

**Action Plan
for
Rejuvenation of River Kaljani
Alipurduar, West Bengal**

Priority – V

**Nodal Agency
Municipal Engineering Directorate
Department of Urban Development & Municipal Affairs
Government of West Bengal**

**Approved by
River Rejuvenation Committee, West Bengal**
(constituted in compliance to the order of the Hon'ble National Green Tribunal)

**Submitted to
Central Pollution Control Board, Delhi**

SEPTEMBER, 2020

Executive Summary

Sl.	Description of Item	Details
1.	Name of the identified polluted river	RiverKaljani
2.	Identified polluted stretch of the river	Bitala to Alipurduar
3.	Total length of the polluted river	30 KM (approximately)
4.	Towns in the catchment of the polluted stretch of the river	Hamiltonganj, Alipurduar
5.	Is river is perennial	Perennial
6.	No. of drains contributing to pollution and names of major drains	Eighteen (18)
	(1)Arabindanagar, Ward No.- 01 (2) Near Crematorium, Ward No.-01 (3)Near Dima Bridge, Ward No. 01 & 08 border (4) Hatathcolony, Ward No.- 08 (5) Bidhanpalli, Ward No.- 09 (6) Near Crematorium, Ward No.- 10 (7) Uttarpara, Ward No.- 10 (8) Near Asutosh Club, Ward No.- 11 (9) Palash Bari, Ward No.-11 (10) SantidhamAsram, Ward No.- 11 (11) Near Babupara Rail Bridge, Ward No.- 12 (12) Near BM Club, Ward No.- 18 (13) Sanjay Colony, Ward No.- 18 (14-18) Another five small stretches	
7.	Whether 'River Rejuvenation Committee' (RRC) constituted by the State Govt./UT Administration and If so, Date of constitution of 'RRC'	Yes. 07.01.2019
8.	Major Towns on the banks of the river with population	Alipurduar Population = 65,232 (Census, 2011)
a.	Total water consumption and sewage generation in MLD	Total water consumption =15.43 MLD Total sewage generation = 9.33 MLD
b.	Total no. of existing STPs and the totalcapacities in MLD	Nil
c.	Gaps in sewage treatment in MLD and no. of towns not having STPs	Town=1, Gap=9.33 MLD
d.	Total MSW generation in TPA	8030 TPA
e.	Existing treatment and disposal facilities and total capacity	NIL
9.	Major industrial estates located with total no. of industries	NIL
a.	Total no. industries discharging wastewater directly/indirectly in to the river	NIL
b.	Total water consumption	NIL
c.	Total industrial effluent generation	NIL
d.	No. of industries having captive ETPs and their treatment capacity	NIL
e.	No. of CETP's and their treatment capacity	NIL
f.	Gap in industrial wastewater treatment	NIL
g.	Total HW generation in TPA in the catchment area	All hazardous waste generating industries are disposing their hazardous wastes through one (1) Common Hazardous Waste Treatment, Storage and Disposal Facility operating at Haldia.
h.	Existing HW Treatment and Disposal Facilities and total capacity with life span	
10.	Action plan includes mainly covering aspect such	Whichever applicable has been taken

	as appropriate management of sewage, rain water harvesting, measures for regulating ground water use, protection and management of flood plain zone, plantation on both sides of the river, setting up of bio-diversity parks etc., as per Hon'ble NGT Orders dated 20.09.2018 and 19.12.2018	into account.
11.	Responsible Organization (s) for implementation of proposed action plans (Please enclose details as annexure)	Table-6
12.	Nodal Agency	Municipal Engineering Directorate Department of Urban Development and Municipal Affairs, Govt. of West Bengal BikashBhavan, Salt Lake, Kolkata- 700091

Proposed Mechanism for execution of action plans:

This action plan implementation is to be monitored by the River Rejuvenation Committee (RRC) through meetings every month. The Central Monitoring Committee constituted by the Hon'ble NGT under the Chairmanship of the Secretary, Ministry of Jal Shakti, GoI also holds meeting in every month with the Chief Secretary/Principal Secretary, Environment of the State to assess progress of work. Every month Monthly Progress Report will be sent to Ministry of Jal Shakti, GoI.

An Environment Monitoring Cell in the Office of the Chief Secretary, WB has been constituted to oversee the progress of work.

Expected deliverables with respect to achieving Goals :

Considering the importance of this river in the Alipurduar district with respect to the livelihood of the fishermen living on both sides of the river, rejuvenation of water quality of this river is extremely important as it is perennial river. For achieving this objective, generated municipal sewage should be treated and discharged only when they comply with the prescribed standards. It has to be ensured that no industrial effluents are discharged without being properly treated and complying the discharged standards prescribed under the Environment (Protection) Rules, 1986. **The target for water quality for the stretch is to be fit at least for bathing purposes (i.e. BOD < 3 mg/l and FC < 500 MPN/100 ml).**

**Response of the RRC, WB on comments of the
Task Team for ensuring compliance to Hon'ble NGT (PB), New Delhi in OA No 673/2018
held during 26.02.2020 and 11.06.2020**

Comments of Task Team	Corresponding response(s) of RRC_ West_Bengal
Latest water quality of PRS covering all parameters not provided	Monthly water quality data for BOD & FC for the years 2017, 2018 and 2019 provided. Moreover, latest water quality of river Kaljani covering all parameters also provided for the months of Jan-May 2020.
Projected population not taken into account for assessment of sewage generation.	Projected population till 2022 considered for assessment of sewage generation
Detailed gap analysis (Town wise/ ULB wise) w.r.t sewage, Industrial Effluent and Waste Management along with infrastructure available not included	Available information included in the report.
Aspects such as Utilization of treated waste water, Removal of encroachments not covered in action plan	Department of Urban Development and Municipal Affairs, GoWB has prepared a policy on use of treated wastewater. The policy is in final stage of preparation. The same will be sent to CPCB for approval.
Timelines for construction of STPs is exceeding March, 2021	Primary treatment of wastewater in the eighteen drains in Alipurduar town by providing screens, sedimentation tank, followed by disinfection by chlorination is proposed. The work will be completed by 30.06.2021.
Action plan to be revised adding latest water quality data for the polluted river, major drains with flow and other parameters.	Available information included in the report.
Map showing all the towns, tributaries, drains & industrial estates, contributing to pollution to be included	Available information included in the report.
Gap analysis with projection upto 15 years w.r.t sewage and Waste Management be included in action plan	9.33 MLD
Actions be initiated against industries functioning without captive ETPs or connection with CETPs.	All GPs and SPIs under consent administration of WBPCB are having captive ETPs.
Detailed gap analysis w.r.t present generation, projected generation existing infrastructure, existing capacity utilization, gap observed in the catchment for management of industrial effluent and waste management (solid waste, hazardous waste, C & D waste, bio-medical waste) need to be detailed in a separate table clearly.	Available information included in the report.

