

REVISED ACTION PLAN FOR REJUVENATION OF SIX IDENTIFIED POLLUTED RIVER STRETCHES OF TRIPURA

In compliance with the Direction of Hon'ble National Green Tribunal dated 19/12/2018 & 08/04/2019 in connection with Original Application No. 673/2018 in the matter of News Item Published in the Hindus titled as "More River Stretches are now Critically Polluted : CPCB"



Submitted by
River Rejuvenation Committee
Government of Tripura

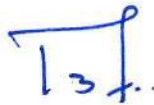
**INDIVIDUAL ACTION PLAN FOR
REJUVENATION OF MANU
POLLUTED RIVER STRETCHES,
TRIPURA**

**BURIGAON GUMTI HAORA JURI
KHOWAI MANU**

GOVERNMENT OF TRIPURA RIVER REJUVENATION COMMITTEE

In compliance with the Direction of Hon'ble National Green Tribunal dated 19/12/2018 & 08/04/2019 in connection with Original Application No. 673/2018 in the matter of News Item Published in the Hindus titled as "More River Stretches are now Critically Polluted : CPCB, the Government of Tripura constituted River Rejuvenation Committee (RRC) vide memorandum No.F.8(21)/DSTE/ENV/Pt-II/7255-59 dated 01/11/2018 for effective abatement of pollution, rejuvenation, protection and management of the following identified polluted River stretches and preparation of Action Plan.

Accordingly, the Revised Action Plan incorporating the suggestion of Central Pollution Control Board has been prepared separately for 6 (six) identified river stretches by the River Rejuvenation Committee (RRC), Tripura.



Member, RRC, Tripura
[Director, Industries & Commerce Department,
Government of Tripura]



Member, RRC, Tripura
[Director, Urban Development
Department, Government of Tripura]



Member Secretary, RRC, Tripura
[Member Secretary, Tripura State Pollution Control
Board]



Chairman, RRC, Tripura
[Director, Science, Technology &
Environment, Government of Tripura]

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REVISED ACTION PLAN FOR RESTORATION OF 6 (SIX) IDENTIFIED POLLUTED RIVER STRETCHES OF TRIPURA

CHAPTER-1

1.0 INTRODUCTION:

Water is essential for thriving of people as it is needed for domestic, agricultural, industrial purposes and energy production and these uses are highly inter-linked. The key challenges to better management of the water quality are variation of rainfall, improper management of surface runoff, uneven geographic distribution of surface water resources, persistent droughts, overuse of ground water and contamination, drainage & sanitization and water quality problems due to treated, partially treated and untreated wastewater discharge from urban settlements, industrial establishments and runoff from irrigation sector besides poor management of municipal solid waste and animal dung in rural areas.

A total of 351 polluted river stretches has been identified by the Central Pollution Control Board throughout the country and these have been prioritized based on their severity of pollution in five classes from Priority I (BOD > 30 mg/l) to Priority V (BOD between 3 to 6 mg/l).

CPCB has identified polluted river stretches by statistically analyzing the water quality data under National Water quality monitoring programme for the year 2016 and 2017. The monitoring locations exceeding the water quality criteria are identified as polluted. The polluted locations in a continuous sequence are defined as polluted river stretches and categorized in five priority classes based on BOD concentration exceeding to BOD levels > 30 mg/l, BOD between 20 & 30 mg/l, BOD between 10 & 20 mg/l, BOD between 6-10 mg/l and BOD between 3 & 6 mg/l.

The criteria for Priority V category monitoring locations having the BOD values between 3.0-6.0 mg/l.

In Tripura, following six nos. polluted river stretches have been identified, all in Priority-V class:

Table-1 : List of identified polluted river stretches of Tripura

River	River Stretch	BOD Range/ Max Value (mg/l)
Burigaon	Along Bishalgarh	3.9
Gumti	Telkajila To Amarpur	3.9
Haora	Agartala To Bishramganj	3.2-4.0
Juri	Along Dharmanagar	4.9
Khowai	Along Teliamura	3.3
Manu	Along Kailashahar	3.5-3.6

Hon'ble NGT, Principal Bench, New Delhi in their Order dated 28th September, 2018 in O.A. No.673/2018 regarding monitoring and restoration of water quality of identified polluted river stretches have inter alia directed all States and Union Territories 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< 3 mg/L and FC< 500 MPN/100ml) within six months from the date of finalization of the action plans. This action plan has been prepared accordingly. The action plan includes components like identification of polluting sources including functioning/ status of STPs/ ETPs/ CETP and solid waste management and processing facilities, quantification and characterization of solid waste, trade and sewage generated in the catchment area of polluted river stretch. The action plan addresses issues relating to; ground water extraction, adopting good irrigation practices, protection and management of Flood Plain Zones (FPZ), rain water harvesting, ground water charging, maintaining minimum environment flow of river and plantation on both sides of the river. The action plan focuses on proper interception and diversion of sewage carrying drains to the Sewage Treatment Plant (STP). The action plan provides for speedy and definite or specific timelines for execution of steps.

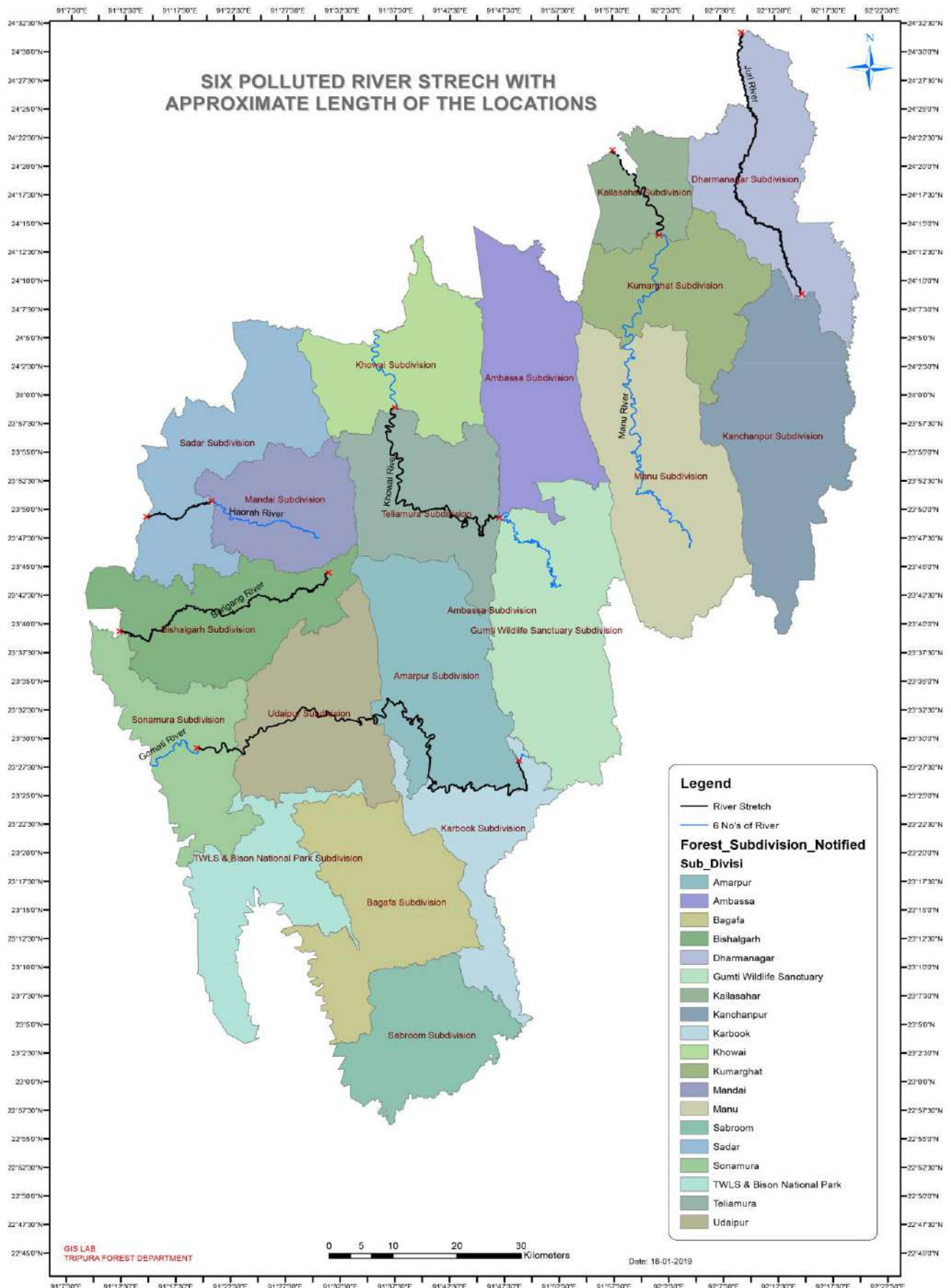


Figure-1 : The map showing the six identified river stretches of Tripura.

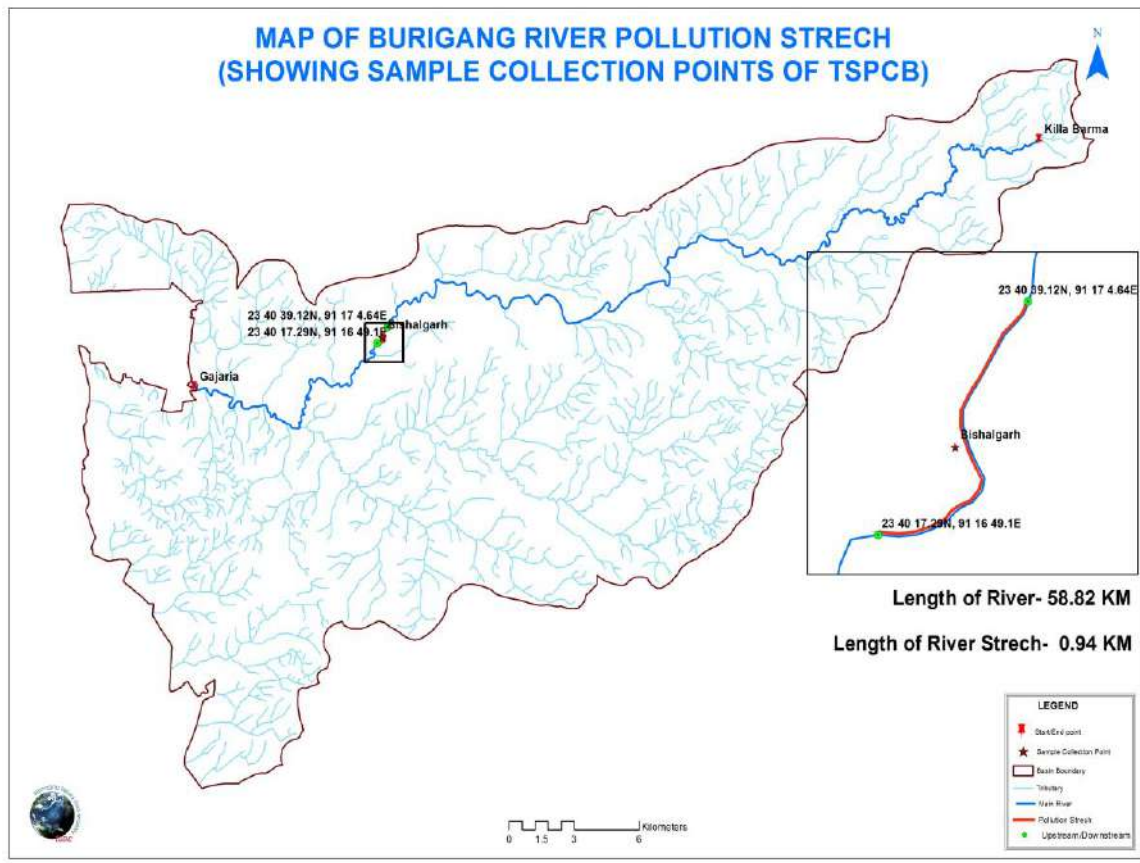


Figure-2: The map showing the Burigaon river stretches of Tripura.

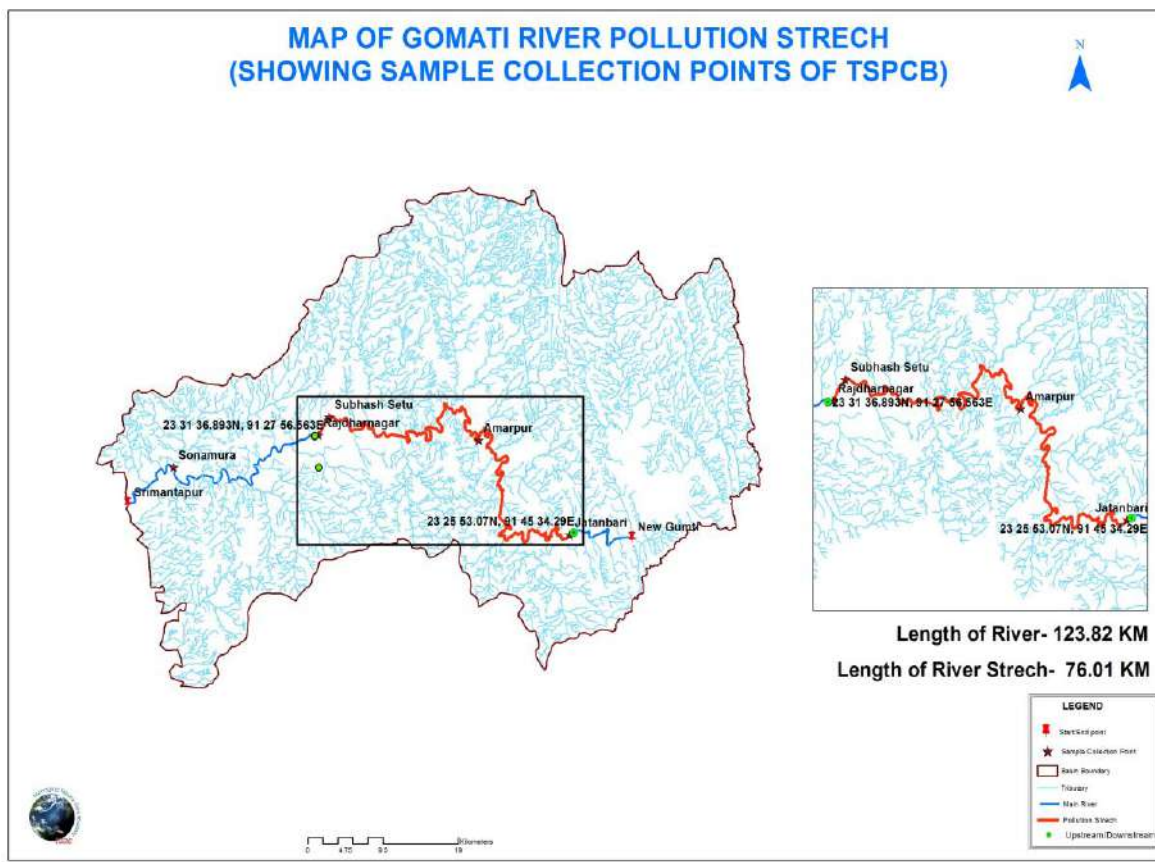


Figure-3: The map showing the Gumti River stretches of Tripura.

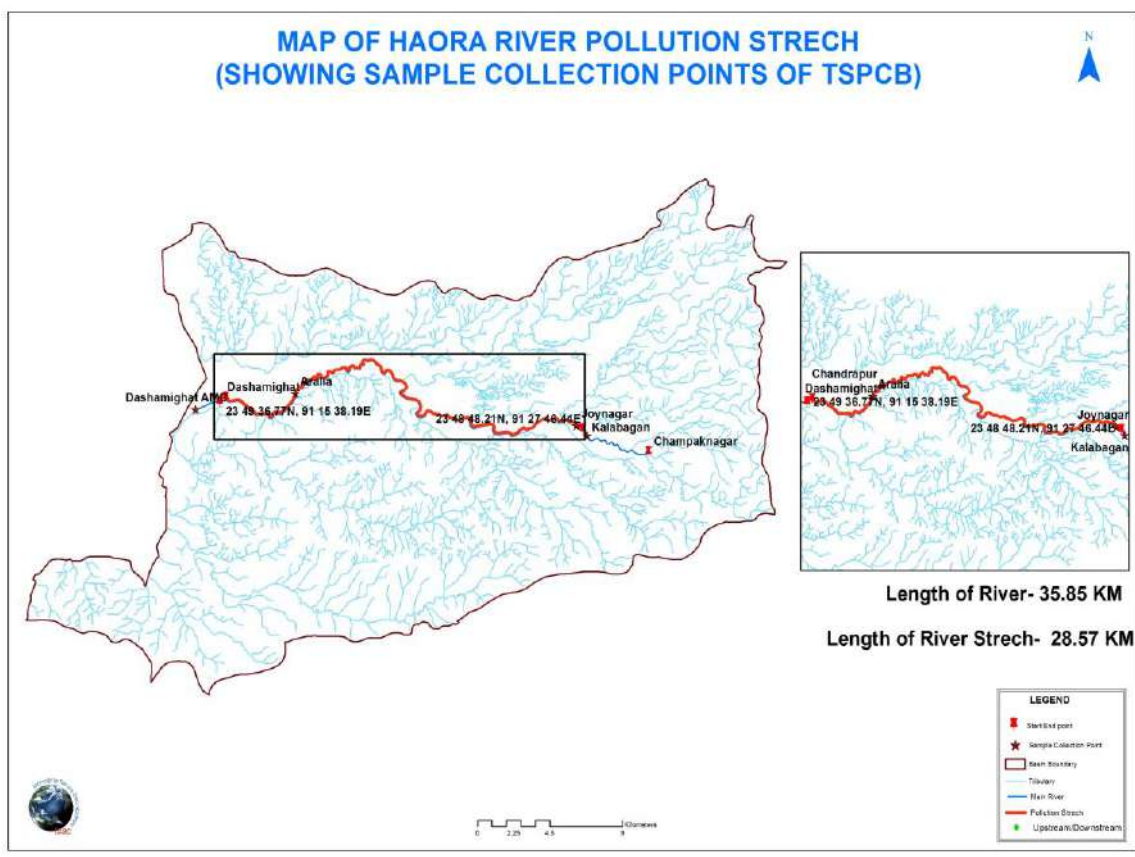


Figure-4: The map showing the Haora River stretches of Tripura.

