korayar River Stretch in area under Vadakarapathy Panchayat; 210 Lakhs are provided for Korayar River Stretch in area under Pudussery Panchayat; 390 Lakhs are provided for Korayar River Stretch in area under Elapully Panchayat	Proposed under 2702-01-800-86P(Restoring polluted stretches of river basin in NGT Order) (AS pending)		Rejuvenate the Korayar river and to restore its ecological health while ensuring sustainable water use for communities and agriculture
		Vadakara pathy Grama Panchayat	Ongoing. Watershed management programs are going on through MGNREGS . Removal of muddies, light jungles are yet to start.	-		2026 march	

6	Monitoring of river water quality	KSPCB	Monthly sampling and analysis of water quality. Additional sampling from upstream locations to identify possible polluting sources			Continuing process (6 month)	
7	Faecal Sewage Treatment Plant and Septage Treatment plant	Pudussery Grama Panchayat	Work in progress	Rs. 6000000/-	Centrally sponsored scheme fund- Rs. 4200000/- , Development fund (CFC tied grant)- Rs.1800000/-	2025-26	
8	Green Protocol implementation in all offices institution & public function	Vadakara pathy Grama Panchayat	100% of Works Completed and ongoing	Rs. 1.5 Lakhs	Plan general	2026 march	Better working places
		Elappully Grama Panchayat	Adheres to green protocol in every public functions within panchayat.	Bottle booth in public places- Rs. 100000/-	CFC Tied	Dec 2025	