Background:

The West Bengal is the land of rivers. An intricate network of three major river basins (the Ganga, Brahmaputra and Subarnarekha) drain this State. Human settlement and related activities on the banks of the rivers have gradually increased over the years. Considering very reach ecological diversities of the water resources and the benefits of river network, most of the industrial development in this State took place near the rivers and the population density is also very high in these areas. As a result, these rivers receive liquid wastes like industrial discharges and municipal sewage and solid wastes are also dumped near the banks of the rivers.

Since early eighties, the West Bengal Pollution Control Board (WBPCB), in collaboration with the Central Pollution Control Board (CPCB), initiated monitoring of water quality of all important rivers, canals, ponds and reservoirs. The CPCB conducted water quality assessment based on available data have collected till 2016 to identify polluted river stretches in the entire country.

An application was registered before the Hon'ble National Green Tribunal, Principal Bench, New Delhi as O.A. No. 673/2018 on the basis of a news item dated 17.09.2018 in 'The Hindu' under the heading "More river stretches are now critically polluted: CPCB". The Hon'ble Tribunal was pleased to pass an order on 20.09.2018 identifying seventeen (17) polluted river stretches in the State of West Bengal and categorized these polluted stretches in five priority classes (Table-1). The Hon'ble Tribunal directed the State to prepare action plans for rejuvenation of these 17 polluted river stretches for bringing all the polluted river stretches to be fit at least for bathing purposes (i.e. BOD < 3 mg/l and FC < 500 MPN/100 ml). The Hon'ble NGT further directed on 19.12.2019 that action plans for rivers are to be reviewed by the CPCB before acceptance.

Table 1: Polluted River Stretches in West Bengal

Sl. No.	Priority	River	Polluted Stretch identified	BOD (mg/L) when identified as polluted
1	I	Vindiyadhari	Haroa Bridge to Malancha Burning Ghat	26.7 – 45.0
2	II	Mahananda	Siliguri to Binaguri	6.5 – 25
3	III	Churni	Santipur Town to Majhadia	10.3 – 11.3
4	III	Dwarka	Tarapith to SadhakBamdebGhat	5.6 – 17.0
5	III	Ganga	Tribeni to Diamond Harbour	5.0 – 12.2
6	IV	Damodar	Durgachak to Dishergarh	4.4 – 8.2
7	IV	Jalangi	Laal Dighi to Krishna Nagar	8.3
8	IV	Kansi	Midnapore to Ramnagar	9.9
9	IV	MathaBhanga	Madhupur to Gobindapur	8.5
10	V	Barakar	Kulti to Asansol	5.7
11	V	Dwarakeshwar	Bankura to Kushtia	1 – 5.6
12	V	Kaljani	Bitala to Alipurdwar	6.0
13	V	Karola	Jalpaiguri to ThakurerKamat	3.9
14	V	Mayurakshi	Suri to Durgapur	5.2
15	V	Rupnarayan	Kolaghat to Benapur	3.1 – 5.8
16	V	Silabati	Ghatal to Nischindipur	3.8
17	V	Teesta	Siliguri to Paharpur	3.3

River Rejuvenation Committee:

In compliance to the direction of Hon'ble National Green Tribunal, Principal Bench, New Delhi in respect of O.A. No. 673/2018, the Government of West Bengal constituted the River Rejuvenation Committee (RRC) for preparation of such action plans for effective abatement of pollution, rejuvenation, protection and management of the identified polluted River stretches, for bringing the polluted river stretches to be fit at least for bathing purposes and identified the following components for such action plan, although all the components may not be applicable for all the polluted river stretches:

1. Identification of polluting sources
2. Trade and Sewage Generated in the Catchment Area of Polluted River Stretch.
3. Functioning status of STPs/ETPs/CETP
4. Interception and Diversion of sewage carrying drains to the STP.
5. Solid Waste Management including quantification and characterisation of Solid Waste, Bio-Medical Waste Management, e-waste and processing facilities, quantification and characterisation of Solid Waste
6. Protection and management of Flood Plain Zones (FPZ)
7. Rain Water Harvesting, Ground Water Charging
8. Adopting good irrigation practices
9. Address issues relating to Ground Water Extraction
10. Maintaining minimum Environmental Flow of river and plantation on both sides of the river
11. Plantation on both sides of the river
12. Setting up of biodiversity parks on flood plains by removing encroachment.
13. Utilization of treated sewage so as to minimize extraction of Ground or Surface Water

The Member Secretary, West Bengal Pollution Control Board is the Chairman, RRC and the Chief Executive Officer, Kolkata Metropolitan Development Authority is the Member-Convenor, RRC. The Committee is functioning under the supervision and coordination of Principal Secretary, Environment Department, GoWB.

The main causes of the river water quality deterioration are (1) Discharge of industrial wastewater (2) Discharge of municipal wastewater and (3) Pollution from nonpoint sources. Any action plan for any river stretch to improve its water quality then is required to address these three issues and address them primarily. In West Bengal there are forty eight (48) Grossly Polluting Industries (GPIs) and four hundred (400) odd Seriously Polluting Industries (SPIs). All these industries are under Consent administration of the WBPCB. The WBPCB inspects the GPIs every month and SPIs periodically to assess the environmental performance of these industries. All these industries are having Effluent Treatment Plant(s) inside the premises and the industrial wastewater generated are treated in these ETPs before being discharged either in to the river / canal or to local water bodies (Ponds & Wetlands) or to municipal drains/public sewer those are channelized to the canals. The river stretches in the State run through habitations of wide varieties and human activities. The habitations on the banks of these rivers also generate large quantities of sewage water regularly which are also drained through various discharges channels in to these rivers. As the rivers are not of perennial nature, during lean periods the

water volume becomes less resulting in high pollution concentrations. Inadequacy in solid waste management facilities resulted in unscientific dumping of solid wastes on the banks and this is also a major source of river pollution. Since most of these rivers are having long stretches, agricultural runoffs also finally find their ways in to these rivers. The river water quality database of the WBPCB however shows no significant impact of such non-point source contribution in any of these river stretches.

Therefore, the action plan for river Kaljani need to be prepared for its catchment areas considering the discharges from industrial source, discharges from municipal outfalls, interception and diversion of sewage carrying drains to the STP, solid waste management, Bio-medical waste management, e-waste management, ground water management, rain water harvesting, ground water charging, maintaining minimum environmental flow of river, protection and management of Flood Plain Zones (FPZ), adopting good irrigation practices, plantation on both sides of the river, setting up of biodiversity parks on flood plains etc.