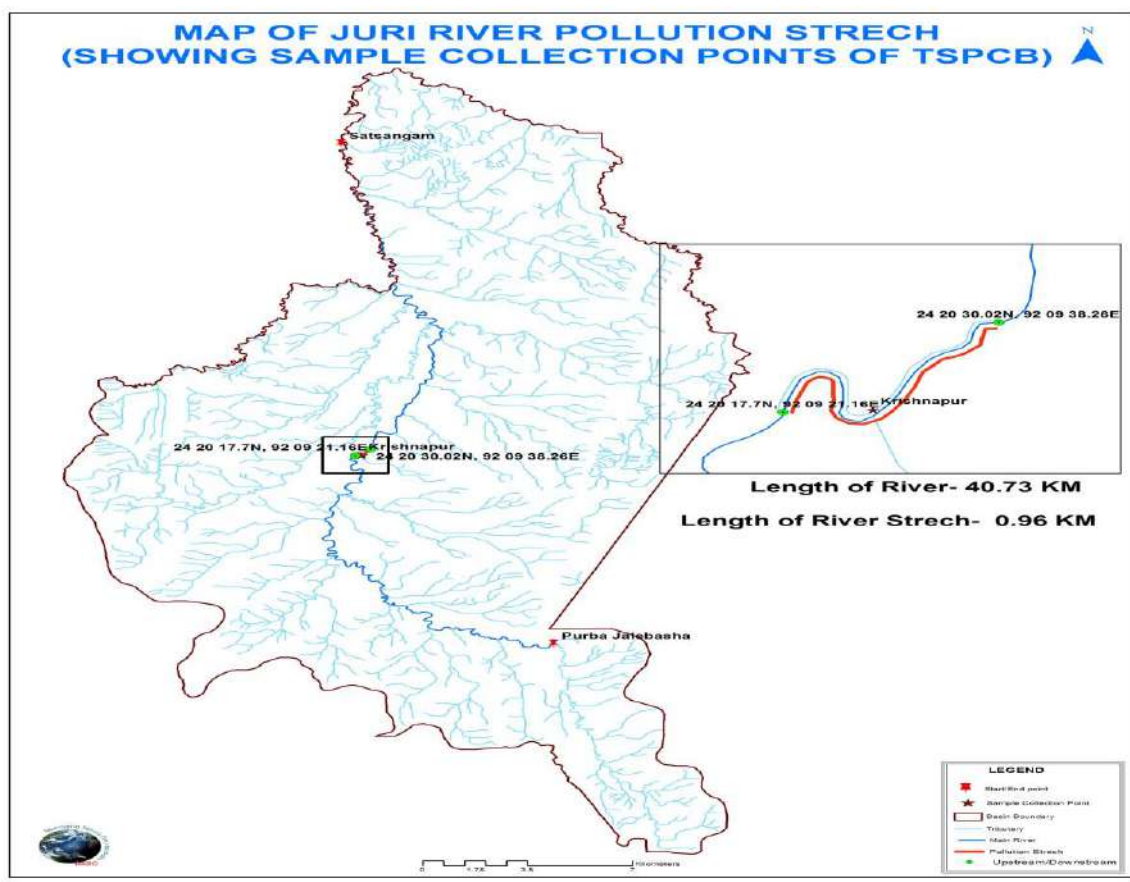


Figure-5: The map showing the Juri River stretches of Tripura.

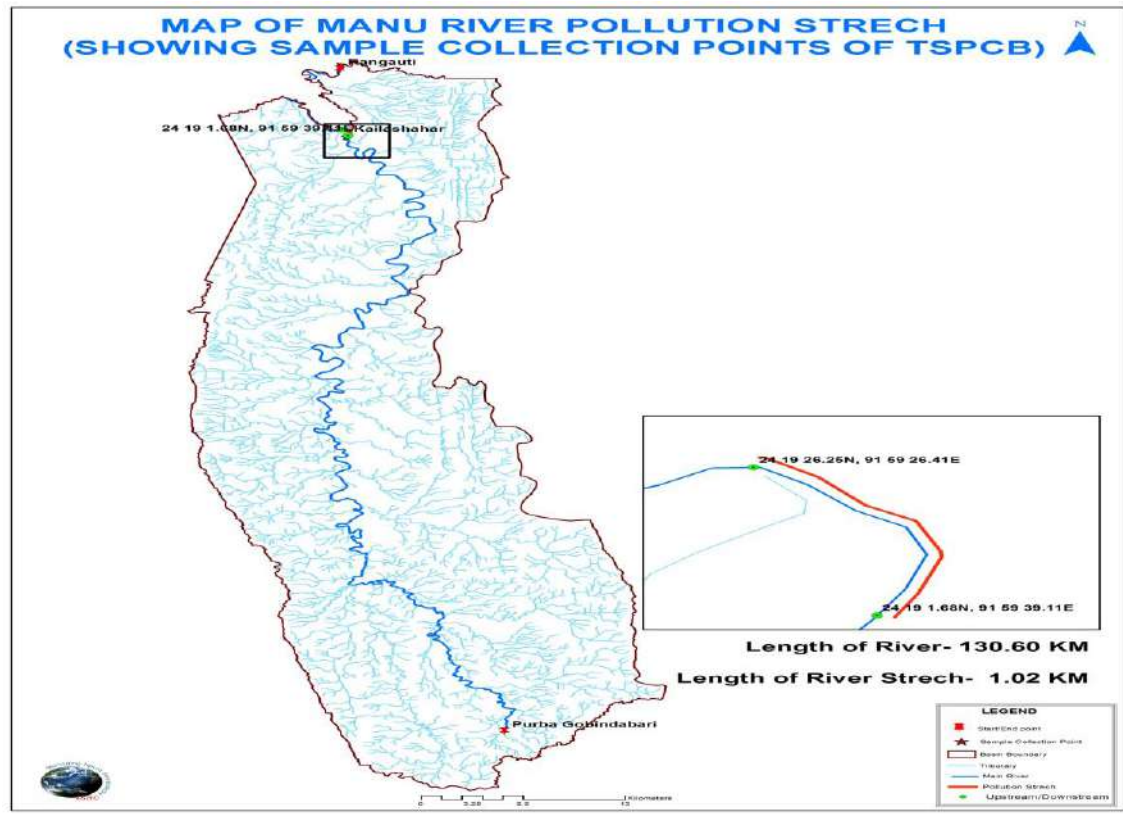


Figure-6: The map showing the Manu River stretches of Tripura.

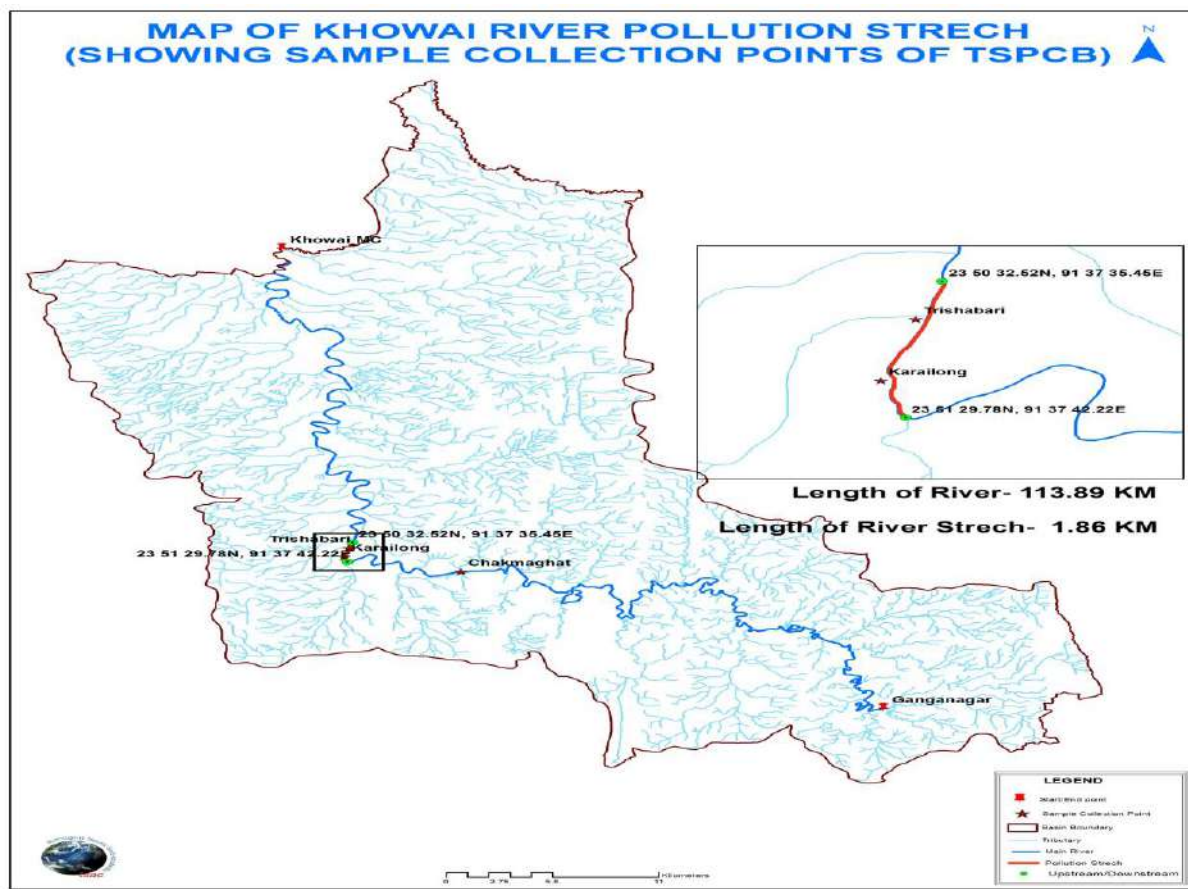


Figure-7: The map showing the Khowai River stretches of Tripura.

CHAPTER-2

2.0 BACKGROUND:

In compliance of the direction of Hon'ble National Green Tribunal, Principal Bench, New Delhi in the matter of news published in "The Hindu" authored by Shri Jacob Koshy, Titled "More river stretches are now critically polluted CPCB", Government of Tripura constituted River Rejuvenation Committee (RRC) vide memorandum No.F.8(21)/DSTE/ENV/Pt-II/7255-59 dated 01/11/2018 for effective abatement of pollution, rejuvenation, protection and management of the six identified polluted River stretches, for bringing the polluted river stretches to be fit at least for bathing purposes within six months.

CHAPTER-3

3.0 BASIS OF ACTION PLAN FOR RESTORATION OF SIX IDENTIFIED RIVER STRETCHES OF TRIPURA:

The action plan for rejuvenation, protection and management of six identified river stretches of Tripura has been formulated based on the following:

- i) Order of Hon'ble National Green Tribunal, Principal Bench, New Delhi in the matter of news published in "The Hindu" authored by Shri Jacob Koshy, Titled "More river stretches are now critically polluted CPCB".
- ii) Comprehensive Report on 'Prevention and Control of Pollution in River Hindon: An Action Plan for Rejuvenation' [Submitted in Compliance to Hon'ble National Green Tribunal]

CHAPTER-4

4.0 COMPONENTS OF ACTION PLAN:

The action plan covers the following components.

A. Source control which includes industrial pollution control and treatment & disposal of domestic sewage as detailed below:-

a. Industrial pollution control

- i) Inventorisation of industries
- ii) Categories of industry and effluent quality
- iii) Treatment of effluents, compliance with standards and mode of disposal of effluents
- iv) Regulatory regime

b. Channelization, Treatment, Utilization and Disposal of Treated domestic Sewage

- i) Identification of towns in the catchment of identified polluted river stretches and estimation of quantity of sewage generated and existing sewage treatment capacities to arrive at the gap between the sewage generation and treatment capacities;
- ii) Storm water drains now carrying sewage and sullage joining river stretches and interception and diversion of sewage to STPs
- iii) Treatment and disposal of septage and controlling open defecation
- iv) Identification of towns for installing sewerage system and sewage treatment plants.

B. River catchment/ Basin management-Controlled ground water extraction and periodic quality assessment

- i) Periodic assessment of groundwater resources and regulation of ground water extraction by industries particularly in over exploited and critical zones/blocks
- ii) Ground water re-charging /rain water harvesting
- iii) Periodic ground water quality assessment and remedial actions in case of contaminated groundwater tube wells/bore wells or hand pumps
- iv) Assessment of the need for regulating use of ground water for irrigation purposes

C. Flood Plain Zone

- i) Regulating activities in flood plain zone
- ii) Management of Municipal, Plastic, Hazardous, Bio-medical and Electrical and Electronic wastes
- iii) Greenery development- Plantation plan

D. Ecological/Environmental Flow (E-Flow)

- i) Issues relating to E-Flow
- ii) Irrigation practices

CHAPTER-5

5.0 OBSERVATION OF CPCB:

The Central Pollution Control Board reviewed the Action Plan submitted by the Government of Tripura for rejuvenation of identified six polluted River Stretches. The main observations are as follows:

- i) The action plans should have been prepared separately for individual river stretches
- ii) Map showing all the towns, industrial estates, distributaries, drains contributing to pollution to be included
- iii) Achievable water quality goals within the proposed timelines to be included
- iv) Latest water quality of polluted river, tributaries, drains with flow, as well as Ground water assessment in the catchment area to be included
- v) Town-wise water consumption by the towns and industry - wise water consumption, waste water generation, treatment system mode of disposal & the availability along the river stretch to be included
- vi) Performance assessment of existing STPs and proposal for up gradation if required to be included
- vii) Detailed gap analysis w.r.to industrial effluent management including performance of existing captive ETPs or CETPs to be included
- viii) Detailed gap analysis with regard to waste management such as, Municipal Solid waste, Plastic waste, Biomedical waste, E-waste, Construction & Demolition and Hazardous waste management to be included
- ix) Utilization of treated sewage to minimize abstraction of groundwater or use of surface water, Rain water harvesting/ground water recharge aspects, Setting up of bio-diversity parks including removal of encroachment, Interception and diversion of sewage/industrial effluent carrying drains to the STPs/ CETPs to be included
- x) Speedy, definite, specific time lines to achieve the desired goals to be included
- xi) Budget Estimates and Pooling of resources from State Budget, Local Bodies, SPCB and out of the central schemes if any, whichever is applicable to be included
- xii) Executive Summary as well as action plan - wise organization responsible for implementation, definite timeline and the budget estimate to be included.

CHAPTER-6

6.0 HIGHLIGHTED POINTS AS PER OBSERVATION OF CPCB:

6.1 MAP SHOWING TOWN, INDUSTRIAL ESTATES ETC. IN AND AROUND POLLUTED RIVER STRETCH

The map showing all the towns, industrial estates, tributaries, drains contributing to river stretches have been shown in the individual action plan for each polluted river stretches.

6.2 ACHIEVABLE WATER QUALITY GOALS WITHIN THE PROPOSED TIMELINE :

Tripura State Pollution Control Board (TSPCB) is conducting water quality monitoring on monthly basis under National Water Quality Monitoring Programme (NWMP) of Central Pollution Control Board for the six identified polluted river stretches.

From the analytical report, it has been observed that the BOD values for the above mentioned six polluted river stretches were within prescribed standard limit (3 mg/l) except for some specific months in respect of Gumati (July, 2016; September, 2016; August, 2016), Haora (July, 2016; April, 2017; July, 2017), Juri (August, 2016; September, 2016; October, 2016; July, 2016; November, 2016), Manu (July, 2016; August, 2016). The month wise analytical report in respect of BOD values for the six identified polluted river stretches are at **Annexure-I**.

The six identified river stretches have been classified in Priority V as per the observation of CPCB. Though the BOD value of the six identified river stretches were within 3 mg/l (Standard limit) from January, 2018 to May, 2019, the main goal is to maintain the water quality in all the identified polluted river stretches to the quality level fit for at least bathing standards issued by the CPCB.

6.3 LATEST WATER QUALITY OF POLLUTED RIVER, TRIBUTARIES AS WELL AS GROUND WATER ASSESSMENT :

The latest Water quality data of the various sampling location points of the six identified river stretches as monitored by the Tripura State Pollution Control Board during May, 2019 have been enclosed as **Annexure II**. **According the latest analytical data of the six river water, the BOD level and Total Coliform Count were within prescribed standard limit.** The discharge of rain water during monsoon season in to the rivers leads to dilution. This may be one of the important factor for lower level of

BOD and coliform count in the rivers.

The Ground water samples in the catchment areas of the identified polluted river stretches have been collected by Tripura State Polluted Control Board during the month of May, 2019 for the analysis of different physical, chemical and bacteriological parameters. The water samples were analyzed in the laboratory of TSPCB using standard methods given in APHA (*American Public Health Association*), 2012. The analyzed parameters of the collected groundwater samples are compared with the guidelines prescribed by Indian Standard for drinking water specification. The latest analytical datasheet of groundwater is at **Annexure-III.**

The observations are as follows:

Burigaon River along to the Bishalgarh stretches:

From the result table, it has been observed that all the ground water samples are slightly acidic in nature. Iron concentration of all the samples are beyond to the prescribed standard limit. Turbidity was found above to the standard limit in the Tube well of Bishalgarh Motorstand. The rest of the analyzed parameters are found within the standard limit for all the collected groundwater samples.

Gumti River along to the Telkajla to Amarapur streches:

The pH values of all the collected ground water samples indicate the acidic nature of the samples. Iron levels are beyond to the prescribed standard limit for four locations namely Srimantapur, Telkajla, Rajarbag and Kawamaraghat. Turbidity was found higher in the tube well of Srimantapur, Rajarbag and Kawamaraghat location. The remaining parameters are well within the standards for all the samples.

Haora River along to the Agartala to Bishramganj streches:

From the pH values it is found that all the analysed ground water samples are acidic in nature. Iron levels are beyond to the prescribed standard limit almost for all the samples except two locations at Baishamanipara of Champaknagar and Nagerjala. Turbidity was found higher in the tube well of Champaknagar. The remaining analyzed parameters are within the standards limits for all the locations.

Juri River along to the Dharmanagar stretches:

pH values for the collected samples indicate the acidic nature of the water. Iron value was found beyond to the prescribed standard limit in one location at Charubasa. The remaining analyzed parameters are within the standards limits for all the collected samples.

Khowai River along to the Teliamura streches.

From the pH values it is found that almost all the analysed ground water samples are acidic in nature. Iron concentration of almost all the samples are beyond to the prescribed

standard limit except Teliamura Fish market, Teliamura main market and Chakmaghat. Turbidity was found higher in the tube wells of Bisghar and Chakmaghat. The remaining analyzed parameters are within the standards limits for all the collected samples.

Manu River along to the Kailasahar stretches.

pH values for the collected samples indicate the acidic nature of the water. Iron concentrations of Srirampur are faintly high compared to the prescribed standard limit. Turbidity was also found beyond to the standard limit in Srirampur location. The rest of the analyzed parameters are found within the standard limit.

6.4 TOWN WISE WATER CONSUMPTION BY THE TOWNS & INDUSTRIES

Town wise water consumption from river water by irrigation as well as drinking purposes are as follows:

Table-2 : Town wise water consumption of river water

Town wise water consumption from river by irrigation structures, PWD(WR)				
Sl. No.	Name of River	Town	No. of LI	Total Consumption/ year (MCM)
1.	Burigaon	Bishalgarh	5	1.5552
2.	Gumti	Amarpur	5	1.5552
3.	Gumti	Udaipur	3	0.93312
4.	Gumti	Sonamura	1	0.31104
5.	Haora	Ranirbazar	2	0.62208
6.	Haora	Jirania	2	0.62208
7.	Haora	Agartala	4	1.24416
8.	Juri	Dharmanagar	2	0.62208
9.	Khowai	Teliamura	1	0.31104
	Manu	Kailasahar	1	0.31104
		Total	26	8.08704

The water consumption by the industries located in and around the 500 meters of the six identified polluted river Stretches are as follows:

Table-3 : Water consumption by the industries located in the catchment areas of six Rivers

River	Identified River Stretches	Type of Industries	Name & Address of the Industries	Water consumed per day
Burigaon	Along Bishalgarh	Aluminium Product	Loknath Industry, Netajinagar, Bishalgarh, Sepahijala, Tripura	20 Ltrs.(Domestic)
		Automobile Servicing	Biswakarma Engineering Workshop, Bishalgarh Bus Stand, Sepahijala, Tripura	100 ltrs.(Industrial and domestic)
			Das Engineering, Routh Khala, Satsangha Road, Bishalgarh, Tripura (Sepahijala)	20 ltrs.(domestic)
			Joyguru Engg. Workshop, Bishalgarh, near satsangha, Sepahijala, Tripura	100 ltrs.(Industrial and domestic)
			Joyram Welding House, Raghunathpur, Boxanagar Road, Bishalgarh, Sepahijala,	5 ltrs. (domestic)

River	Identified River Stretches	Type of Industries	Name & Address of the Industries	Water consumed per day
			Tripura	
			New Debnath Motors, Bishalgarh, Lalsingmura Bus Stand, Tripura (Sepahijala)	5 ltrs.
			Sonai Mechanical & Repairing workshop Jangalia, Bishalgarh, Sepahijala, Tripura	50 ltrs.(industrial) 50 ltrs.(domestic)
			Sri Krishna Engineering & Servicing, Jangalia, P.O: Bishalgarh, Tripura (Sepahijala)	500 ltrs.
			Welding House, Raghunathpur, Boxanagar Road, Bishalgarh, Sepahijala, Tripura	20 ltrs.
		Cement Product	Joy Guru Cement Pala Centre, Routh Khala, Bishalgarh, Tripura (Sepahijala)	5000 ltrs
		Ice cream	Gandheswari Food Products, Bishalgarh Chowmohani, Tripura (Sepahijala)	100 ltrs(industrial) 25 ltrs. (domestic)
			Kripa Ice Cream Factory, Bishalgarh Bridge Chowmohani, Tripura (Sepahijala)	10,000 ltrs (industrial)
			Maa Manasa Ice Factory, Raghunathpur. Bishalgarh, Tripura (Sepahijala)	100 ltrs
			Saha Ice Factory, Bishalgarh Bazar, P. O. – Bishalgarh, Sepahijala, Tripura	100 ltrs
		Paper Product	Renu Laminating and Paper Bag Manufacturing Industry, Central Road, Bishalgarh Bazar, Tripura (Sepahijala)	30 ltrs(domestic)
		Plastic Product	Renu Poly Udyog, Netaji Nagar, P.O: Bishalgarh, Tripura (Sepahijala)	10 ltrs
			Bakul Poly Industries, Vill: Raghunathpur, PO: Bishalgarh, Tripura (Sepahijala)	20 ltrs
			Loknath Enterprise, Netajinagar, Bishalgarh, Tripura (Sepahijala)	15 ltrs
		Printing Press	Renu Poly Printing Press, Central Rd, Bishalgarh Bazar, Sepahijala, Tripura	400 Kl(industrial) 100 Kl(domestic)
		Rice Mill	Hoque Rice Mill, Raghunathpur, Bishalgarh, Sepahijala, Tripura	Does not arise
			Karmakar Rice & Atta Mill, Raghunathpur, Bishalgarh, Sepahijala, Tripura	100 ltrs(industrial) 10 ltrs(domestic)
			Ramkrishna Rice Mill, Vill: RouthKhala, P.O: Bishalgarh, Sepahijala, Tripura	100 ltrs(industrial) 10 ltrs(domestic)
			Ramthakur Rice Mill, Raghunathpur, Bishalgarh, Tripura (Sepahijala)	Does not arise
			Rice Mill, Jangalia, P.O. Bishalgarh, Sepahijala, Tripura	10 ltrs
		Spice	Saha Cook Wells, New Market, Bishalgarh, Tripura (Sepahijala)	10 ltrs
			Joy Guru Steel Industries, Vill. Madhya Laxmibil, Bishalgarh, Tripura (Sepahijala)	20 ltrs(industrial)
			Joy Maa Tara SHG Industries, Vill: Jangalia, P.O: Bishalgarh, Tripura (Sepahijala)	50 ltrs
			Kusum Industry, Vill: Madhya Laxmibil, P.O: Laxmibil, Bishalgarh, Tripura (Sepahijala)	25 ltrs(domestic)
			Laxmi Iron, Bishalgarh Bazar, Sepahijala, Tripura.	100 ltrs(domestic and industrial)
			Loknath Steel & grill Industry, Jangalia, Bishalgarh, Tripura (Sepahijala)	10 ltrs(domestic)
			Maa Mansa Steel Furniture, Jangalia, Bishalgarh, Sepahijala, Tripura	20-30 ltrs(domestic)
			Priya Steel Fabrication, Netajinagar, Bishalgarh, Tripura (Sepahijala)	20 ltrs(domestic)
			Raj Steel Furniture & Grill, Jangalia (Oppt to Satsangha), P.O: Bishalgarh, Tripura (Sepahijala)	20 ltrs(domestic and industrial)
			Roy Steel Industries, Bishalgarh, Central Road, Sepahijala, Tripura	20 ltrs(domestic)

River	Identified River Stretches	Type of Industries	Name & Address of the Industries	Water consumed per day
			Rup Raj Steel Industries, Satsang Road, Bishalgarh, Tripura(Sepahijala)	10 ltrs
			Sandhya Steel Factory, Bishalgarh Bazar, Sepahijala, Tripura	10 ltrs(domestic)
			Usha Steel factory, Bishalgarh, Uttar Bazar, P.O: Bishalgarh, Tripura(Sepahijala)	40 ltrs(industrial and domestic)
			Winner Steel Industry, Bishalgarh, Sepahijala, Tripura	250 ltrs(domestic)
		Total	38	
Gumti	Telkajla to Amarpur	Automobile Servicing	Anjali Motors, Rajarbag, PO: R. K. Pur, Udaipur, Gomati, Tripura	10 ltrs.(domestic)
		Drinking water Processing Unit	Raja Raw Ghosh (A division of Food Products), Loknath Ashram Road, Chhanban, Udaipur, Tripura(Gomati)	10 Kl(domestic)
		Flex Printing	N. R. Udyog, Vill: N. S. Market, Room No.10, PO: R. K. Pur, Udaipur, Tripura (Gomati)Pin:799120	10 ltrs(domestic)
		Flour Mill	Ganapati Flour & Oil Mill, Central Rd, Udaipur, Radhakishorpur, Tripura(Gomati)	10 ltrs
			Janata Rice & Wheat Mill, Central Road, Udaipur Tripura (Gomati)	25 litrs(industrial and domestic)
		Grill & Steel furniture	Madina Iron Grill Factory, Rangamati, Amarpur, Tripura(G)	30 ltrs(domestic)
			Tarulata Grill Factory, P.O: Rajarbag, Near TRTC, Udaipur, Tripura(Gomati)	500 ltrs(industrial)
			Rupak Grill Factory, Rajarbag Bus Stand, Udaipur, Tripura (Gomati)	250 ltrs(industrial & domestic)
			Suman Super Furniture, Jawhar Road. (N. T. Road) Udaipur, Gomati, Tripura	10 ltrs
			Deb Engineering, Town Rajarbag, P. O. R. K. Pur, Udaipur, Gomati, Tripura	10-15 ltrs
			Majumder Steel & Grill Factory, Gokulpur Bazar. Gokulpur, Udaipur, Gomati, Tripura	10 ltrs(domestic)
			Maa Industries, Rajarbag, T.R.T.C. Stand, Udaipur, Tripura (Gomati)	25 ltrs
			Sree Durga Steel Furniture, Jahar Road, Udaipur, Tripura(Gomati)	250 ltrs(industrial)
			Priya Steel Furniture, Gokulnagar Bazar, P.O: Gokulnagar, Udaipur, Tripura(Gomati)	300 ltrs(industrial and domestic)
			Sree Maa Engineering, Chhanban, P.O: Rajarbag, Udaipur, Tripura (Gomati)	10 ltrs
			Pradip Steel Industries, Vill & P.O. - Nutan Bazar, Amarpur, Tripura(Gomati)	100 ltrs(domestic)
			Roy Engineering Works, Vill & P. O : Rajarbagh, Udaipur, Tripura (Gomati)	10 ltrs
			Loknath Steel Furniture, Agricultural Chowmhani, PO: Gokulpur, Udaipur, Tripura(Gomati)	20 ltrs
		Ice cream	Abani Ice Cream Factory, Natun Bazar, Amarpur, Gomati, Tripura	16 ltrs(domestic)
			Maa laxmi Ice, Vill & PO: Gakulpur, Udaipur, Gomati, Tripura Pin:799116	15 ltrs.(domestic)
			Onker Ice Factory, Vill & PO: Gakulpur, Udaipur, Gomati, Tripura	700 ltrs.(domestic)
		Sweet Factory	Prabal Mistanna Bhnader, South side of KBI Ground, Udaipur, Tripura(Gomati)	250-300 ltrs.
		Vehicle Repairing	Laxmi Narayan Mechanicals, Vill & P.O. - Gokulpur, Udaipur, Tripura(Gomati)	10 ltrs.(domestic)
		Wooden	Giridhari Wood Craft, Giridhari Road, PO: R.	10 ltrs

River	Identified River Stretches	Type of Industries	Name & Address of the Industries	Water consumed per day
		Furniture	K. Pur, Udaipur, Tripura (Gomati)	
		Total	24	
Haora	Agartala to Champaknagar	Automobile Servicing	Durga Auto Engineering Works, Jirania Block Chowmuhani, West Tripura.	50 ltrs.(domestic)
			Joyram Vehicle Servicing Centre, A. A. Road, Chandrapur, Agartala, Tripura (W)	50 ltrs(domestic) 1000 ltrs(industrial)
			Kanti Auto Engg. Works, Chandrapur, A. A. Road, Near TATA Company, Tripura (W)	10 ltrs
			Loknath Body Builders, Chanpur, P.O. - Khayerpur West Tripura	7 ltrs.
			Modern Auto Engg. Factory, Mekhlipara, A. A. Road, Khayerpur, Agartala, Tripura(W)	10 ltrs
			Mousumi Hardware And Welding House, Chanpur, P. o-Khayerpur, Agartala, West Tripura.	7 ltrs.
			National Construction, Chandpur, P.O.- Khayerpur, Agartala , Tripura (W)	10 ltrs.(domestic)
			New Super Auto Engg. Works, Vill: Mohanpur, P.O: Majlishpur, Tripura(W)	Nil
			Sharma Engineering Works, Kashipur, Opp. To Gopinath Temple, Tripura (W)	2000 ltrs.(industrial) 500 ltrs (domestic)
			Borok Servicing Centre, AA Road, Kalabagan, Jirania, Tripura(W)	3 KL(Industrial)
			Debnath Engg. Works, Chanpur, Oppt. To Saw Mill, P.O: Khayerpur, Agartala, Tripura(W)	10 ltrs
			Highway Automobiles, Chanpur, PO: Khayerpur, Tripura (W)	100 ltrs.(domestic)
			New Industrial Engineers, Khayerpur Bazar, A. A. Road, Agartala, Tripura (W)	50 ltrs.(domestic)
		Bakery	Dipankar Bakery, Pratapgarh Bazar, P.O: East Prataogarh, Agartala, Tripura(W)	200 ltrs
			Shankar Bakery, Bhattapukur Agartala, Tripura (W)	200 ltrs
			Sukhya Bakery, Ramsundarnagar, Dashamighat, Agartala, Tripura (W)	1000 ltrs.(industrial)
			The Hindustan Bakary, Town Pratapgarh, Gangail Rd. Agartala, Tripura (W)	200 ltrs (industrial and domestic)
		Brick	City Bricks Industries, Joynagar, Kalabagan, Jirania, Tripura (West)	1.050KI(Industrial, Domestic and others) (Ind: 100 ltrs, Dom.: 500 ltrs)
			Commercial Bricks Industries, Joynagar, Kalabagan, Jirania, Tripura (West)	40 KI(industrial) 10 KI(domestic)
			Janani Bricks Industries, Khamarbari, Champaknagar, Tripura (W)	2500 ltrs(industrial) 1500Ltrs(domestic)
			Janani Bricks Manufacturers. Joynagar, Jirania, Tripura (W)	500 ltrs(industrial and domestic)
			Janani Bricks, Joynagar, Jirania, Tripura(W)	3000 ltrs(industrial) 1500 ltrs(domestic)
			Joy Matadi Bricks Industries(Unit-II), Jirania, ADC Road, Agartala, Tripura(West)	200 ltrs
			Joy Matadi Bricks Industries, Jiraniakhola, Birendranagar, West Tripura	800 ltrs
			Joyram Industries, Champaknagar, Jampuijala Road, PO: Champaknagar, Tripura (W)	4500 ltrs(industrial) 3600 ltrs(domestic)
			Kalika Well-Set Bricks Industries, Vill : Khamarbari, P. O : Champaknagar, Tripura (W)	1200 ltrs.(industrial) 800 ltrs(domestic)
			Kalima Brick Industry-II, Vill: Joynagar, P.O:	30 ltrs.