The RRC, WB sent the Action Plan for rejuvenation of river Kaljanito CPCB on 12.02.2020 and the Task Team in its 10th Meeting held on 26.02.2020 suggested some revision in the action. The RRC, WB approved the revised action in its 7th meeting held on 09.06.2020 and sent to CPCB on 09.06.2020 which was once again reviewed by the CPCB in its 12th Task Team meeting on 11.06.2020 and once again suggested some modifications.

Now, this action plan has been modified as per recommendation of the CPCB Task Team and the RRC, WB has approved this Action Plan in its 8th meeting held on 02.07.2020.

The River Kaljani:

Kaljani River is a tributary of Torsha river, originated in Bhutan at the foothills of the Himalayas and it flows from north to south via Bhutan & India and confluences with Torsha river after Coochbihar town. The stretch of this river that has been identified as “Polluted” is surrounding the town Alipurduar as it passes the town by its’ south west. The river is in non-tidal zone, receives fresh water supply from the Himalayas and municipal wastewater from the Alipurduar town round the year. BOD and Bacteriological count (Faecal Coliform) are the principal pollutants in this river stretch. The sources for this river is presented below.

Polluted stretch of river Kaljani:

The stretch of this river that has been identified as “Polluted” is Bitala to Alipurduar, about 30.0 km in length. The river is non tidal in nature and receives municipal wastewater from the Alipurduar town round the year. Bio-chemical Oxygen Demand (BOD) and Faecal Coliform (FC) are the principal pollutants in this river stretch. This river is strictly perennial. Usage of water in this stretch is mainly for purposes of agriculture and fishing.

Table-2: Polluted stretch of river Kaljani

SL. No.	Name of the rivers/streams	Details	Identified polluted stretches	BOD (mg/L) when identified	Prioritywise
1.	Kaljani	Kaljani River is a tributary of Torsha river, originated in Bhutan at the foothills of the Himalayas and it flows from north to south via Bhutan & India and confluences with Torsha river after Coochbihar town. The stretch of this river that has been identified as “Polluted” is surrounding the town Alipurduar as it passes the town by its’ south west. The river is in non-tidal zone, receives fresh water supply from the Himalayas and municipal wastewater from the Alipurduar town round the year.	Bitala to Alipurduar, about 30.0 km in length	6.0 mg/l	V



Figure 1: Map showing the River Kaljani and the Alipurduar Town

Major towns located on the bank of the polluted stretch:

Within the identified polluted river stretch, the major town located on the side of the river is the Alipurduar town. As of 2011 India census, Alipurduar had a population of 65,232. It is the largest town in Alipurduar district.

Water quality assessment of river Kaljani:

The water quality status of the river Kaljani is monitored by the West Bengal Pollution Control Board under the National Water Monitoring Programme on monthly basis at one location at Downstream of Alipurduar, Municipality Discharge Point (CPCB Station Code: 2524). The water quality of the river Kaljani during last three years (January 2017-December 2019) for two criteria pollutants (BOD & FC) is given in Table-3.

Table-3: Water quality of river Kaljani during 2017, 2018 & 2019

Sampling Location: River Kaljani, Downstream of Alipurduar, Municipality Discharge Point						
Months	BOD (mg/l)			FC (MPN/100 ml)		
	2017	2018	2019	2017	2018	2019
January	1.60	1.90	2.80	4000	5000	6000
February	2.30	2.40	2.60	3400	7000	5000
March	2.60	2.60	2.60	4000	8000	8000
April	1.00	2.60	2.80	9000	2700	3000
May	1.80	2.80	2.30	6000	5000	3400
June	2.80	2.40	1.80	5000	8000	2200
July	2.00	1.80	1.80	3000	7000	5000
August	1.70	2.60	1.80	6000	5000	3400
September	1.60	1.80	1.40	5000	8000	2600
October	6.00	3.20	1.20	90000	7000	3400
November	2.70	2.50	2.10	5000	9000	2300
December	1.30	1.30	1.80	7000	7000	5000
Range	1.0-6.0	1.3-3.2	1.2-2.8	3000-90000	2700-9000	2200-8000

Average	2.28	2.33	2.08	12283.33	6558.33	4108.33
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Latest water quality of river Kaljani:

Considering the impact of this river water to the ecosystem of the Alipurduar district and the livelihood of the fishermen living on both sides of the river, revival of the water quality of this river is extremely important on context of its utility as it is Perennial River. The ultimate goal for beneficial use of rivers will determine the level of actions to be taken for maintaining the water quality. The water quality of river Kaljani during the first five months in the year 2020 (Jan-May) are also depicted Table-4.

For achieving this objective, generated municipal sewage should be treated to meet the required standards for outdoor bathing as notified by the Ministry of Environment, Forests & Climate Change, GoI for “Primary Water Quality Criteria for Bathing Water” vide GSR 742I dated 25.09.2000. Also, the trade and other effluents generated within the catchment of river and generated from the catchment of the river which are ultimately joining and contributing to the pollution load in the river should be treated to meet the effluent discharge standards as stipulated above.

The target for water quality for the stretch is for organised outdoor bathing.

Table-4: Water quality of river Kaljani during Mar-Jul 2020

Sampling Location: River Kaljani, Downstream of Alipurduar, Municipality Discharge Point					
Parameter	Mar-2020	Apr-2020	May-2020	Jun-2020	Jul-2020
Temperature (°C)	26	28	28	28	28
pH	7.4	7.62	7.8	7.6	7.4
Dissolved Oxygen (mg/l)	7.8	7.8	6.9	7.3	7.1
BOD (mg/l)	2.4	1	1.8	1.7	1.6
COD (mg/l)	28	14	24	19	22
Total Coliform (MPN/100 ml)	Not Done	9000	11000	17000	14000
Fecal Coliform (MPN/100 ml)	Not Done	2700	3300	7000	8000
Total Dissolved Solids (mg/l)	280	64	82	96	86
Total Fixed Solids (mg/l)	Not Done	Not Done	Not Done	Not Done	150
Total Suspended Solids (mg/l)	110	18	50	80	76
Turbidity (NTU)	Not Done	Not Done	N.D.	Not Done	1.8
Conductivity (µs/cm)	136.2	82.42	120.2	119.2	118.1
Calcium (mg/l)	25.65	16.03	14.42	18.44	16.03
Magnesium (mg/l)	4.61	6.91	8.64	13.25	6.52
Total Hardness as CaCO ₃ (mg/l)	62	64	66	74	68
Total Alkalinity (mg/l)	56	74	96	60	76
Phenolphthalein Alkalinity (mg/l)	NIL	NIL	NIL	NIL	NIL
Ammonia-N (mg/l)	Not Done	Not Done	Not Done	Not Done	BDL
Nitrate-N (mg/l)	Not Done	Not Done	Not Done	Not Done	1.18
Phosphate-P (mg/l)	0.004	0.003	0.018	0.127	0.079
Sulphate (mg/l)	6.76	5.02	15.89	13.23	12.92
Fluoride (mg/l)	Not Done	Not Done	Not Done	Not Done	0.15
Chloride (mg/l)	10.76	5.87	18.59	20.55	8.81
Boron (mg/l)	9.02	Not Done	3.35	0.26	2.13
Potassium (mg/l)	0.8	1.6	1.2	0.8	1
Sodium (mg/l)	2.3	1.4	2.8	2.6	2.2

Polluting Sources of River Kaljani:**Industrial wastewater treatment:**

There is no industrial estate in the catchment of river Kaljani. There is no identified water polluting industry. However inventorisation of industries is under progress.

Municipal wastewater treatment:

The following 18 (eighteen) canals/drains are discharging large quantities of municipal wastewater in to the river.

(1) Arabindanagar, Ward No.- 01 (2) Near Crematorium, Ward No.-01 (3) Near Dima Bridge, Ward No. 01 & 08 border (4) Hatathcolony, Ward No.- 08 (5) Bidhanpalli, Ward No.- 09 (6) Near Crematorium, Ward No.- 10 (7) Uttarpara, Ward No.- 10 (8) Near Asutosh Club, Ward No.- 11 (9) Palash Bari, Ward No.-11 (10) SantidhamAsram, Ward No.- 11 (11) Near Babupara Rail Bridge, Ward No.- 12 (12) Near BM Club, Ward No.- 18 (13) Sanjay Colony, Ward No.- 18 (14-18) Another five small stretches

Name of the recipient water body	: River Kaljani
Name of the Municipal Town	: Alipurduar Town
No. of drains discharging	: 18 (eighteen)
No. of drains considered for treatment facility	: 18 (eighteen)
Water consumption as on 2020	: 15.43 MLD
Wastewater generation as on 2020	: 9.33 MLD
Existing wastewater treatment facility	: NIL
Gap in wastewater treatment	: 9.33 MLD
Proposed Treatment system	: Primary treatment with Sedimentation Tank & disinfection
Scheduled date of start of work for Primary treatment	: 31.08.2020
Scheduled date of completion of work for Primary treatment	: 30.06.2021

Primary treatment at Alipurduar town for river Kaljani by providing screens, sedimentation tank, followed by disinfection by chlorination at out falls of 18 nos. of drains is proposed. The tender is expected to be finalized by August 2020.

Municipal Solid Waste Management:

Present generation of waste in Alipurduar town is 22 TPD. Door-to-Door collection of solid waste is expected to be achieved within Jan. 2021. Waste segregation at source is expected to be achieved within Mar. 2021. Establishment of waste processing facility including Sanitary Land Fill (SLF) for the town will be completed following the timeframe as stipulated in Rule 22 of SWM Rule 2016

Hazardous Waste Management:

In West Bengal, there is one (1) Common Hazardous Waste Treatment, Storage and Disposal Facility operating at Haldia. The facility is capable of disposing all hazardous wastes generated in the State. All hazardous waste generating industries are disposing their hazardous wastes through the CHWTSDFs located at Haldia.

Bio-Medical Waste Management:

In West Bengal, there are six (6) Common Bio-medical Waste Treatment, Storage and Disposal Facilities. All health care institutions within the catchment area of the river are disposing their bio-medical wastes through the Common Bio-medical Waste Treatment, Storage and Disposal Facility at Haldia, PurbaMedinipur district.

Construction & Demolition Waste Management:

Local ULB has been directed by the WBPCB and UD&MA Dept., GoWB to take necessary action as per C&D Waste Management Rules, 2016.

Ecological/Environmental Flow (E-Flow):

The river Kaljani has sufficient freshwater supply from upstream source as well as tidal event. It receives runoff during monsoon and base flow is maintained from ground water pool and tidal flow during lean months including the up-stream flow. Afforestation, rainwater harvesting and reduction of ground water exploitation from flood plain could ensure the ecological flow in this river. At one location, i.e., downstream of the town, flow of the river should be measured and record maintained by State Irrigation department.

Table-6: Action Plan with agencies responsible, time target and budgetary estimates

<i>Department s /Agencies</i>	<i>Actions to be taken</i>	<i>Targeted timeline</i>	<i>Budgetary Estimate (Rs. In lakh)</i>	
MED	Action plans for Management of Municipal Waste Water discharge.	30.06.2021	22.25	
WBPCB	All industries are having treatment facilities in place and are being monitored on regular basis.	Continuous process	-	
SUDA	Action plans for management of Solid wastes & Plastic wastes in urban areas <ul style="list-style-type: none"> • Door to Door collection of solid waste. • Waste segregation at household source. • Establishment of waste processing facility including SLF for the town will be completed following the timeframe as stipulated in Rule 22 of SWM Rule 2016 • Development of IEC activities & capacity buildings of different stakeholder. • Draft Action Plan prepared to be ratified by State Level Technical Committee shortly 	31.01.2021 31.03.2021	786.00	
WBPCB	Action plans for management of Hazardous, Bio-medical and Electrical and Electronic wastes	Continuous process	0.00	
DoIT	Quantification and Characterization	Installation of e-waste bin, Categorizing and Disposal	28.02.2021	
	Existing Infrastructure	Selection and Utilization of approved PROs for collection and Disposal		
	Detailed Gap Analysis	Monitoring & Management		
	Management Action Plan	Meeting with OEMs, other stake holders		
	Promotional	Sensitization Training		
		Promotional Documents, Training Materials		
Hoardings at river stretch				