River	Identified River Stretches	Type of Industries	Name & Address of the Industries	Water consumed per day
			Jirania, Tripura (W)	
			Krishna Bricks Industries, Madhabbari, Jirania, Tripura(W)	5000 ltrs(industrial) 3000 ltrs(domestic)
			Maa Sarada Bricks Manufacturing, Kalabagan, Bagan Tilla, Jirania, Tripura(W)	50 ltrs
			Maa Sarada Devi Industries, Noabadi, Jirania, Tripura (W)	800 ltrs
			National Bricks Industries, (SSB)Baskar Kobra Para, Jirania, Tripura (W)	200 ltrs
			New Ramthakur Brick Industries, Kalabagan, Bagantilla, Jirania, Tripura(W)	50 ltrs
			Nihar Bricks Industries, Kalabagan, Jirania, Tripura(W)	800 ltrs
			Purbanchal Kiln Burn Bricks, Champaknagar, Sadhupara, Jirania, Tripura (W)	30KI(industrial) 4m ³ (domestic)
			Ramthakur Industries, Vill & P.O: Champaknagar, Jirania, Tripura West, Pin:799008	200 ltrs
			Rita Bricks Industries, P. O + Vill : Khamarbari, Champaknagar, Tripura (West)	200 ltrs(domestic)
			Sagar Bricks Industry, Kalabaganm Joynagar, Jirania, Tripura(W)	200 ltrs
			Satish Bricks Company ,Jirania khala, Birendranagar, Jirania, Tripura(W)	3000 ltrs(industrial) 3000 litres(domestic)
			Shib Bricks Industries ,Jirania Khala , ADC Road ,Jirania, Tripura(W)	200 ltrs
			Sree Ram Bricks Industries, Vill: Jirania Khola, P.O:Birendranagar, Tripura(W)	3.0 KI(Industrial) 2.5 KI(domestic)
			Tripur Bricks Industry, Jirania Khola, Birendranagar, Jirania, Tripura (W)	15 KI(domestic)
			Tripur Bricks Industry, unit-II, Jirania Khola, Birendranagar, Jirania, Tripura (W)	5m ³
		Confectionery	Annapurna Mistanna Bhandar, Bardowali, AD Nagar, Agartala, Tripura(W)	500ltrs(industrial and domestic)
			Daya Harir Mistanna Bhandar, Town Pratapgarh, Road No-1, Agartala, Tripura(W)	1000 ltrs
			Mahamaya Mistanna Bhandar, Bhattapukur, Near Jahar Bridge, Agartala, Tripura West	500 ltrs
			Ramkrishna Confectionery, Town Pratapgarh, Near Ramthakur Club, Agartala, Tripura(W)	500 ltrs
			Rasaraj D'Lite, Town Bardowali (Oppt. To Manasa Mistanna Bhandar), Agartala, Tripura (W)	150 ltrs(Industrial) 300 ltrs(domestic)
		Dalmut	Banik & Co., Professor Para, P.O: College Tilla, Agartala, Tripura(West)	50 ltrs
			Modern Company, Madhya Pratapgarh, Agartala, Tripura (West)	50-70 ltrs
			New All Time, Town Pratapgarh, Gangail Road, Sree Krishna Pally, Agartala, Tripura(West)	70 ltrs.(industrial) 50 ltrs(domestic)
			Ramkrishna Confectionery & Dulmut. Town Pratapgarh, Agartala, Tripura(West)	50 ltrs
			Uma Dalmut Factory, Bardowali, East side of Jawhar Bridge, Agartala, West Tripura	200 ltrs(industrial and domestic)
		Food Processing	Loknath Industries Town Pratapgarh Rd. No.1 Agartala, Tripura(W)	50 ltrs
			Priya Home Products, Town Pratapgarh, Road No.1, Agartala, Tripura(W)	50 ltrs
			Ramthakur Home Products, Town	100 ltrs(industrial)

River	Identified River Stretches	Type of Industries	Name & Address of the Industries	Water consumed per day
			Pratapgarh, Road No. 1, P.O; Agartala College, Tripura(W)	50 ltrs(domestic)
		Hotel	Hotel Sonartari Ronaldsay Road, Agartala Tripura(W)	3000 ltrs
			Galaxy Inn, 46, Gangail Road, Melarmath, Agartala Tripura(W)	5 Kl(domestic)
			Hotel Centre Point, Mantribari Road, Agartala, Tripura (W)	5000 ltrs.(industrial)
			Hotel Joy Gobinda, N. S. Road, Agartala, Tripura (W)	3000 ltrs(industrial and domestic)
			Hotel Raj Palace, Melarmath, Agartala, Tripura (W)	4000 ltrs(hotel)
			Hotel Sankar, N. S. Road, Agartala, Tripura (W)	100-500 ltrs
			Ashirbad, Kamarpukurpar Agartala, Tripura(W)	500 ltrs
			Musafir Restaurant, Battala, Agartala, Tripura (W)	500 ltrs
			New Mayur Hotel, N.S. Road (Near M.G. Bazar), Agartala, Tripura(W)	500 ltrs
			New Sankar Hotel N.S. Road, Agartala Tripura(W)	1000 ltrs(industrial) 500 ltrs(domestic)
			Prantik Catering Centre, N. S. Road, Agartala, Tripura (W)	1000 ltrs
		Ice cream	Joyram Ice Factory, Battala, Dashamighat, Agartala, Tripura(W)	20 ltrs
			Royal Frozen, Bardowali, Oppt. To Nagerjala Motor Stand, P.O; A.D. Nagar, Agartala, Tripura(W)	500 ltrs.(industrial) 500 ltrs.(domestic)
			Suniti Ice Factory, Bhattapukur,A.D.Nagar, Agartala, Tripura(W)	20 ltrs
			Barnali Ice Cream Factory, Bordowali, Milan Sangha, A. D Nagar, Tripura (West)	1000 ltrs.(industrial) 1000 ltrs (domestic)
			Durga Ice Factory, Jirania Block Chowmohani, P.O: Birendranagar, Tripura (West)	500 ltrs.(industrial) 20 ltrs (domestic)
			Joy Ice Factory, Vill. & P.O: Jirania, Tripura(West)	2Kl(industrial and domestic)
			Joy Ram Ice Cream Factory. Debendra Chandra Nagar, Champaknagar, Tripura (West)	20 ltrs
		Paper Product	Sridhar Industries, Town Pratapgarh, Central Road Extn. Agartala, Tripura West	10 ltrs
		Plastic Product	Radha Krishna Poly Industry, Mohanpur,P.O- Majlishpur, Agartala,Tripura(West)	50 ltrs
		Printing Press	Priography, Town Pratapgarh, Agartala. Rd. No. 2., Tripura(West)	10 ltrs
			Suniti Printers, Bhattapukur, A. D. Nagar, Agartala, West Tripura	10 ltrs
		Steel Furniture & Grill Mfg. Unit	Akash Steel industries, Baldakhal, Agartala	20 ltrs
			Baba Loknath Industries, Gangali Road.M. G. Bazar. P. O. College Tilla. Agartala, Tripura(West)	10 ltrs
			Bristi Steel Industries, Baldakhal, Paul Para, P.O: Baldakhal, Agartala, Tripura(West)	100 ltrs(industrial) 10 ltrs(domestic)
			Choudhury Engineering Works, Kashipur (Near Sherowali Himghar), P.O: Khayerpur, Tripura West	30 ltrs(industrial and domestic)

River	Identified River Stretches	Type of Industries	Name & Address of the Industries	Water consumed per day
			Das Engg, Bhattapukur A. D. Nagar. Tripura (West)	20 ltrs
			Jhuma Steel Industries, Baldakhal, Agartala	10 ltrs
			Joyram Steel Industry, West Pratapgarh. A. D. Nagar. Agartala, Tripura(W)	10 ltrs
			Kali Krishna Grill Industries, Town Pratapgarh. Rd. No. 1. Gangail Road. M. G. Bazar, Agartala, Tripura (W), Pin - 2382633	20 ltrs(domestic and industrial)
			Karmakar Steel Furniture and Grill Factory, Khayerpur, Trinath, P.O. - Khayerpur, Tripura(West)	7 ltrs(domestic)
			Maa Arati Steel Engineering works Mohanpur (Opp. Kalibari) Majlishpur, Tripura(West)	300 ltrs(domestic)
			Maa Manasa Steel Furniture, Baldakhal, P.O: West Champamura, Tripura(West)	25 ltrs(domestic)
			Manika Steel Craft, Joynagar, Dashamighat, Agartala, West Tripura	20 ltrs
			Manoj Steel Factory, Vill. & P.O: Champaknagar, Jirania, Tripura(West)	10 ltrs
			Mithun Steel Industries, Baldakhal, Paul Para, P.O: Baldakhal, Agartala, Tripura(West)	20 ltrs
			Purnima Welding House, Baldakhal, PO: West Champamura, Tripura(West)	25 ltrs
			Sabitri Enterprise, Khayerpur Trinath, PO- Khayerpur, Agartala. Tripura(West)	7 ltrs(domestic)
			Steel King, Jogendranagar (Near Vidyasagar Bridge) Agartala, Tripura West	10 ltrs
			Steel Well Industries, Jogendranagar, Agartala, Tripura(West)	20 ltrs
			Sukanta Steel Industries, Paulpara, Baldakhal, Champamura, Tripura (West)	80 ltrs(industrial) 10 ltrs(domestic)
			Suman Steel Factory, Pratapgarh Bazar, P.O: Pratapgarh, West, Tripura	20 ltrs(domestic)
		Total	97	
Juri	Along Dharmanagar	Brick field	Sri Bricks Industry, Unit-II, Pekucherra, P.O. - Jalabasa, Dharmanagar, North, Tripura	1000 litrs
			Swarupananda Brick Industry, Jalabasa, Panisagar, Dharmanagar, North, Tripura	2.5 KI(Industrial) 1.5 KI(domestic)
			Narayan Bricks Industries, Jalabasa, Dharmanagar, North, Tripura	5cum(industrial) 2cum(domestic)
			Sri Construction, Jalabasa (Pekucherra), Dharmanagar, North, Tripura	3.5 cum(industrial) 2cum(domestic)
		Repairing and Servicing Centre	Jain Udyog (Auto Division), College Road, Dharmanagar, North, Tripura	0.5 cum(industrial) 50 litrs(domestic, drinking)
		Total	05	
Khowai	Along Teliamura	Brick field	Ram Krishna Bricks Industries, Chalita Bari, Teliamura, Tripura(Khowai)	20 KI(industrial)
			Tripureswari Small Bricks Industry, Icharbill, Karailong, Teliamura, Tripura(Khowai)	2000 ltrs
			Ghosh Brick Industry Dwarikapur, Kalyanpur, Teliamura, Tripura(Khowai)	2000 ltrs

River	Identified River Stretches	Type of Industries	Name & Address of the Industries	Water consumed per day
			Diya Brick Industry, Dwarikapur, Kalyanpur, Teliamura, Khowai, Tripura	1500 ltrs
			Kaibalya Nath Brick Industries Laltilla, Moharcherra, Teliamura, Tripura(Khowai),	3000 ltrs
		Total	05	
Manu	Along Kailashahar	Brick field	Sagar Engineering Co-Operative Society Ltd., Durgapur, B.C. Nagar, Kailashahar, Tripura (Unakoti)	500 ltrs
			Joy Ram Bricks Industries, Krishnanagar, Kumarghat, Unakoti, Tripura, Pin : 799290	2000 ltrs(industrial) 500 ltrs(Domestic)
			Krishnanagar Bricks Industry, Krishnagar, Kailashahar, Unakoti, Tripura	1000 ltrs
			Soma Mechanised Bricks Industry, Vill : Nidebi, P.O. Kumarghat, Unakoti, Tripura, Pin : 799264	1500 ltrs
			Manu Bricks Industries, East Ratacherra, Fatikroy, Unakoti, Tripura	3000 ltrs(industrial) 1500 ltrs(domestic)
			Ramthakur Bricks Industries, Saidarpar, Kumarghat, Kailashahar, Unakoti, Tripura	1500 ltrs
			Allied Bricks Industry (Unit – II), Sonaimuri, Kumarghat, Tripura (Unakoti)	1500 ltrs
			Asha Bricks Construction, P.O. Chantail, Kailashahar, Tripura(Unakoti)	1000 ltrs
			United Bricks Industry, Chantail, Kailashahar, Unakoti, Tripura	2000 ltrs
			Soma Bricks Industry, Nidabi, P.O. Kumarghat, Tripura (Unakoti)	1500 ltrs
		Total	10	

6.5 PERFORMANCE ASSESSMENT OF EXISTING STP & PROPOSAL FOR UP GRADATION

Performance Assessment: The capacity of 8 MLD of Agartala Sewerage Treatment Plant is sufficient to cater to the needs of future 40 years population of greater Agartala city. It is one of the big Treatment plants in the North-East zone and among the few in India utilizing the Cyclic Activated Sludge SBR Technology. The sewage from the urban settlements contains nutrients, so the waste water from the sewage treatment plant can be used for irrigation/fodder cultivation/gardening etc. Moreover, the stabilized and dried sludge from the treatment plant as manure can be used for cultivation very well.

ODF ++ Protocol (Scientific faecal sludge collected from septic tanks i.e. Septage Management- scientific collection, transportation and treatment of septage as to prevent contamination of water bodies, rivers, food chain etc with faecal material) will be declared for six ULBs i.e. Agartala Municipal Corporation, and nearby Mohanpur

Municipal Council, Ranirbazar Municipal Council, Jirania Nagar Panchayat, Bishalgarh Municipal Council by February 2019 as these ULBs can collect and transport septage by Cesspools (truck mounted mechanical suction machines & tanks) for treatment to the Sewage Treatment Plant at Agartala. Septage Treatment facilities may be created for remaining 14 ULBs in near future as per availability of funds from the State/Center.

Future Up Gradation: The plant is designed for 40 years so there is no plan for up-gradation of the plant. Agartala Municipal Corporation will go for scientific faecal sludge management in smaller units in near future in the other zones. This initiative will be very cost effective and must ensure maximum prevention of contamination of the sewer into the storm water drainage system of the city which finally goes to the river.

The tender has been floated for construction of another 8 MLD Sewage Treatment Plant at Akhaura Gol Chakkar area in Agartala for treatment of water of Akhaura Channel before discharge into Bangladesh.

Similarly proposal to construct six number of Sewage Treatment Plants/Septage Treatment Plants one each in Bishalgarh, Dharmanagar, Udaipur, Kailashahar, Teliamura and Amarpur town will be forwarded to the State Government for approval and funding.

6.6 DETAILED GAP ANALYSIS WITH RESPECT TO INDUSTRIAL EFFLUENT MANAGEMENT INCLUDING PERFORMANCE OF EXISTING ETPS

There are classified industrial estates with infrastructural facilities alongwith CETP for setting up of any industries in Tripura. However, some small scale industries have also been set up randomly throughout the State.

According to the Consent Register of Tripura State Pollution Control Board the list of industries categorically located in and around the catchment areas of the six identified polluted river stretches are enclosed as **Annexure-IV** :

No large scale waste water generating industries are located in and around the catchment area of the six identified river stretches. There are some small scale industries are there. Directions have been issued by TSPCB to all such units which do not have ETP to build their own such setup.

There are four industrial estates such as Budhjungnagar, A.D. Nagar, Badharghat, Dukli

River Rejuvenation Committee, Tripura

industrial estates and Dhajanagar in the catchment area of six identified river stretches. One CETP is operating in the Budhjungnagar industrial estate. The other three industrial estates such as A.D. Nagar, Badharghat and Dukli does not have any large scale industries. Some waste water generating industries are proposed to set up. These industries will be use CETP located at Budhjungnagar.

6.7 DETAILED GAP ANALYSIS WITH REGARD TO WASTE MANAGEMENT

i) Municipal Solid Waste : In Tripura, apart from the Agartala Municipal Corporation, there are 19 Urban Local Bodies and 26 Census Towns. As per the 2011-Census, the population of Agartala is 4,00,004. The population of other local bodies ranges from 7,000 to 41,000 and the population of 26 Census Town is 2.91 lakhs. The estimated Solid Waste generation of the State is 583.5 TPD (Tons Per day), of which Agartala City itself generates about 241.1 TPD. The Ranirbazar Municipal Council and Jirania Nagar Panchayat generate 7.2 TPD and 6.3 TPD respectively.

The salient features of the Solid Waste Management Policy include stakeholder involvement, emphasis on door-to-door primary collection along with source segregation of waste, measures of prevention, minimization, re-use, recycling, recovering and disposal, etc. The Policy acknowledges the primary role played by the informal sector such as waste collectors, waste pickers, women self-help groups, etc.

Further, for effective implementation of SWM Rules, 2016, the Government of Tripura has framed the Tripura Municipal Solid Waste (Management & Handling) Cleanliness and Sanitation Rules, 2019 under Section 274 of the Tripura Municipal Act, 1994 to provide effective legal framework for compliance of the SWM Rules, 2016. The said Rules have been notified 08.03.2019. These Rules have been adopted from the Model Draft SWM Rules for States prescribed by the Ministry of Housing and Urban Affairs (MoHUA), Government of India.

The Government of Tripura have identified the clusters for waste management covering all the urban local bodies. The district level clusters are as follows:

Table-4 : Proposed Cluster of Solid Waste Management Disposal Site

Sl. No.	Cluster	Name of Urban Local Bodies
01.	Cluster 1	Agartala Municipal Corporation, Ranir Bazar MC, Mohanpur MC, Bishalgarh MC, Jirania Nagar Panchayat (already operational)
02.	Cluster 2	Sonamura Nagar Panchayat and Melaghar MC
03.	Cluster 3	Udaipur MC and Amarpur Nagar Panchayat
04.	Cluster 4	Santir Bazar MC, Belonia MC and Sabroom NP
05.	Cluster 5	Khowai MC and Teliamura MC

06.	Cluster 6	Ambassa MC and Kamalpur MC
07.	Cluster 7	Kumarghat MC and Kailashahar MC
08.	Cluster 8	Panisagar NP and Dharmanagar MC

A 250 TPD capacity Solid Waste Processing Plant (composting) have already been set up at Devendra Chandra Nagar which is operational. This Plant is also catering the processing of solid waste from nearby 4 smaller urban local bodies, i.e., Bishalgarh Municipal Council, Mohanpur Municipal Council, Ranirbazar Municipal Council & Jirania Nagar Panchayat.

These 4 urban local bodies are located within 10-15 Kms. from the periphery of Agartala city and it is economical for them to transport their solid waste on daily basis to the 250 TPD SWM plant at Agartala rather than to operate and maintain their individual solid waste processing plant.