IRD	<p>Protection and management of flood plain zones (FPZ)</p> <p>For river stretch Kaljani (Bitala To Alipurduar) action plan on the following.</p> <ol style="list-style-type: none"> 1. Extension of Nakadola embankment at its down stream portion along the river Kaljani for a length of 430 mt. from chainage 3150 mt.to Ch. 3580 mt. in Block & P.S. Kalchini Dist. Alipurduar. 2. Bank protection work at Uttar patkapara area beside Nimitjhora Tea estate along left bank of river Kaljani for a length of 1050 mt. under Latabari G.P. Block & P.S. Kalchini Dist. Alipurduar. 3. Bank protective embankment work at Daskhinpatkapara area along the left bank of river Kaljani for a length of 540 mt. under Tapsikhata G.P. Block -Alipurduar-I in P.S.& Dist. Alipurduar. 4. Bank protection work at BirparaKhudiram pally area alongthe right bank of river Kaljani for a length of 400 mt. under Parapar G.P. Block - Alipurduar-I in P.S.& Dist. Alipurduar. 5. Bank protection work at PaschimSalbari area along the right bank of river Kaljani for a length of 500 mt. under Parapar G.P. Block - Alipurduar-I in P.S.& Dist. Alipurduar. 6. Bank protection work along the right bank of River Kaljani for a length of 380 m within the Mouza Sovaganj, Chaparerpar-I GP, Block- Alipurduar-I PS+ Dist.- Alipurduar. 7. Bank protection work at Dakshin Mendabari area along the right bank of River Kaljani for a length of 630 m under Mendabari GP, Block + PS- Kalchini, Dist.- Alipurduar. 	31.03.2021	594.25
DoF	Nursery work completed. Plantation work will start from July 2020.	31.03.2024	0.00
DoAg	<p>Good agricultural practice (Bio-village program, IPM demonstration etc.)</p> <p>Crop diversification (Demonstration with low water requiring crops etc.)</p> <p>Good irrigation practices (Micro irrigation with supplementary water management activities)</p> <p>Soil and water conservation (water harvesting structure, dug well, Gully plugging, Check dam etc.)</p>	31.03.2022	880.00
P&RDD	<ul style="list-style-type: none"> • 83 Nos Pond Excavation Works • 156 Nos Block Plantation Schemes • 25 Nos Strengthening of Earthen Embankment Schemes 	30.09.2020	436.48
SWID	<ul style="list-style-type: none"> • GW Level & Quality Monitoring • Real-Time GWL Monitoring through Installation of DWLR • Roof top rainwater and surface runoff Harvesting for conservation on surface and artificial recharge to groundwater 		
DoUD&MA	Utilization of treated waste water	Policy has been notified by Govt. of West Bengal on 30-06-2020. Action will be taken accordingly.	

MED: Municipal Engineering Directorate, DoUD&MA, GoWB

SUDA: State Urban Development Agency, DoUD&MA, GoWB

WBPCB: West Bengal Pollution Control Board

DoIT: Department of Information Technology, GoWB

P&RDD: Panchayat & Rural Development Department, GoWB

SWID: State Water Investigation Directorate

IRD: Irrigation Department, GoWB

DoF: Forest Department, GoWB

DoAg: Agriculture Department, GoWB

DoUD&MA: Department of Urban Development & Municipal Affairs, GoWB

24/08/2020

Additional Chief Engineer (South)
M. E. Directorate, Govt. of W.B.

24/08/2020

Secretary
M.E. Directorate
Deptt. of UD & MA
Govt. of West Bengal

Compliance of RRC meeting held on 17/08/2020

SL	Observation of RRC Meeting	Remarks
1	Water quality of the polluted river stretches for Fecal Streptococci (FSC) whereas water quality of all drains to be analyzed for general parameters, heavy metals and Fecal coliform as well as Fecal Streptococci (FSC) and included in the report.	Will be complied as per CPCB guideline
2	Water quality of groundwater in the catchment for relevant parameters to be included.	
3	Bio-mining of existing dumpsites in the catchment of polluted river stretches need to be elaborated.	
4	I & D of sewage from the identified drains to the nearby existing STPs or proposed STPs to be mentioned clearly in the report.	Not Applicable
5	Watershed management, flood plain protection, ground water recharge, greenery, rainwater harvesting apart from measures for discharge of stored water from U/s of dams to be included as a part of proposal for e-flow maintenance in all the polluted river stretches.	Will be complied as per CPCB guideline
6	Specific funding agency for each action point to be included.	Department of UD & MA
7	Short-term measures for drains such as phytoremediation/bio-remediation/nano bubbles treatment/aeration treatment and other options feasibility to be examined and adopted to improve water quality of polluted rivers depending on the local conditions.	Action already initiated.
8	Timelines to be revised as per Hon'ble NGT order for all the proposed action plan and PERT chart also be included.	To be completed by 30/06/2021, Revised PERT chart incorporated.