All the ULBs have been instructed to ensure door to door solid waste collection along source segregation and treatment of collected biodegradable solid waste by 31st March 2019 as per the deadline given by MoHUA, Gol. Door to door waste collection along with source segregation and treatment of solid waste is mandatory as per the Municipal Solid Waste Rules-2016 and as per the verdicts of Hon'ble National Green Tribunal (NGT).

DPR for Solid Waste Management under Swacch Bharat Mission (urban) have been forwarded to MoHUA, Gol for sanction. Sanction is awaited from Gol. There are proposals to set up Solid Waste Processing Plants 8 (eight) cluster locations which will cater the needs of all the 20 ULBs including Dharmanagar, Kailashahar, Udaipur, Bishalgarh, Amarpur, Teliamura. Total estimated cost of the DPR is 54.49 Crore.

The Disposal of plastic wastes and other garbage is already prohibited by the State Government. Further, burning of all type of agricultural waste, leaves, litter, paper wastes and garbage has been banned by the Government of Tripura. A copy of the said notification is enclosed as **Annexure-V.**

ii) Construction and Demolition Waste : At present, total about 20.75 MT per day of Construction and Demolition Waste is being generated in 20 Urban Local Bodies of the State, of which about 5.00 MT per day Waste is being generated in Agartala Municipal Corporation (the capital city) alone. Already separate storage, collection and transportation of demolition waste are being ensured. It is planned to set up units for manufacturing of eco-bricks, mechanical hollow bricks, paver blocks, etc., on PPP basis, using construction and demolition waste. The urban local bodies themselves can have buy-back arrangements for procuring and

using these products for their own construction works. This is planned to be done in 8 District-level Clusters, in the locations where Solid Waste Processing Plants are being set up.

iii) Bio-Medical Waste:

State Level Advisory Committee (SLAC) was constituted under the chairmanship of Principal Secretary, Urban Development Department for the effective implementation and monitoring of the Plastic Waste Management Rules 2016 throughout the State.

As per data obtained from Tripura State Pollution Control Board, total about 1606.59 Kg of Bio-medical waste is generated per day in Tripura by a total number of 1,890 Health Care Facilities/ Occupiers & most of the Private Healthcare facilities have their own captive autoclave & deep burial pits.

In compliance of Rule 4(i), the Bar-Code System for bags or containers containing bio-medical waste to be sent out of the premises or place for any purpose shall be established with Common Bio-Medical Waste Treatment Facility (CBWTF) implementation. Agency has already been selected to set up and operate CBWTF Plant after following tender process and this Agency shall facilitate implementation of the Bar-Code system after operationalization of CBWTF.

iv) Plastic Waste Management :

The State Level Advisory Committee conducted meeting on 04.07.2017 and formulated an action plan for effective implementation of the Plastic Waste Management Rules 2016.

Government of Tripura, in exercise of powers conferred by section 5 of the Environment (Protection) Act, 1986, imposed total ban on plastic carry bags, including its manufacture, import, storage, transport, sale and use in Tripura vide its notification dated 10.03.2015.

The Government of Tripura has issued a notification dated 04.06.2018 regarding imposition of monetary penalty as “Pollution Cost” on violation of plastic carry bag ban. The rates are as follows:-

- Permanent shops/establishments -Rs.1000 to Rs.3000/-
- Temporary or mobile shops/establishment -Rs.500 to Rs.1500/-
- Individual User - Rs. 100/- only

District Level Monitoring Committees, under the chairmanship of District Magistrate & Collectors have been constituted for effective implementation of the banning order of plastic carry bags. District Level Monitoring Committees conducted meeting for effective implementation of the banning order of plastic carry bags on regular interval.

TSPCB and other authorised Government departments conducted raids in different bazaar areas. An amount of Rs. 2,43,700/- (Rupees two lakh forty three thousand seven hundred) only has been collected as “pollution cost” so far.

As per the Annual Report of Plastic Waste Management Rules, 2016 for the year 2017-18 submitted by the Tripura State Pollution Control Board, the plastic waste generation in Tripura is 28.5 TPA.

v) Hazardous Waste Management: In Tripura, there are total 171 Industrial units identified as Hazardous Waste Generating Units. As per available data, the quantity of Hazardous Waste generated in the State is 272.62 MTPA. However, since the data is old, the Chief Secretary directed in the meeting on 26.03.2019 that a fresh survey for inventorisation of hazardous and other waste shall be undertaken, with assistance of expert organization, where necessary.

Presently, the Hazardous Waste generated by the industries is generally stored in the containers within the occupier premises. The quantity of recyclable waste, incinerable waste and utilizable waste was sent to the Assam State for recycling/ re-processing/ utilization/ disposal of the hazardous waste. The land-fillable hazardous waste is disposed of in a captive secured landfill within the State. Presently, there are 6 (six) industrial units/ occupiers who have obtained authorization from the TSPCB under provisions of Rules 6 of the Hazardous & other Wastes (Management & Transboundary Movement) Rules, 2016.

As of now, no common Treatment, Storage & Disposal Facility (TSDF) for Hazardous Waste has been set up in the Tripura State till date. Since the total quantum of hazardous waste generated in the State is relatively small, the State Government has taken up the matter with Government of Assam and also with the Ministry of DoNER to permit sharing of proposed Common TSDF in Assam with the State of Tripura. This has been done as per recommendation of the Monitoring Committee.

The State Government has prepared an Action Plan for effective implementation of Hazardous & Other Wastes (Management & Transboundary Movement) Rules, 2016.

6.8 UTILIZATION OF TREATED SEWAGE:

At present the treated water produced in the sewerage treatment plant is partially used for watering of municipal gardens and watering of roads during dry seasons and part of the water is discharged to the storm water drainage of katakhal. Further the detailed plan for use of treated water are as follows:

a) Watering of gardens and Open Spaces in Agartala city :

There are 12-15 parks, gardens, other open spaces in Agartala City which require watering on daily basis. Municipal water tankers collect the treated water from the storage tanks at the Sewage Treatment Plant and supply the same to these parks/ gardens for watering. A few photographs regarding this are enclosed. A dedicated team has been formed in the Agartala Municipal Corporation for maintenance of parks & gardens in the city and the team is responsible for this purpose. In the bigger park underground water reservoir will be created to store the water supplied by municipal water tankers and the water will be used for watering the gardens using lifting mechanism & sprinklers. Funds available under 14th Financial Commission/ own resources of Municipal Corporation will be used for this purpose. Instruction has been issued from Agartala Municipal Corporation that, for the purpose of watering public gardens and parks and watering of roads the only the treated water from the Sewage Treatment plant will be used and no case the drinking water from water treatment plants will be used for this purpose. Notification

b) Roads watering in dry seasons:-

During dry seasons there is lot of dust in the air because of movement of vehicles on the road within Agartala city. To counter this problem daily watering of the roads is being done using municipal water tankers in the morning on all major roads of Agartala City during the months of November to April every year.

c) Irrigation of Agricultural fields:-

During the dry season the agricultural field which are located in the vicinity of the Sewage Treatment Plant will be provided the treated water for the purpose of irrigation. For this purpose the water will be discharged in the nearby agricultural field using water tankers or water pipelines installed for this purpose.

d) Provision for future Sewage Treatment Plant:-

Action Plan for utilization of treated water which will be produce in the Sewage Treatment Plant will be included as an integral part of the project from the inception itself so that the treated water from such projects is not be wasted

6.9 GROUND WATER EXTRACTION AND QUALITY ASSESSMENT :

The details of groundwater resources and groundwater extraction by industries are as follows:

Table-5 : Details of groundwater resources and groundwater extraction by industries

Annual Groundwater Availability	:	2358 mcm
Draft	:	163 mcm

Stage of Development	:	7%
Projected demand up to	:	2025-200 mcm
Available for future irrigation Use	:	2065 mcm
Ground water extraction by industries	:	222 M ³ /day

The annual groundwater draft of the state is 163 mcm, whereas the availability is 2358 mcm. As per Ground Water Resources Estimation, Tripura State Falls under safe category and there is "No Over Drawl" of Ground Water anywhere in State of Tripura including the 6(six) identified River stretches.

The detail regarding use of groundwater for irrigation purposes in the catchment areas and river water uses of the six identified polluted river stretches alongwith other irrigation practices are as follows:

Table-6 : Detail regarding use of groundwater for irrigation purposes in the catchment areas

Name of River	Ground Water	River Water	Irrigation practices	Groundwater recharging mechanism
Burigaon	2.16 mcm	18.662 mcm	Minor and medium irrigation schemes such as LI, DTW, Diversion, Barrage etc	<ul style="list-style-type: none"> • Recharging of groundwater are being done by medium irrigation projects and Diversion schemes indirectly. • Recharging of groundwater are also being done by creation of pond/lake under MNREGA.
Gumti	4.32 mcm	107.72 mcm		
Haora	3.345 mcm	9.02 mcm		
Juri	1.375 mcm	11.508 mcm		
Khowai	1.179 mcm	54.22 mcm		
Manu	0.69 mcm	30.27 mcm		

Tripura State Pollution Control Board already issued direction to all industries located in the catchment areas of the identified river stretches to submit a declaration in the form of affidavit regarding disposal of effluent and extraction of ground water (**Annexure-VI**)

6.10 FLOOD PLAN ZONE (FPZ)

The detail of flood plain area for the identified six polluted river stretches are as follows:

Table-7 : Detail of flood plain area for the identified six polluted river stretches

Name of river	Flood plain areas
Burigaon	Laxibil, Chandranagar, Naraura, Raghunathpur, Jangalia, Kadamtali, Gazaria, Dhakarbari, Rahimpur, Rangapani, Sikria, Andigang
Gumti	Uttar Maharani, Udaipur, Palatana, Shilghati, Melaghar, Sonamura

Name of river	Flood plain areas
Haora	Khayerpur, Kashipur, Baldakhal, Aralia, Jogendranagar, Joynagar (Dashamighat)
Juri	Satshangam, Kadamtala, Sharaspur, Churaibari, Maheshpur, Laxminagar, Bishnupur, Chandrapur, Dharmanagar, Radhapur
Khowai	Dashamighat (TLM), Baishghar, Maiganga, Isharbill, Hadrai, Moharcherra, Kalyanpur and Dwarikapur
Manu	Latiapura, Srirampur, Kailasahar, Chantail, Jalai, Pecherdhahar, Dalogaon, Fatikroy, Taraninagar, Masauli

The PWD (Water Resource) Department, Government of Tripura prepared Flood Plan Zoning maps showing the flood plain area for the six identified river stretches. The Flood Plan Zoning maps have been enclosed as **Annexure-VII**.

6.11 GREENERY DEVELOPMENT- PLANTATION PLAN:

Forest Department raises afforestation in degraded forestland, creates river bank plantations along rivers/streams and also raises roadside plantations in the State besides creating check dams/water harvesting structure in forest areas for the purpose of soil & water conservation. These plantations and the soil & water conservation structures help to control the flow of runoff water directly to rivers or low lying areas in rainy seasons reducing thereby soil erosion. These helps to impounded and re-charge the ground water. These in turn, rejuvenate the local streams and other cherras and also become a source of water for wild animals and also for other purposes for local people during dry spell of the year. These measures in turn help to maintain the health of the rivers and also help in reducing pollution in river by maintaining continuous inflow of river water towards downstream. River bank plantations are normally raised with bamboo species, as it is good soil binder, to stabilize the bank of the rivers from erosion.

Forests Department in its regular programme has taken measures in regard to greenery development by raising plantations/river bank plantations/creating check dams in the catchment stretches/areas of the 6(six) identified polluted river.

The status of greenery development plantation raised during last three years (2016-17 to 2018-19) is as follows:

Table-8 : Status of greenery development plantation raised during last three years (2016-17 to 2018-19)

Name of polluted river	River stretches	Plantation in the catchment areas (ha)	River bank plantation in tributaries of the polluted rivers in the catchment areas (km)	Check dam created in catchment area (no/ha)
Burigaon	Along Bishalgarh	449	14	1/1
Gumti	Telkajila to	987	131	8/5.5

Name of polluted river	River stretches	Plantation in the catchment areas (ha)	River bank plantation in tributaries of the polluted rivers in the catchment areas (km)	Check dam created in catchment area (no/ha)
	Amarpur			
Haora	Agartala to Champaknagar	441	Nil	Nil
Juri	Along Dharmanagar	65	Nil	6/1.5
Khowai	Along Teliamura	1037	5	5/5
Manu	Along Kailashahar	231	1	10/13

The future plan for taking measures for greenery development in next three years (2019-20 to 2021-22) is as follows. The activities are proposed to be taken subject to availability of fund under MGNREGA and under any other schemes.

Table-9 : Future plan for taking measures for greenery development in next three years (2019-20 to 2021-22)

Name of polluted river	River stretches	Plantation to be created in the catchment areas (ha)	River bank plantation in tributaries of the polluted rivers in the catchment areas (km)	Check dam to be created in catchment area (no/ha)
Burigaon	Along Bishalgarh	1st year : 165 2nd year : 182 3rd year : 200	1st year : 5 2nd year : 8 3rd year : 10	1st year : 5 2nd year : 10 3rd year : 15
Gumti	Telkajila to Amarpur	1st year : 362 2nd year : 398 3rd year : 438	1st year : 45 2nd year : 50 3rd year : 60	1st year : 10 2nd year : 15 3rd year : 25
Haora	Agartala to Champaknagar	1st year : 162 2nd year : 178 3rd year : 196	1st year : 5 2nd year : 8 3rd year : 15	1st year : 5 2nd year : 8 3rd year : 10
Juri	Along Dharmanagar	1st year : 24 2nd year : 26 3rd year : 29	1st year : 10 2nd year : 15 3rd year : 20	1st year : 8 2nd year : 12 3rd year : 15
Khowai	Along Teliamura	1st year : 381 2nd year : 419 3rd year : 461	1st year : 8 2nd year : 12 3rd year : 15	1st year : 10 2nd year : 12 3rd year : 15
Manu	Along Kailashahar	1st year : 85 2nd year : 94 3rd year : 103	1st year : 5 2nd year : 8 3rd year : 12	1st year : 8 2nd year : 10 3rd year : 15

6.12 SAND MINING IN RIVER STRETCHES:

There has been no account of illegal sand mining in the 6 rivers stretches except one illegal sand mining in the Burigaon River. The joint patrolling by Forest department with local police personnels are being carried out for controlling carrying of illegally collected sand. The 32 nos. of lifting pump machine, generator etc. which were used for illegal sand mining have been seized by the Forest Department. As part of the future plan, a Sub Divisional Level

Expert Appraisal Committee (SDEAC) under Jampuijala sub division has been constituted to identify the illegal sand mining spots across the Burigaon river.

6.13 ACTIVITIES UNDERTAKEN UNDER SWACHHA BHARAT MISSION :

The State Government has undertaken a number of initiatives and actions Swachha Bharat Mission (Urban) which includes all the towns and areas in the catchment of six identified polluted river stretches in the State. Some of the achievements, ongoing activities and planned activities are mentioned below:

- All the 20 Urban Local Bodies in Tripura declared ODF Status on 31st December 2018.
- Total revised target of State (for all 20 ULBs) Individual household Latrines (IHHL) as per MoHUA, GoI for ODF-**14534**.
- Achievement of IHHL construction under SBM (Urban) in the State (geo-tagged) as on date: **16248**
- Status of Toilet construction in the ULBs on the banks of identified rivers.

Table-10 : Status of Toilet construction in the ULBs on the banks of identified rivers

Sl No	Name of the Urban Local Body	Total Toilets constructed (geo-tagged) under SBM (Urban) from August 2018 till 27 th January 2019
1.	Agartala Municipal Corporation	4933
2.	Dharmanagar Municipal Council	578
3.	Udaipur Municipal Council	1249
4.	Bishalgarh Municipal Council	584
5.	Kailashahar Municipal Council	626
6.	Teliamura Municipal Council	480
7.	Amarpur Nagar Panchayat	467

- Total 50 number of Community toilets having 500 seats have been sanctioned for sanitation access to **slum habitations** where individual toilets van not be constructed. 25 toilets for Agartala and remaining 25 for other 19 ULBs. Community Toilets are under various stages of construction. All the Community Toilets are under different phases of construction and are expected to be completed by March 2019.

The number of Community Toilets in the above towns is as follows:

Table-11 : Status of Community Toilet construction in the ULBs

SI No	Name of the Urban Local Body	Community Toilets (10 seated) under construction under SBM (Urban)
1.	Agartala Municipal Corporation	25
2.	Dharmanagar Municipal Council	3
3.	Udaipur Municipal Council	3
4.	Bishalgarh Municipal Council	2
5.	Kailashahar Municipal Council	2
6.	Teliamura Municipal Council	2
7.	Amarpur Nagar Panchayat	2

- ODF + protocol (proper operation and maintenance of Community and Public toilets on sustainable basis) will be ensured by 28th February 2019.
- Agartala Municipal Corporation, Dharmanagar Municipal Council Udaipur Municipal Council, Bishalgarh Municipal Council , Kailashahar Municipal Council , Teliamura Municipal Council Amarpur Nagar Panchayat have been instructed to remove all the kaccha toilets is any from the bank of the river and either convert it into sanitary pucca toilets or to construct Community Toilets for such habitations.

CHAPTER-7

7.0 THE BURIGAON RIVER (ALONG BISHALGARH) REJUVENATION ACTION PLAN

The Burigaon River is very small one originating from Baramura Hill. The details of the rivers is as follows:

Table-12 : Details of the Burigaon River

Name of river	Details of river	Identified polluted river stretch	Coordinates/ length of identified polluted river stretch
Burigaon	It is a small river originating from Baramura Hill. The river flows through Jampuijala, Takarjala, Dyayrampara, Golaghati, Bishalgarh, Gopinagar, Baderdighi and finally enters into Bangladesh.	Along Bishalgarh	For Up stream Latitude : 23°40'39.12"N Longitude :91°17'4.64"E For Down stream Latitude : 23°40'17.29"N Longitude :91°16'49.1"E Approximate Length of polluted river stretches : 0.94 km

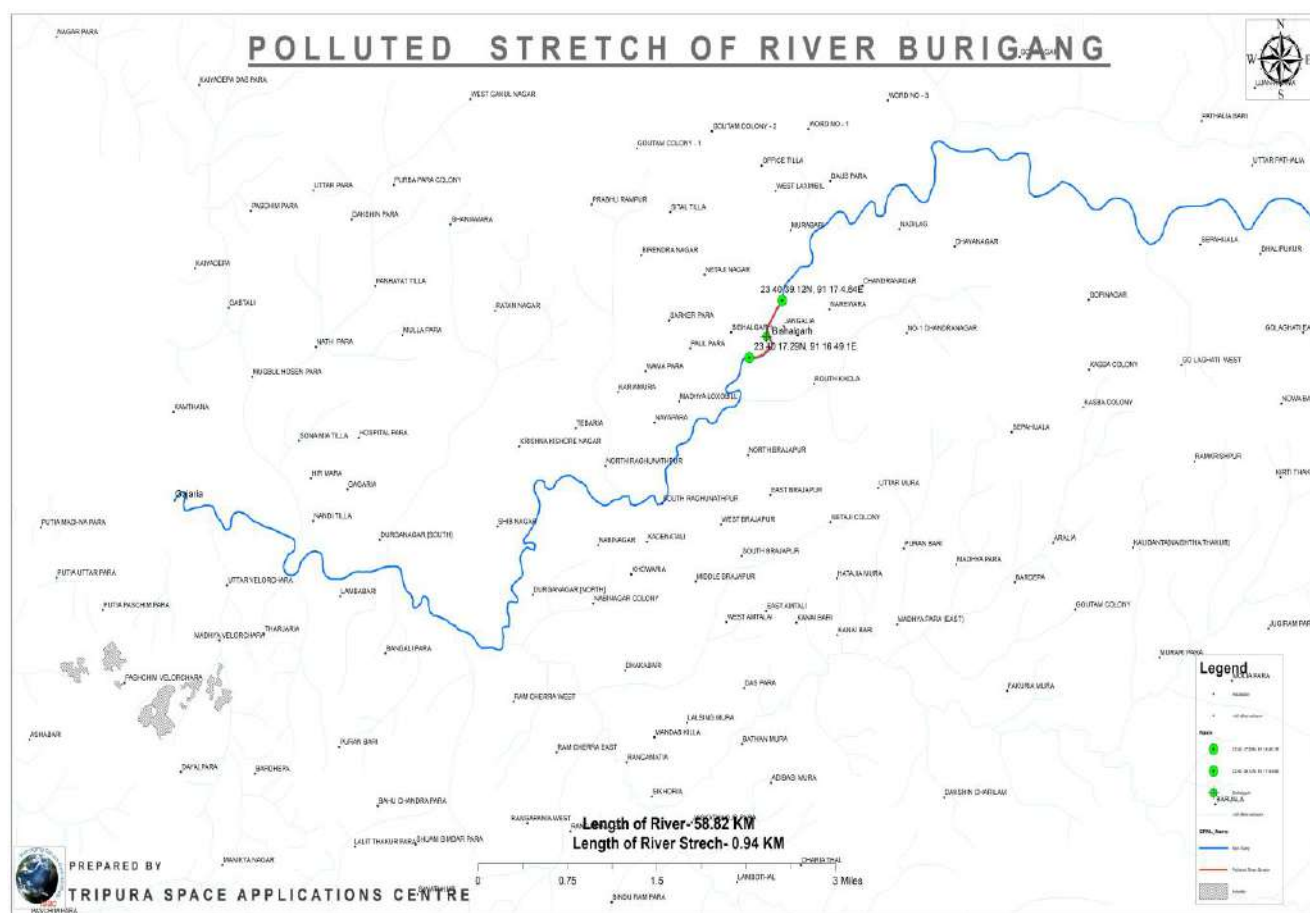


Figure-8: The map showing the town and other tributaries of Birigaon River

i) According to the Consent Register of Tripura State Pollution Control Board, there are 38 industries are located in the catchment areas of the Burigaon River in the identified stretches. The category of the industries are mainly Alluminium, Automobile servicing, Cemented product, Rice mill, spice, paper, plastic and printing press etc. The list of industries categorically located in and around 500 meters of the polluted river stretches are as follows:

Table-13 : List of industries located in and around 500 meters of the polluted Burigaon river stretches

Sl. No.	River	Identified River Stretch	Type of Industries	Category	Number of Industries	Quantity of Industrial waste (Approx. in Liters)
1.	Burigaon	Along Bishalgarh	Aluminum Product	Orange	01	NIL
			Automobile Servicing	Orange	08	45
			Cement Product	Green	01	15
			Ice cream	Orange	04	650
			Paper Product	Green	01	NIL
			Plastic Product	Green	03	NIL
			Printing Press	Orange	01	NIL
			Rice Mill	Green	05	700
			Spice	Green	01	NIL
			Steel Furniture & Grill Mfg. Unit	Orange	13	NIL
			Total			38

No highly polluting industries are located in and around the catchment area of Burigaon River. Directions have been given by TSPCB to all such units which do not have STP/ETP to build their own such setup.

The Tripura State Pollution Control Board (TSPCB) issued show Cause notices to the industries who are not renewed the Consent to Operate Certificate. The copy of the Show Cause Notice is enclosed as **Annexure-VIII**.

TSPCB also directed to all Auto servicing stations as well as other industries to set up Effluent Treatment Plant (ETP) and make it fully operational, failing which Closure Order will be issued for non compliance. The copies of the directions are enclosed as **Annexures-IX**

The major sources of pollution are non-point sources which includes residential houses, commercial establishments, hospitals and garages etc.

ii) Bishalgarh Municipal Council is located in the catchment areas of the Haora River. The Solid waste generation from the Bishalgarh Municipal Council are as follows:

Table-14 : Solid Waste generation in Bishalgarh Municipal Council

S. No	Name of ULBs	Estimated Waste Generation (TPD)
1	Bishalgarh Municipal Council	11.6

The solid wastes generated by the three urban local bodies are being collected by the concerned Urban local body and transported to Solid waste Management Facility located at Debendrachnadra nagar, Agartala.

DPR for setting up of Solid Waste Management Disposal Site under Swacch Bharat Mission (urban) for 8 (eight) cluster locations which will cater the needs of all the 20 ULBs including Dharmanagar, Kailashahar, Udaipur, **Bishalgarh**, Amarapur, Teliamura have been forwarded to MoHUA , Government of India. Sanction is awaited from Government of India. Total estimated cost of the DPR is 54.49 Crore.

- iii) The major Health care facilities are located in and around the catchment areas of the Burigaon River are as follows:

Table-15 : Bio Medical Waste generation in Bishalgarh Municipal Council

Name of The Hospital	No. of Beds	Generation of wastes (Kg/day)	Existing Treatment Capacity (Kg/day)			
			Incinerator	Autoclave	Deep Burial	Any other
Bishalgarh Sub Divisional Hospital	55	13.8	-	1.5	35.4	0.6

A Common Bio-Medical Waste Treatment Facility (CBWTF) has been set up at Agartala. All Health care facilities located in the catchment areas of the Burigaon river to be directed to dispose the Bio-Medical Wastes at the CBWTF.

- iv) The state has achieved 100% open defecation free status.

The detailed action plan for rejuvenation of Burigaon River stretches are as follows:

Table-16 : Detailed Action Plan for rejuvenation of Burigaon River stretches

Sl. No.	Action plan for Restoration Burigaon River stretches of Tripura	Organization/ Agency Responsible for Execution of the Action plan	Time Line
I.	Industrial Pollution Control		
(a)	Alluminium, Automobile servicing, Cemented product, Rice mill, spice, paper, plastic and printing press units already have been directed to set up ETP while operating their unit.	Tripura State Pollution Control Board /Industries & Commerce Department	Within one year
(b)	All the industries located in the catchment areas of Burigaon River have been directed to give a declaration (in the form of the affidavit) to the effect that they do not discharge/inject their industrial effluent into ground water resources	Tripura State Pollution Control Board	Within six month
II.	Sewage Treatment and Disposal Plan		
(a)	Installation of Sewage Treatment Plant having capacity of 4 MLD at Bishalgarh Municipal Council areas. A Detailed Project Report (DPR) would be formulated and the proposal to be submitted to the concerned Ministry, Government of India for providing financial assistance.	Urban Development Department/ Bishalgarh Municipal Council	Within two year
(b)	Channelization including diversion of sewage generated from household townships to sewer lines /interception of all the drains presently carrying sewage and for ensuring proper treatment through the upcoming STPs	Urban Development Department/ Bishalgarh Municipal Council	Within six months after installation
III	Solid Waste Manage Plan		
(a)	Door to Door Collection with source segregation covering all the wards of Urban local bodies in the catchment areas of Burigaon River involving SHG.	Urban Development Department/ Bishalgarh Municipal Council	Within six months

Sl. No.	Action plan for Restoration Burigaon River stretches of Tripura	Organization/ Agency Responsible for Execution of the Action plan	Time Line
(b)	Strengthening of Solid Waste Management Disposal Site at Devendrachandranagar, Agartala for effective solid waste management for Bishalgarh Municipal Council as cluster basis.	Urban Development Department/Bishalgarh Municipal Council	Within one year
(c)	Prohibition of disposal of municipal plastic, bio- medical waste and other wastes particularly in drains	Urban Development Department/Health Department/District Administration/ Bishalgarh Municipal Council	Within six months
IV	Ground Water Assessment		
(a)	Carrying assessment of ground water survey once in year for quality in the identified river stretch. Sealing up of contaminated ground water sources, if any and accordingly measures to be taken for rectification. Initiative to be taken for supply of potable water to the affected communities, if any.	Tripura State Pollution Control Board /PWD (DWS), Government of Tripura	Once in a year
(b)	All Industrial units located in the catchment areas of Burigaon River have already been directed to obtained valid clearance or NOC from Central Ground Water Authority for ground water extraction to operate their unit. Strict vigilance to these industries regarding the use of ground water without NOC.	Tripura State Pollution Control Board / CGWA	Within three months
(c)	To encourage rain water harvesting by the industrial, commercial and other institutions and groundwater recharging with only clean water be encouraged by CGWB/CGWA	PWD (Water Resources), CGWB/CGWA/ULBS	Continuos activity
V	Flood Plain Zone (FPZ)		
(a)	Plantation on either sides of the river banks wherever possible to be carried out including area falling under private holdings.	Forests Department/Urban Development Department/ Bishalgarh Municipal Council	Within one year

Sl. No.	Action plan for Restoration Burigaon River stretches of Tripura	Organization/ Agency Responsible for Execution of the Action plan	Time Line
(b)	Checking encroachments in the Flood Plan Zone of Burigaon river stretches	District Administration/ Urban Local Bodies	Continuos activity
VI	Environmental Flow (E-Flow) and Irrigation Practices		
(a)	Installation of digital e-flow meter to monitor the minimum discharge during lean period and records to be maintained monthly basis after installation.	PWD (Water Resources), Government of Tripura	Within one year
(b)	Generation of mass awareness to conserve water and also for good irrigation practices to be carried out by the farmers in the catchment areas of Burigaon River	PWD (Water Resources)/ Agriculture Department	Continuos activity
VII	Awareness Generation		
(a)	Extensive Awareness programme to be taken to generate awareness among local people involving Eco Clubs, NGOs and representatives of panchayets etc. in and around the identified polluted river stretches on the various environmental issues	PWD (water Resource)/ School Education/ Panchayet/ Agriculture Department/ULBS/Urban Development Department/PWD(DWS)/ TSPCB	Continuos activity

CHAPTER-8

8.0 The GUMTI RIVER (AMARPUR TO TELKAJLA) REJUVENATION ACTION PLAN

The details of the Gumti polluted stretches are as follows:

Table-17 : details of the Gumti polluted stretches

Name of river	Details of river	Identified polluted river stretch	Coordinates/ length of identified polluted river stretch
Gumti	The catchment of the river lies in the southern part of the Longtharai and Atharamura range. The river flows westwards past the sub-divisional towns of Amarpur, Udaipur and Sonamura and debouches into Bangladesh. The river is about 133 km long. A dam has been constructed in the gorge between the Atharamura and Kalijhari ranges for generation of hydel power and development of irrigational facilities	Telkajila To Amarpur	For Up stream Latitude : 23°25'53.07"N Longitude :91°45'34.29"E For Down stream Latitude : 23°31'36.893"N Longitude :91°27'56.563"E Approximate Length of polluted river stretches : 76.01 km

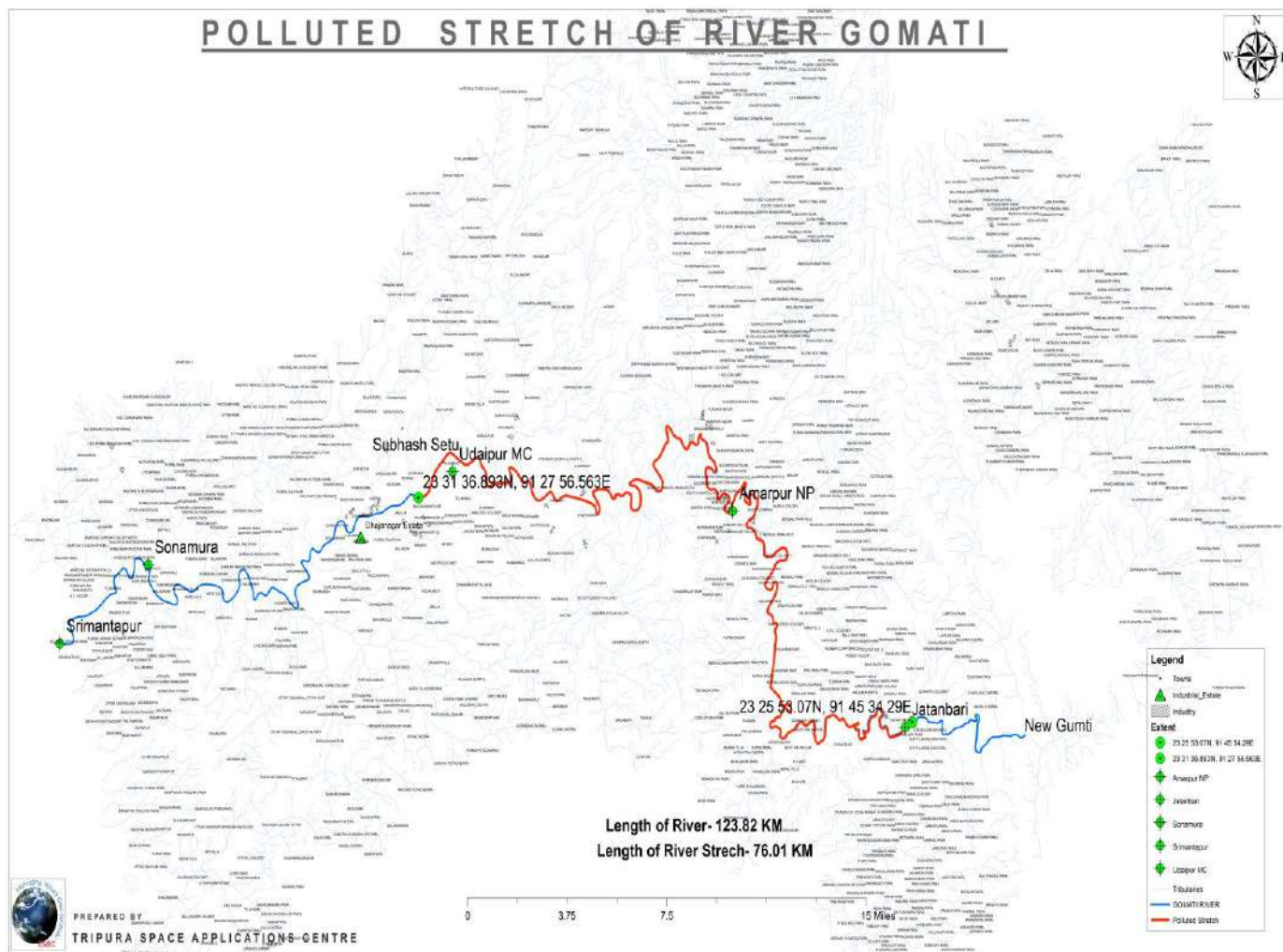


Figure-9: The map showing the town and other tributaries of Gumti River

i) According to the Consent Register of Tripura State Pollution Control Board, there are 24 industries are located in the catchment areas of the Gumti River in the identified stretches. The category of the industries are mainly Automobile servicing, packaged Drinking water, Flour mill, Sweet factory, vehicle repairing, wooden furniture, ice cream etc. The list of industries categorically located in and around 500 meters of the polluted river stretches are as follows:

Table-18 : List of industries located in and around 500 meters of the polluted Gumti river stretches

River	Identified River Stretch	Type of Industries	Category	Number of Industries	Quantity of Industrial waste (Approx. in Liters)
Gumti	Telkajila to Amarpur	Automobile Servicing	Orange	01	Nil
		Drinking water Processing Unit	Green	01	NIL
		Flex Printing	Orange	01	NIL
		Flour Mill	Orange	02	NIL
		Grill & Steel furniture	Orange	13	NIL
		Ice cream	Orange	03	NIL
		Sweet Factory	Orange	01	147
		Vehicle Repairing	Orange	01	10
		Wooden Furniture	Green	01	NIL
		Total		24	157

No highly polluting industries are located in and around the catchment area of Gumti River. Directions have been given by TSPCB to all such units which do not have STP/ETP to build their own such setup.