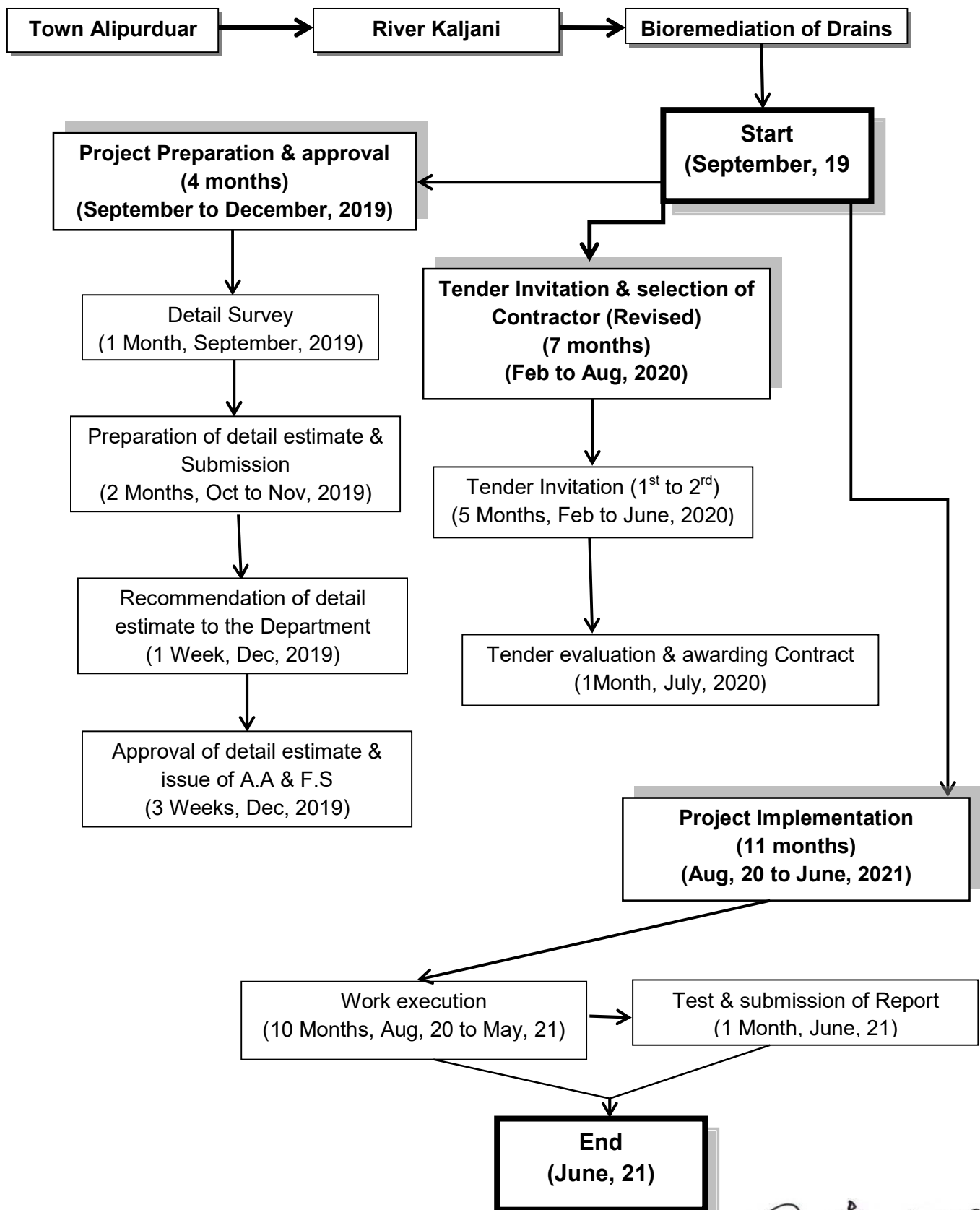


Additional Chief Engineer (S)
Municipal Engineering Dte.



Secretary
Municipal Engineering Dte.

PERT Chart in respect of implementation of action plans for Kaljani River stretch



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Additional Chief Engineer (S)
Municipal Engineering Dte.

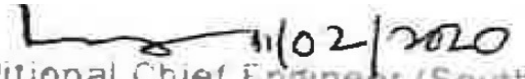
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24/08/2020

Secretary
Municipal Engineering Dte.

Information on Drains. Sewage Treatment Plants in compliance to Hon'ble NGT order dated 22.08.2019

Annexure ME-1

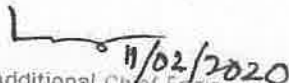
SI	Name of River	City /town	Water Consumption data as on 2022		Waste Water Generation as on 2022 (MLD)	Existing Waste Water Treatment Infrastructure (MLD)	Gap analysis for Waste Water Treatment	Waste Water Management Action Plan										
								Primary Treatment										
								Name of Drain	(Nos.) untapped Name of Drain	Total discharge capacity of drains (MLD)	Provision of bioremediation for drain (Yes / No)		Action Plan for Primart Treatment					
													Estimate d Cost (Lakhs)	Type of Structure proposed	Whether Tender Invited	Time period for finalization of Tender Process 8, awarding Work Order	Work Start date	Schedule dale of completion of work
Source	Consumtion (MLD)																	
1	Jalangi	Krishnagar	Surface	28.61	17.45	0	17.45	8	Enclosed in separate sheet	17.45	Yes	Action Taken	18.34	Screen bar, Cascade, Aeration & disinfection	Yes	31.08.2020	01.09.2020	30.06.2021
2	Kansi	Medinipur	surface	33.98	21.41	0	21.41	2	NA	21.41	Yes	Action Taken	55.66	Sedimentation Tank & disinfection	Yes	31.08.2020	01.09.2020	30.06.2021
3	Darakeswar	Bankura	Surface	25.09	15.10	0	15.10	13	NA	15.10	Yes	Action Taken	131.49	Sedimentation Tank & disinfection	Yes	31.08.2020	01.09.2020	30.06.2021
4	kaljani	Alipurduar	Surface	15.43	9.33	0	9.33	18	NA	9.33	Yes	Action Taken	22.25	Sedimentation Tank & disinfection	Yes	31.08.2020	01.09.2020	30.06.2021
5	Karola	Jalpaiguri	Surface	21.01	12.81	0	12.81	4	NA	12.81	Yes	Action Taken	36.56	Sedimentation Tank & disinfection	Yes	31.08.2020	01.09.2020	30.06.2021
6	Rupnarayan	Tamluk	Surface	13.24	8.37	0	8.37	4	NA	8.37	Yes	Action Taken	81.87	Sedimentation Tank & disinfection	Yes	31.08.2020	01.09.2020	30.06.2021
7	Mayurakshi	Suri	Ground	7.44	4.04	0	4.04	12	NA	4.04	Yes	Action Taken	78.97	Sedimentation Tank & disinfection	Yes	31.08.2020	01.09.2020	30.06.2021
8	Mayurakshi	Sainthia	Ground	5.02	2.68	0	2.68	14	NA	2.68	Yes	Action Taken	86.27	Sedimentation Tank & disinfection	Yes	31.08.2020	01.09.2020	30.06.2021
9	Silabati	Ghatal	Surface	6.92	3.80	0	3.80	4	NA	3.80	Yes	Action Taken	134.37	Sedimentation Tank & disinfection	Yes	31.08.2020	01.09.2020	30.06.2021


 Additional Chief Engineer (South)
 M. E. Directorate, Govt. of W.B.

NAME OF DRAINS FOR WHICH PROPOSAL OF PRIMARY TREATMENT PROPOSED

Sl	Name of town	Nos.of Drains Identified	Name of Drains
1	Krishnagar	8	Haldar Para TD Banorjee Lane Kumar Para Ghat Lane Surkikal Ghat Ahibhusan Haldar Lane Amarbharati Momin Park Talikhola Sasan Kalibari
2	Medinipur	28	Daribandh Khal Jharna Khal & other small Drains
3	Bankura	13	Lokpur Ghat Raja gram-1 Raja gram-2 Kankata Patpur Minapur Samsan Patpur naopara Kedardanga Patakola Kedardanga B agdipara Kedardanga Ghat Satighat Lakhatora
4	Alipurduar	18	Arabindanagar Crematorium Dima Bridge Hatat Colony Bidhanpally Crematorium at ward 10 Uttarpara Asutosh Club Palas Bari Santidham Asram Babupara Rail Bridge BM Club Sanjay Colony Another 5 small stretches
5	Jalpaiguri	4	Dhardhara Maskalibari Crematorium Ghat District Hospital Road Dinbazar Drain

Sl	Name of town	Nos.of Drains Identified	Name of Drains
6	Tamluk	4	Drains adjoining to Sankarara Khal
			Drains adjoining to Narayanpur Khal
			Drains adjoining to Pairatunga Khal
7	Suri	12	NA
8	Sainthia	14	NA
9	Ghatal	4	NA


 11/02/2020
 Additional Chief Engineer (South)
 M. E. Directorate, Govt. of W.B.

ABSTRACT

Sl. No.	Description	Cost
1	Estimate for Construction of Bioremediation for treating drain before discharging to Kaljani river at Shovaganj under Alipurduar Municipality	8,25,528.00 ₹ 8,25,528.00
2	Estimate for Construction of Bioremediation for treating drain before discharging to Kaljani river at Palasbari under Alipurduar Municipality	6,99,951.00 ₹ 7,10,112.00
3	Estimate for Construction of Bioremediation for treating drain before discharging to Kaljani river at Bakribari under Alipurduar Municipality	6,99,951.00 ₹ 7,10,112.00

Total Amount = ₹ 23,21,637.00
22,25,430.00

[Signature]
11.11.19
Executive Engineer
Coochbehar Division, M.E. Dte.
Govt. of West Bengal

[Signature]
11/12/19
Assistant Engineer
Office of the Addl. C.E.(South)
M. E. Directorate
Govt. of West Bengal

[Signature]
11/12/2019
Additional Chief Engineer (South)
M. E. Directorate
Govt. of West Bengal

Annexure- SUDA-I

SWM Action Plans for Alipurduar Municipality

Kaljani

Sl.	Key Components of Proposed Action Plans for Restoration of Identified Polluted River Stretches- KALJANI	Proposed Achievable Target	Proposed Time Targets to achieve target	Remarks
	Municipal Solid Waste Management			
	Commissioning of Integrated Waste Management Facilities or Sanitary Land Fills or Bio manure or Pellets making or Waste to Energy Plants	<ul style="list-style-type: none"> ➤ Door to Door collection of solid waste. ➤ Waste segregation at household source. ➤ Establishment of waste processing facility including SLF. ➤ Development of IEC activities & capacity buildings of different Stack holders. 	<ul style="list-style-type: none"> ➤ D 2 D collection of solid waste is expected to be achieved within March 2020. ➤ Waste segregation at source is expected to be achieved within Octo.2020 ➤ Present generation of waste in town is 22 TPD. Establishment of waste processing facility including SLF for the town will be completed following the timeframe as stipulated in Rule 22 of SWM Rule 2016 	<p>City specific Draft DPR have been prepared for implementation of SWM projects. Tentative cost is 7.86 Cr. that includes collection, transportation and Processing of Waste.</p> <p>Litter bins are provided besides the River banks.. Accumulated garbage have been removed from the river banks.</p> <p>Intensive IEC activities including display of poster/banner, awareness campaign, capacity building of stakeholders are continuously organized by ULB.</p>

Annexure- IT-I

River Name	River Stretch	Activities	Steps Taken	Number	Timeline	Total Sanctioned Amount (For FY - 2020-2021)	Total Sanctioned Amount (For FY - 2021-2022)		
Kaljani	Bitala to Alipurduar	Quantification and Characterization		2	FY - 2020-2021	115000	115000		
				Installation of e-waste bin, Categorizing and Disposal					
		Existing Infrastructure							
				Selection and Utilization of approved PROs for collection and Disposal					
		Detailed Gap Analysis							
				Monitoring & Management					
		Management Action Plan							
				Meeting with OEMs, other stake holders					
		Promotional		Sensitization Training					1
				Promotional Documents, Training Materials					1
Hoardings at river stretch				2					

Annexure-PD-I

Status on Implementation of Action Plans for Restoration of Identified Polluted River Stretches for ensuring compliance to Hon'ble NGT

Name of the district :-	ALIPURDUAR
Contact details of the Nodal Officer :-	Ratul Ghosh Contact No.- 7384108248

Sl No.	River	Activity to be monitored	Timeline	Financial Outlay	Remarks
1	Kaljani	83 Nos Pond Excavation Works	Work Start Date- April, 2020 Expected Work End Date- End of May, 2020	259.31 Lakhs	
2	Kaljani	156 Nos Block Plantation Schemes	Work Start Date- May, 2020 Expected Work End Date- End of September, 2020	53.65 Lakhs	
3	Kaljani	25 Nos Strengthening of Earthen Embankment Schemes	Work Start Date- April, 2020 Expected Work End Date- End of June, 2020	123.52 Lakhs	

Annexure-I

Status of Implementation of Action Plan (2019-20) of Irrigation & Waterways Department, Govt. of West Bengal with respect to erosion and flood protection works envisaged in the Action Plan submitted by I&WD vide memo no.233-IW/O/IFC-4M-16/2015(PT) dated 26.06.2019 to comply NGT order no- O.A. 673/2017 and O.A. 727/2018

Name of the State/UT : West Bengal

As on 31.01.2020

Contact details of the Nodal Officer : Biplab Mukherjee,

Deputy Secretary to the Govt. of West Bengal
Irrigation & Waterways Department
Phone & Fax - 033 2321 5211; email : ds-works@wbiwd.gov.in

A. Component :- Flood Plane Zone Protection and its Management

Sl. No.	River Stretches	Key components of proposed action plans for restoration of identified polluted river stretches in States/UTs	Cost in Rs. Lakh	Proposed Achievable Target	Proposed Time Targets for compliance	Present Status and or pendency in terms of %
1	Mahananda (Siliguri to Binnaguri)	Protection to the eroding both bank of river Mahananda for a length of 1.400 m. at Champasari Road Bridge, SMC Area, Dist. Darjeeling.	358.6	Erosion protection at Champasari Road Bridge, SMC Area, Dist. Darjeeling	31.03.2020	Work started, 46 % Progress.
2	Kaljani (Bitala To Alipurduar)	Extension of Nakadola embankment at its down stream portion along the river Kaljani for a length of 430 mt. from chainage 3150 mt.to Ch. 3580 mt. in Block & P.S. Kalchini Dist. Alipurduar.	75.74	Erosion protection at Block & P.S. Kalchini Dist. Alipurduar	31.03.2020	Work started, 40 % Progress.
3	Kaljani (Bitala To Alipurduar)	Bank protection work at Uttar patkapara area beside Nimtjhora Tea estate along left bank of river Kaljani for a length of 1050 mt. under Latabari G.P. Block & P.S. Kalchini Dist. Alipurduar.	132.38	Erosion protection at Latabari G.P. Block & P.S. Kalchini Dist. Alipurduar	31.03.2020	Work started, 20 % Progress.
4	Kaljani (Bitala To Alipurduar)	Bank protective embankment work at Daskhinpatkapara area along the left bank of river Kaljani for a length of 540 mt. under Tapsikhata G.P. Block -Alipurduar-I in P.S.& Dist. Alipurduar.	86.58	Erosion protection at Daskhinpatkapara in Tapsikhata G.P. Block -Alipurduar-I in P.S.& Dist.- Alipurduar.	31.03.2020	Work started, 32 % Progress.