The Tripura State Pollution Control Board (TSPCB) issued show Cause notices to the industries who are not renewed the Consent to Operate Certificate. The copy of the Show Cause Notice is enclosed as **Annexure-VIII**.

TSPCB also directed to all Auto servicing stations as well as other industries to set up Effluent Treatment Plant (ETP) and make it fully operational, failing which Closure Order will be issued for non compliance. The copies of the directions are enclosed as **Annexures-IX**

The major sources of pollution are non-point sources which includes residential houses, commercial establishments, hospitals and garages etc.

ii) There are three urban local bodies such as Amarpur Nagar Panchayet, Udaipur Municipal Council and Sonamura Nagar Panchayet located in the catchment areas of the Gumti River. The Solid waste generation from the three ULBs are as follows:

Table-19: Solid waste generation of the ULBs in catchment areas of Gumti River

Sl. No	Name of ULBs	Estimated Waste Generation (TPD)
1.	Udaipur Municipal Council	18.5
2.	Sonamura Nagar Panchayat	6.1
3.	Amarpur Nagar Panchayat	5.8

The solid wastes generated by the three urban local bodies are being collected by the concerned Urban local body and transported to concerned designated Solid waste.

DPR for setting up of Solid Waste Management Disposal Site under Swacch Bharat Mission (urban) for 8 (eight) cluster locations which will cater the needs of all the 20 ULBs including Dharmanagar, Kailashahar, **Udaipur**, Bishalgarh, **Amarpur**, Teliamura, **Sonamura** have been forwarded to MoHUA, Government of India. Sanction is awaited from Government of India. Total estimated cost of the DPR is 54.49 Crore.

At present there is no serage treatment system available for Udaipur Municipal Council, Amarpur Nagar Panchayet and Sonamura Nagar Panchayet area area.

iii) The major Health care facilities are located in and around the catchment areas of the Gumti River are as follows:

Table-20: Bio medical waste generation in catchment areas of Gumti River

Name of The Hospital	No. of Beds	Generation of wastes (Kg/day)	Existing Treatment Capacity (Kg/day)			
			Incinerator	Autoclave	Deep Burial	Any other
Amarpur	50	12.5	-	0.5	11.8	0.2
Udaipur	150	37.5	-	1.3	29.5	6.7
Kakraban	47	11.75	-	0.8	9.85	1.1
Sonamura	45	11.25	-	1.3	8.5	1.45

A Common Bio-Medical Waste Treatment Facility (CBWTF) has been set up at Agartala. All Health care facilities located in the catchment areas of the Gumti river to be directed to dispose the Bio-Medical Wastes at the CBWTF.

iv) The state has achieved 100% open defecation free status.

The detailed action plan for rejuvenation of Gumti River stretches are as follows:

Table-21: Detailed action plan for rejuvenation of Gumti River stretches

Sl. No.	Action plan for Restoration six identified river stretches of Tripura	Organization/ Agency Responsible for Execution of the Action plan	Time Target
I.	Industrial Pollution Control		
(c)	Automobile servicing, packaged Drinking water, Flour mill, Sweet factory, vehicle repairing, wooden furniture, ice cream etc. units already have been directed to set up ETP while operating their unit.	Tripura State Pollution Control Board and Industries & Commerce Department	Within one year
(d)	All the industries located in the catchment areas of Gumti River have been directed to give a declaration (in the form of the affidavit) to the effect that they do not discharge/inject their industrial effluent into ground water resources	Tripura State Pollution Control Board	Within six month
II.	Sewage Treatment and Disposal Plan		
(c)	Installation of Sewage Treatment Plant having capacity of 8 MLD at Udaipur for the three Urban local bodies such as Amarpur Nagar Panchayet, Udaipur Municipal Council and Sonamura Nagar Panchayet areas. A Detailed Project Report (DPR) would be formulated and the proposal to be submitted to the concerned Ministry, Government of India for providing financial assistance.	Urban Development Department/ Amarpur Nagar Panchayet/Udaipur Municipal Council/Sonamura Nagar Panchayet	Within three year
(d)	Channelization including diversion of sewage generated from household townships to sewer lines /interception of all the drains presently carrying sewage and for ensuring proper treatment through the upcoming STPs	Urban Development Department/ Amarpur Nagar Panchayet/Udaipur Municipal Council/Sonamura Nagar Panchayet	Within six months after installation
III	Solid Waste Manage Plan		
(d)	Door to Door Collection with source segregation covering all the wards of Urban local bodies in the catchment areas of Burigaon River involving SHG.	Urban Development Department/ Agartala Municipal Corporation, Ranirbaxar Municipal Council and Jirania Nagar Panchayet	Within six months
(e)	Setting up of Solid Waste	Urban Development	Within two year

Sl. No.	Action plan for Restoration six identified river stretches of Tripura	Organization/ Agency Responsible for Execution of the Action plan	Time Target
	Management Disposal Site at Udaipur for effective solid waste management for the cluster of Amarpur Nagar Panchayet and Udaipur Municipal Council areas.	Department/ Amarpur Nagar Panchayet/Udaipur Municipal Council	
(f)	Setting up of Solid Waste Management Disposal Site at Sonamura for effective solid waste management for the cluster of Sonamura Nagar Panchayet and other adjacent Municipal Council areas.	Urban Development Department/ Sonamura Nagar Panchayet	Within two year
(g)	Prohibition of disposal of municipal plastic, bio- medical waste and other wastes particularly in drains	Urban Development Department/ Amarpur Nagar Panchayet/Udaipur Municipal Council/Sonamura Nagar Panchayet	Within six months
IV	Ground Water Assessment		
(d)	Carrying assessment of ground water survey once in year for quality in the identified river stretch. Sealing up of contaminated ground water sources, if any and accordingly measures to be taken for rectification. Initiative to be taken for supply of potable water to the affected communities, if any.	Tripura State Pollution Control Board /PWD (DWS), Government of Tripura	Once in a year
(e)	All Industrial units located in the catchment areas of Gumti River have already been directed to obtained valid clearance or NOC from Central Ground Water Authority for ground water extraction to operate their unit. Strict vigilance to these industries regarding the use of ground water without NOC.	Tripura State Pollution Control Board / CGWA	Within three months
(f)	To encourage rain water harvesting by the industrial, commercial and other institutions and groundwater recharging with only clean water be encouraged by CGWB/CGWA	PWD (Water Resources), CGWB/ CGWA/ULBS	Continuos activity
V	Flood Plain Zone (FPZ)		

Sl. No.	Action plan for Restoration six identified river stretches of Tripura	Organization/ Agency Responsible for Execution of the Action plan	Time Target
(c)	Plantation on either sides of the river banks wherever possible to be carried out including area falling under private holdings.	Forests Department/Urban Development Department/Agartala Municipal Corporation, Ranirbaxar Municipal Council and Jirania Nagar Panchayet	Within one year
(d)	Checking encroachments in the Flood Plan Zone of Burigaon river stretches	District Administration/ Urban Local Bodies	Continuos activity
VI	Environmental Flow (E-Flow) and Irrigation Practices		
(c)	Installation of digital e-flow meter to monitor the minimum discharge during lean period and records to be maintained monthly basis after installation.	PWD (Water Resources), Government of Tripura	Within one year
(d)	Generation of mass awareness to conserve water and also for good irrigation practices to be carried out by the farmers in the catchment areas of Gumti River	PWD (Water Resources), Government of Tripura	Continuos activity
VII	Awareness Generation		
(a)	Extensive Awareness programme to be taken to generate awareness among local people involving Eco Clubs, NGOs and representatives of panchayets etc. in and around the identified polluted river stretches on various environmental issues.	PWD (water Resource)/ School Education/Panchayet/ Agriculture Department/ULBS/Urban Development Department/PWD(DWS)/TSPC B	Continuos activity

CHAPTER-9

9.0 THE HAORA RIVER (AGARTALA To CHAMPAKNAGAR STRETCH) REJUVENATION ACTION PLAN.

River Rejuvenation Committee, Tripura

The river Haora originating from the eastern side of the Baramura range flows westerly through the alluvial plains and passes by the southern embankment of the capital city of Agartala, Ranirbazar and Jirania towns before finally flowing down into Bangladesh. The details of the river alongwith the identified stretches is as follows:

Table-22 : Details of the Haora river stretches

Name of river	Details of river	Identified polluted river stretch	Coordinates/ length of identified polluted river stretch
Haora	The river originating from the eastern side of the Baramura range flows westerly through the alluvial plains and passes by the southern embankment of the capital city of Agartala before finally flowing down into Bangladesh. The flow length of the river is 53 kms in Indian territory and basin area is 570 sq.kms. The annual flow of this river is 36,032 m ³ . Agartala Municipal Corporation and PWD(WR) Department uses the water of this river daily for community use. The intake wells are situated near Jogendranagar and Gandhighat. The towns Jirania (Sub-divisional town), Ranirbazar and Agartala (State capital) are at the catchment area of the river.	Agartala To Champaknagar	It is noted that in case of Haora River the stretch “Agartala to Bishramganj” have been mentioned in Judgment Order of Hon’ble NGT. Actually along Bishramganj there is no Haora River catchment. Since Haora River originates from Champaknagar, therefore, the identified stretch of Haora River is taken as Champaknagar to Agartala. For Up stream Latitude : 23 ⁰ 48’48.21’’N Longitude :91 ⁰ 27’46.44’’E For Down stream Latitude : 23 ⁰ 49’36.77’’N Longitude :91 ⁰ 15’38.19’’E Approximate Length of polluted river stretches : 28.57 km

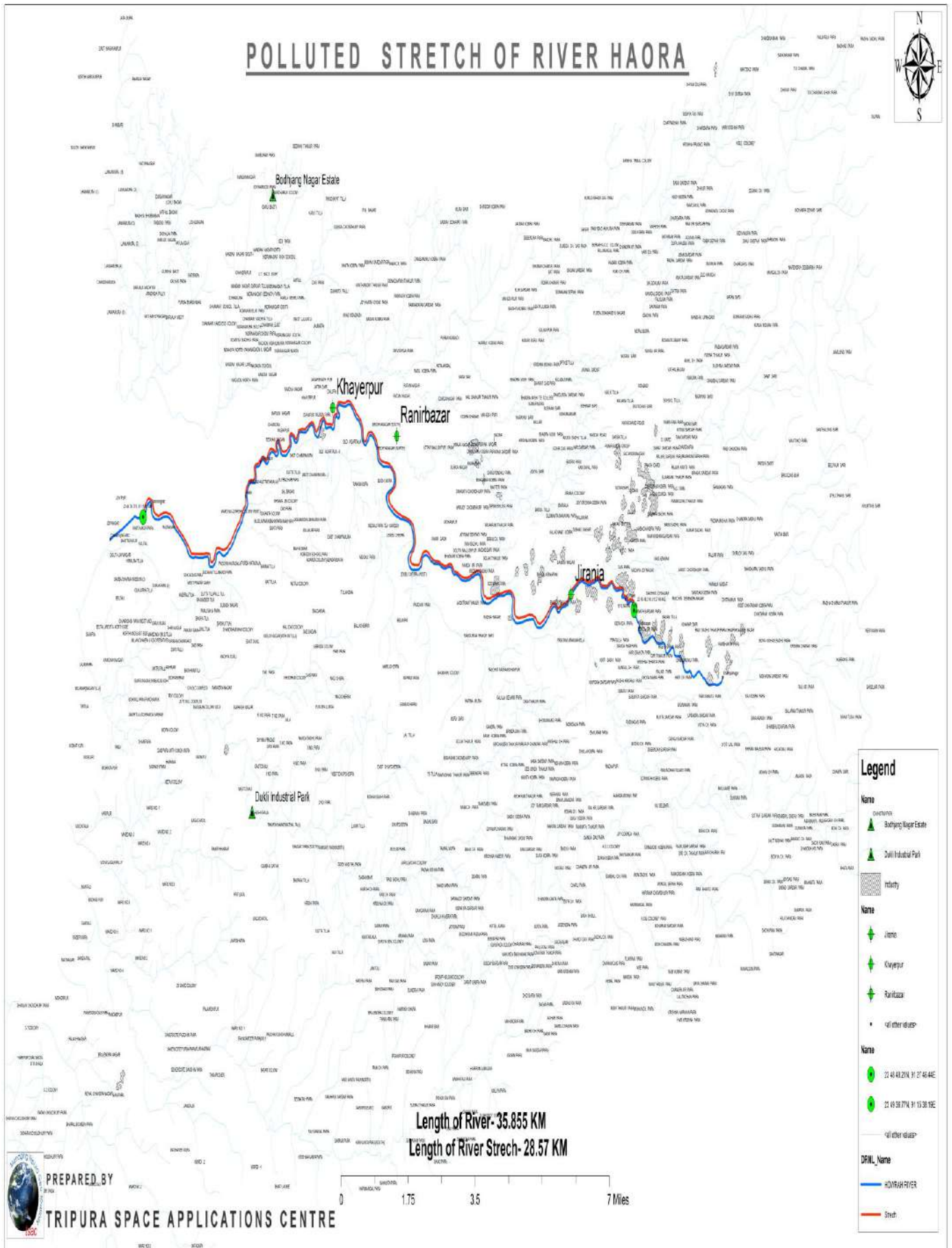


Figure-10: The map showing the town and other tributaries of Haora River

i) According to the Consent Register of Tripura State Pollution Control Board, there are 97 industries are located in the catchment areas of the Haora River in the identified stretches. The category of the industries are mainly Automobile servicing, Bakery, Brick, Confectionery, Food Processing, Hotel, Icecream, paper, plastic and printing press etc. The list of industries categorically located in and around 500 meters of the polluted river stretches are as follows:

Table-23: List of industries located in the catchment areas of Haora River

Sl. No.	River	Identified River Stretch	Type of Industries	Category	Number of Industries	Quantity of Industrial waste (Approx. in Liters)
3.	Haora	Agartala to Champaknagar	Automobile Servicing	Orange	13	620
			Bakery	Orange	04	120
			Brick	Orange	25	NIL
			Confectionery	Orange	05	460
			Dalmut	Orange	05	490
			Food Processing	Orange	03	230
			Hotel	Orange & Green	11	6,250
			Ice cream	Orange	07	690
			Paper Product	Green	01	NIL
			Plastic Product	Green	01	NIL
			Printing Press	Orange	02	NIL
			Steel Furniture & Grill Mfg. Unit	Orange	20	NIL
			Total		97	8,860

No large scale waste water generating industries are located in and around the catchment area of Haora River. It was also found that one unit (Hotel Sonar Tari) has setup STP. Directions have been given by TSPCB to all such units which do not have STP/ETP to build their own such setup.

The Tripura State Pollution Control Board (TSPCB) issued show Cause notices to the industries who are not renewed the Consent to Operate Certificate. The copy of the Show Cause Notice is enclosed as **Annexure-VIII**.

TSPCB also directed to all Auto servicing stations as well as other industries to set up Effluent Treatment Plant (ETP) and make it fully operational, failing which Closure Order will be issued for non compliance. The copies of the directions are enclosed as **Annexures-IX**

The major sources of pollution are non-point sources which includes residential houses, hotels, commercial establishments, hospitals and garages etc.

There are four industrial estates such as Budhjungnagar, A.D. Nagar, Badharghat and Dukli industrial estates in the catchment area of Hoara River. One CETP is operating in the Budhjungnagar industrial estate. The other three industrial estates such as A.D. Nagar, Badharghat and Dukli are also far away from the catchment area of this river. Further these three industrial estate do not have any waste water generating industries.

ii) Three urban local bodies such as Agartala Municipal Corporation, Ranirbazar Municipal Council and Jirania Nagar Panchayet are located in the catchment areas of the Haora River. The Solid waste generation from the Urban local bodies such Agartala Municipal Corporation, Ranirbazar Municipal Council and Jirania Nagar Panchayet are as follows:

Table-24: Solid waste generation in the catchment areas of Haora River

S. No	Name of ULBs	Estimated Waste Generation (TPD)
1	Agartala Municipal Corporation (AMC)	241.1
2	Ranirbazar Municipal Council	7.2
3	Jirania Nagar Panchayat	6.3

The solid wastes generated by the three urban local bodies are being collected by the concerned Urban local bodies and transported to Solid waste Management Facility located at Debendrachnadra nagar, Agartala.

iii) The major Health care facilities are located in and around the catchment areas of the Haora River are as follows:

Table-25: Bio Medical waste generation in the catchment areas of Haora River

Name of The Hospital	No. of Beds	Generation of wastes (Kg/day)	Existing Treatment Capacity (Kg/day)			
			Incinerator	Autoclave	Deep Burial	Any other
Indira Gandhi Memorial Hospital	510	127.5	96.1	5.1	24.3	2
Ranirbazar	15	3.75	-	0.9	2.14	0.71
Jirania	25	6.25	-	0.2	5.18	0.87

A Common Bio-Medical Waste Treatment Facility (CBWTF) has been set up at Agartala. All Health care facilities located in the catchment areas of the Haora river to be directed to dispose the Bio-Medical Wastes at the CBWTF.

iv) The state has achieved 100% open defecation free status.