Sl. No.	River Stretches	Key components of proposed action plans for restoration of identified polluted river stretches in States/UTs	Cost in Rs. Lakh	Proposed Achievable Target	Proposed Time Targets for compliance	Present Status and or pendency in terms of %
5	Kaljani (Bitala To Alipurduar)	Bank protection work at BirparaKhudiram pally area along the right bank of river Kaljani for a length of 400 mt. under Parapar G.P. Block - Alipurduar-I in P.S.& Dist. Alipurduar.	63.33	Erosion protection at Birpara Khudiram pally in Parapar G.P. Block - Alipurduar-I in P.S.& Dist. Alipurduar.	31.03.2020	Work started, 18 % Progress.
6	Kaljani (Bitala To Alipurduar)	Bank protection work at PaschimSalbari area along the right bank of river Kaljani for a length of 500 mt. under Parapar G.P. Block - Alipurduar-I in P.S.& Dist. Alipurduar.	84.27	Erosion protection at Paschim Salbari in Parapar G.P. Block - Alipurduar-I in P.S.& Dist. Alipurduar.	31.03.2020	Work started, 45 % Progress.
7	Rupnarayan (Kolaghat To Benapur)	Protection to severely damaged right bank of River Rupnarayan in between MP 17.75 and MP19.54 Ghat for a length of 1132.00 m in Tamluk Municipality, P.S - Tamluk & District -Purba Medinipur.	367.53	Erosion protection at Tamluk Municipality, P.S - Tamluk & District -Purba Medinipur.	31.03.2020	Work started, 39 % Progress.
8	Karola (Jalpaiguri To Thakurer)	Construction of bank protection work on the left bank of river Karala near multi super speciality hospital for a length of 600.00 MTR within Jalpaiguri Municipality area in P.S,Block and Dist-	106.17	Erosion protection at Jalpaiguri Municipality area in P.S, Block and Dist-Jalpaiguri.	31.03.2020	Work completed
9	Karola (Jalpaiguri To Thakurer)	Construction of bank protection work on the left bank of river Karala near RSA club and back side of Indira colony for a length of 480.00 m in p.s & district-Jalpaiguri. (IW/CSP-424/2018-19)	96.08	Erosion protection at RSA club & back of Indira colony in P.S. & District-Jalpaiguri.	31.03.2020	Work completed
10	Karola (Jalpaiguri To Thakurer Kamat)	Protection on the right bank of River Karala near Mundabasti for a length of 950.00 m in Block-Sadar, P.S & District -Jalpaiguri.	165.10	Erosion protection at Mundabasti in Block-Sadar, P.S & District -Jalpaiguri.	30.04.2020	Work started, 30 % Progress.
11	Teesa (Siliguri to Paharpur)	Bank protection work in between spur no 2 and spur no 4 of Gourikone area for a length of 985 Mtr in P.s and Dist. Jalpaiguri.	174.69	Erosion protection at Gourikone area in P.S and Dist Jalpaiguri .	31.12.2019	90 % work completed
12	Teesa (Siliguri to Paharpur)	Construction country side toe wall at JTP embankment and improvement of countryside slope and crest for a length of 3.00 K.M in between Balapara and D.M office complex within Jalpaiguri municipality and Kharia G.P along the right bank of river Teesta in P.S,Block and Dist.Jalpaiguri .	193.40	Erosion protection at Jalpaiguri Municipality and Kharia G.P in P.S, Block and Dist.Jalpaiguri .	31.01.2020	90 % work completed

Sl. No.	River Stretches	Key components of proposed action plans for restoration of identified polluted river stretches in States/Uts	Cost in Rs. Lakh	Proposed Achievable Target	Proposed Time Targets for compliance	Present Status and or pendency in terms of %
19	Kaljani (Bitala To Alipurduar)	Bank protection work at Dakshin Mendabari area along the right bank of River Kaljani for a length of 630 m under Mendabari GP, Block + PS- Kalchini, Dist.- Alipurduar.	77.73	Erosion protection at Kalchini Block..	31.05.2020	Under Tender stage
20	Kaljani (Bitala To Alipurduar)	Bank protection work along the right bank of River Kaljani for a length of 380 m within the Mouza Sovaganj, Chaparpar-I GP, Block- Alipurduar-I PS+ Dist.- Alipurduar.	74.22	Erosion protection at Alipurduar -I Block.	31.05.2020	Under Tender stage
21	Rupnarayan (Kolaghat To Benapur)	Protection on the right bank of River Rupnarayan near Achaipur for a length of 1700.00 m at Block- Sahid Matangini, P.S - Tamluk & District -Purba Medinipur.	470.00	Erosion protection at Block- Sahid Matangini, P.S - Tamluk & District -Purba Medinipur.	31.12.2020	Work started, 8 % Progress.
22	Rupnarayan (Kolaghat To Benapur)	Protection on the left bank of River Rupnarayan from Gadiara Bus stand to Atteswari for a length of 700m in Block Shyampur-I, P.S. Shyampur, District Howrah.	198.43	Erosion protection at Gadiara in Block Shyampur-I, P.S. Shyampur, District Howrah	31.12.2020	Work started.
23	Rupnarayan (Kolaghat To Benapur)	Protection on the left bank of River Rupnarayan for a length of 600 m near Boys Sporting Club at Dakshin Bhatora in G.P. Bhatora, Block- Amta-II, District Howrah.	190.85	Erosion protection at Dakshin Bhatora in G.P. Bhatora, Block- Amta-II, District Howrah	31.12.2020	Work started.
24	Rupnarayan (Kolaghat To Benapur)	Protection on the left bank of River Rupnarayanat Mankur to Degram for a length of 1.50 km in G.P. Buxihat, Block Bagnan-I, P.S. Bagnan, District Howrah.	437.83	Erosion protection at G.P. Buxihat, Block Bagnan-I, P.S. Bagnan, District Howrah.	31.03.2021	Tender Stage
Total =			6669.10			

B. Mukhopadhyay
Deputy Secretary to the
Government of West Bengal.

Annexure AD-I

Department of Agriculture

River Rejuvenation Action Plan of Polluted River Stretches of River Kaljani

Distribution of Organizational Responsibilities				
Departments / Agencies	Actions to be taken	Targeted timeline	Budgetary Estimate	Remarks (Annexure)
Agriculture Department	Good agricultural practices (Bio village Program etc)	2019-20	Rs 8.80.crore	
	Crop Diversification (Demonstration with low water requiring crops etc.)	to		
	Good Irrigation Practices (Micro irrigation with supplementary water management activities)	2021-22		
	Watershed management	(3-years)		
	Soil and water conservation (water harvesting structure,Dugwell,Gullyplugging,Check dam etc)			