The detailed action plan for rejuvenation of Haora River stretches are as follows:

Table-26: Detailed action plan for rejuvenation of Haora River stretches

Sl. No.	Action plan for Restoration six identified river stretches of Tripura	Organization/ Agency Responsible for Execution of the Action plan	Time Target
I.	InduIndustrial Pollution Control		
(e)	Automobile servicing, Bakery, Brick, Confectionery, Food Processing, Hotel, Icecream, paper, plastic and printing press etc. already have been directed to set up ETP while operating their unit. The units will be directed to treat their effluent in the CETP located at Budhjungnagar.	Tripura State Pollution Control Board / Industries & Commerce Department	Within one year
(f)	All the industries located in the catchment areas of Haora River have been directed to give a declaration (in the form of the affidavit) to the effect that they do not discharge/inject their industrial effluent into ground water resources	Tripura State Pollution Control Board	Within six month
II.	Sewage Treatment and Disposal Plan		
(e)	Installation of another Sewage Treatment Plant having capacity of 8 MLD at Agartala for the cluster of sothern part of Agartala Municipal Corporation, Ranirbazar Municipal Council and Jirania Nagar Panchayet areas. A Detailed Project Report (DPR) would formulate and the proposal to be submitted to the concerned Ministry, Government of India for providing financial assistance.	Urban Development Department/ Agartala Municipal Corporation, Ranirbazar Municipal Council and Jirania Nagar Panchayet	Within two year
(f)	Channelization including diversion of sewage generated from household townships to sewer lines /interception of all the drains presently carrying sewage and for ensuring proper treatment through the upcoming STPs	Urban Development Department/ Agartala Municipal Corporation, Ranirbazar Municipal Council and Jirania Nagar Panchayet	Within six months after installation

Sl. No.	Action plan for Restoration six identified river stretches of Tripura	Organization/ Agency Responsible for Execution of the Action plan	Time Target
III	Solid Waste Manage Plan		
(h)	Door to Door Collection with source segregation covering all the wards of Urban local bodies in the catchment areas of Haora River involving SHG. The collected wastes to be disposed in the Solid Waste Management Disposal site at Debendrachadranagar for the cluster of Agartala Municipal Corporation, Ranirbaxar Municipal Council and Jirania Nagar Panchayet areas.	Urban Development Department/ Agartala Municipal Corporation, Ranirbaxar Municipal Council and Jirania Nagar Panchayet	Within six months
(i)	Prohibition of disposal of municipal plastic, bio- medical waste and other wastes particularly in drains	Urban Development Department/Health Department/District Administration/ Agartala Municipal Corporation, Ranirbaxar Municipal Council and Jirania Nagar Panchayet	Within six months
IV	Ground Water Assessment		
(g)	Carrying assessment of ground water survey once in year for quality in the identified river stretch. Sealing up of contaminated ground water sources, if any and accordingly measures to be taken for rectification. Initiative to be taken for supply of potable water to the affected communities, if any.	Tripura State Pollution Control Board /PWD (DWS), Government of Tripura	Once in a year
(h)	All Industrial units located in the catchment areas of Haora River have already been directed to obtained valid clearance or NOC from Central Ground Water Authority for ground water extraction to operate their unit. Strict vigilance to these industries regarding the use of ground water without NOC.	Tripura State Pollution Control Board / CGWB/ CGWA	Within three months

Sl. No.	Action plan for Restoration six identified river stretches of Tripura	Organization/ Agency Responsible for Execution of the Action plan	Time Target
(i)	To encourage rain water harvesting by the industrial, commercial and other institutions and groundwater recharging with only clean water be encouraged by CGWB/CGWA	PWD (Water Resources), CGWB/ CGWA/ULBS	Continuos activity
V	Flood Plain Zone (FPZ)		
(e)	Plantation on either sides of the river banks wherever possible to be carried out including area falling under private holdings.	Forests Department/Urban Development Department/ Agartala Municipal Corporation, Ranirbaxar Municipal Council and Jirania Nagar Panchayet	Within one year
(f)	Checking encroachments in the Flood Plan Zone of Haora river stretches	District Administration/ Urban Local Bodies	Continuos activity
VI	Environmental Flow (E-Flow) and Irrigation Practices		
(a)	Installation of digital e-flow meter to monitor the minimum discharge during lean period and records to be maintained monthly basis after installation.	PWD (Water Resources), Government of Tripura	Within one year
(b)	Generation of mass awareness to conserve water and also for good irrigation practices to be carried out by the farmers in the catchment areas of Haora River	PWD (Water Resources), Government of Tripura	Continuos activity
VII	Awareness Generation		
(a)	Extensive Awareness programme to be taken to generate awareness among local people involving Eco Clubs, NGOs and representatives of panchayets etc. in and around the identified polluted river stretches on various environmental issues.	PWD (water Resource)/ School Education/Panchayet/ Agriculture Department/ULBS/Urban Development Department/PWD(DWS)/TSP CB	Continuos activity

CHAPTER-10

10.0 THE JURI RIVER (ALONG DHARMANAGAR) REJUVENATION ACTION PLAN

The details of Juri river are as follows:

Table-27: Details of Juri River Stretches

Name of river	Details of river	Identified polluted river stretch	Coordinates/ length of identified polluted river stretch
Juri	The Juri River is a trans-boundary river in India and Bangladesh. It rises in the Jampui Hills of the Indian state of Tripura. It enters Kulaura Upazila of Maulvi Bazar District of Bangladesh and finally joins Kushiara River. It has a northerly flow through the Dharmanagar valley on the eastern side of the Sakhan range.	Along Dharmanagar	For Up stream Latitude : 24°20'30.02"N Longitude :92°09'38.26"E For Down stream Latitude : 24°20'17.7"N Longitude :92°09'21.16"E Approximate Length of polluted river stretches : 0.96 km

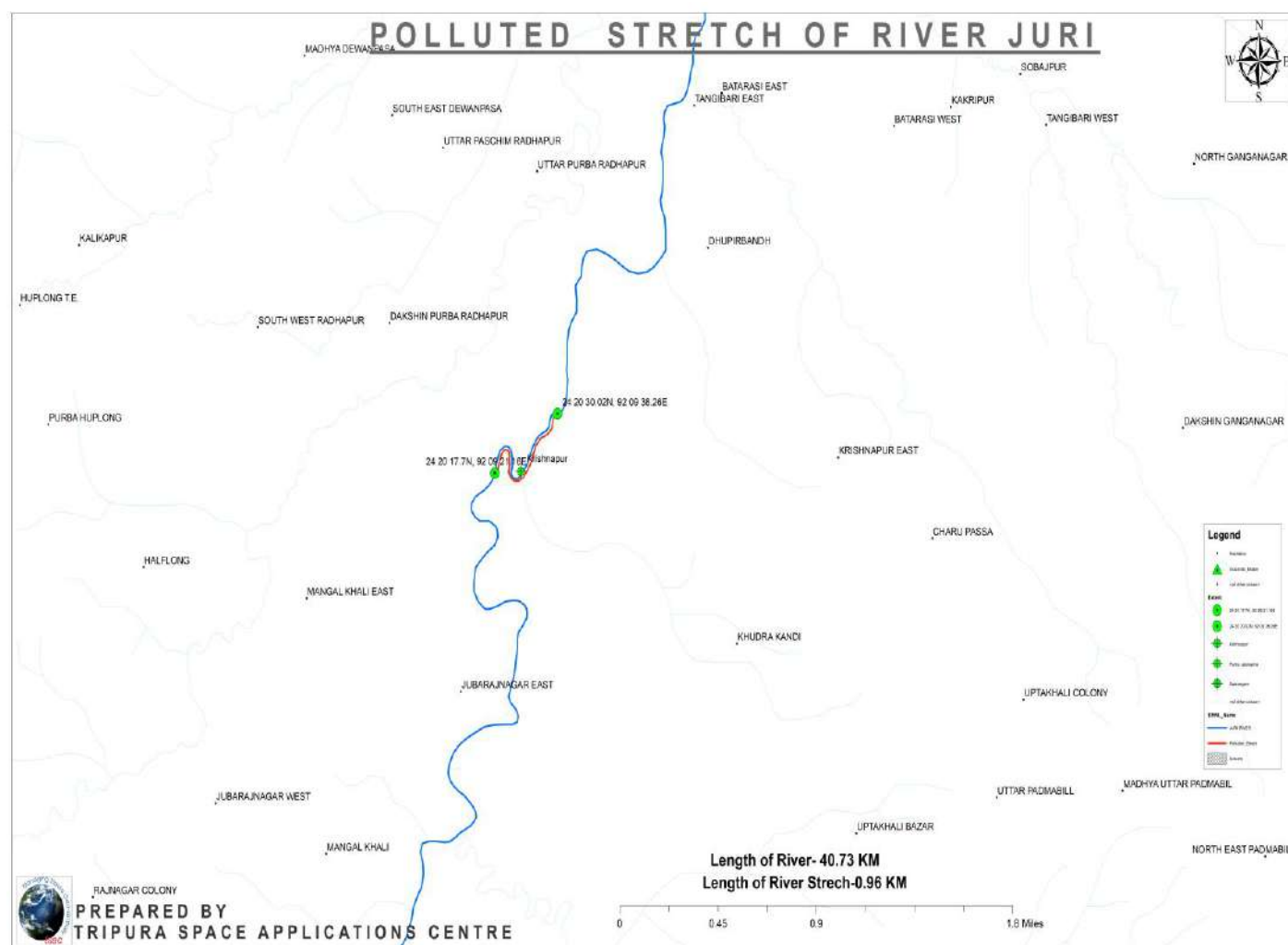


Figure-11: The map showing the town and other tributaries of Haora River

i) According to the Consent Register of Tripura State Pollution Control Board, there are only 5 nos. of industries are located in the catchment areas of the Juri River in the identified stretches. The category of the industries are mainly Brick Field & Automobile servicing. The list of industries categorically located in and around 500 meters of the polluted river stretches are as follows:

Table-28: List of industries located in catchment areas of Juri River stretches

River	Identified River Stretch	Type of Industries	Category	Number of Industries	Quantity of Industrial waste (Approx. in Liters)
Juri	Along Dharmanagar	Brick field	Orange	04	NIL
		Repairing and Servicing Centre	Orange	01	4,000
		Total		05	4,000

No highly polluting industries are located in and around the catchment area of Juri River. Directions have been given by TSPCB to all such units which do not have STP/ETP to build their own such setup.

The Tripura State Pollution Control Board (TSPCB) issued show Cause notices to the industries who are not renewed the Consent to Operate Certificate. The copy of the Show Cause Notice is enclosed as **Annexure-VIII**.

TSPCB also directed to all Auto servicing stations as well as other industries to set up Effluent Treatment Plant (ETP) and make it fully operational, failing which Closure Order will be issued for non compliance. The copies of the directions are enclosed as **Annexures-IX**

The major sources of pollution are non-point sources which includes residential houses, commercial establishments, hospitals and garages etc.

ii) Dharmanagar Municipal Council is located in the catchment areas of the Juri River. The Solid waste generation from the three ULBs are as follows:

Table-29: Solid waste generation in catchment areas of Juri River stretches

S. No	Name of ULBs	Estimated Waste Generation (TPD)
1	Dharmanagar Municipal Council	22.4

The solid wastes generated in the Dharmanagar Municipal Council are being collected by the concerned Urban local body and transported to concerned identified Solid waste management site.

DPR for setting up of Solid Waste Management Disposal Site under Swacch Bharat Mission (urban) for 8 (eight) cluster locations which will cater the needs of all the 20 ULBs including **Dharmanagar**, Kailashahar, Udaipur, Bishalgarh, Amarpur, Teliamura, Sonamura have been forwarded to MoHUA , Government of India. Sanction is awaited from Government of India. Total estimated cost of the DPR is 54.49 Crore.

At present there is no serage treatment system available for Dharmanagar Municipal Council area.

iii) The major Health care facilities are located in and around the catchment areas of the Juri River are as follows:

Table-30: Bio medical waste generation in catchment areas of Juri River stretches

Name of The Hospital	No. of Beds	Generation of wastes (Kg/day)	Existing Treatment Capacity (Kg/day)			
			Incinerator	Autoclave	Deep Burial	Any other
Dharmanagar District Hospital	75	18.8	-	0.8	17.7	0.3

A Common Bio-Medical Waste Treatment Facility (CBWTF) has been set up at Agartala. All Health care facilities located in the catchment areas of the Haora river to be directed to dispose the Bio-Medical Wastes at the CBWTF.

iv) The state has achieved 100% open defecation free status.

The detailed action plan for rejuvenation of Juri River stretches are as follows:

Table-31: Detailed action plan for rejuvenation of Juri River stretches

Sl. No.	Action plan for Restoration six identified river stretches of Tripura	Organization/ Agency Responsible for Execution of the Action plan	Time Target
I.	Industrial Pollution Control		
(a)	Automobile servicing and Brick field units already have been directed to set up ETP while operating their unit.	Tripura State Pollution Control Board and Industries & Commerce Department	Within one year

Sl. No.	Action plan for Restoration six identified river stretches of Tripura	Organization/ Agency Responsible for Execution of the Action plan	Time Target
(b)	All the industries located in the catchment areas of Juri River have been directed to give a declaration (in the form of the affidavit) to the effect that they do not discharge/inject their industrial effluent into ground water resources	Tripura State Pollution Control Board	Within six month
II.	Sewage Treatment and Disposal Plan		
(a)	Installation of Sewage Treatment Plant having capacity of 8 MLD at middle point between Dharmanagar and Kailasahar Municipal area. A Detailed Project Report (DPR) would be formulated and the proposal to be submitted to the concerned Ministry, Government of India for providing financial assistance.	Urban Development Department/ Dharmanagar Municipal Council	Within two year
(b)	Channelization including diversion of sewage generated from household townships to sewer lines /interception of all the drains presently carrying sewage and for ensuring proper treatment through the upcoming STPs	Urban Development Department/ Dharmanagar Municipal Council	Within six months after installation
III	Solid Waste Manage Plan		
(a)	Door to Door Collection with source segregation covering all the wards of Urban local bodies in the catchment areas of Juri River involving SHG.	Urban Development Department/ Dharmanagar Municipal Council	Within six months
(b)	Setting up of Solid Waste Management Disposal Site at Dharmanagar for the cluster of Dharmanagar Municipal Council and adjacent other urban local bodies for effective solid waste management	Urban Development Department/ Dharmanagar Municipal Council	Within two year
(c)	Prohibition of disposal of municipal plastic, bio- medical waste and other wastes particularly in drains	Urban Development Department/ Dharmanagar Municipal Council	Within six months
IV	Ground Water Assessment		

Sl. No.	Action plan for Restoration six identified river stretches of Tripura	Organization/ Agency Responsible for Execution of the Action plan	Time Target
(a)	Carrying assessment of ground water survey once in year for quality in the identified river stretch. Sealing up of contaminated ground water sources, if any and accordingly measures to be taken for rectification. Initiative to be taken for supply of potable water to the affected communities, if any.	Tripura State Pollution Control Board /PWD (DWS), Government of Tripura	Once in a year
(b)	All Industrial units located in the catchment areas of Juri River have already been directed to obtained valid clearance or NOC from Central Ground Water Authority for ground water extraction to operate their unit. Strict vigilance to these industries regarding the use of ground water without NOC.	Tripura State Pollution Control Board / CGWA	Within three months
(c)	To encourage rain water harvesting by the industrial, commercial and other institutions and groundwater recharging with only clean water be encouraged by CGWB/CGWA	PWD (Water Resources), CGWB/ CGWA/ULBS	Continuos activity
V	Flood Plain Zone (FPZ)		
(g)	Plantation on either sides of the river banks wherever possible to be carried out including area falling under private holdings.	Forests Department/Urban Development Department/ Agartala Municipal Corporation, Ranirbaxar Municipal Council and Jirania Nagar Panchayet	Within one year
(h)	Checking encroachments in the Flood Plan Zone of Burigaon river stretches	District Administration/ Urban Local Bodies	Continuos activity
VI	Environmental Flow (E-Flow) and Irrigation Practices		
(e)	Installation of digital e-flow meter to monitor the minimum discharge during lean period and records to be maintained monthly basis after installation.	PWD (Water Resources), Government of Tripura	Within one year

Sl. No.	Action plan for Restoration six identified river stretches of Tripura	Organization/ Agency Responsible for Execution of the Action plan	Time Target
(f)	Generation of mass awareness to conserve water and also for good irrigation practices to be carried out by the farmers in the catchment areas of Gumti River	PWD (Water Resources), Government of Tripura	Continuos activity
VII	Awareness Generation		
(b)	Extensive Awareness programme to be taken to generate awareness among local people involving Eco Clubs, NGOs and representatives of panchayets etc. in and around the identified polluted river stretches on various environmental issues.	PWD (water Resource)/ School Education/Panchayet/ Agriculture Department/ULBS/Urban Development Department/PWD(DWS)/TSPC B	Continuos activity

CHAPTER-11

11.0 THE KHOWAI RIVER (ALONG TELIAMURA) REJUVENATION ACTION PLAN

The details of the Khowai river are as follows:

Table-32: details of the Khowai river stretches

Name of river	Details of river	Identified polluted river stretch	Coordinates/ length of identified polluted river stretch
Khowai	Khowai River is a trans-boundary river that originates in the eastern part of the Atharamura Hills of Tripura in India. The river with its source in the Longtharai range flows north-westward upto a point near Teliamura, then it takes a northerly course through the valley between the Longtharai and the Baramura ranges and debouches into Bangladesh past Khowai, the sub-divisional town. The river has a flow length of 166 km within the state. The river receives water from a number of tributaries. The Khowai valley extends for about 70 km in length and is about 25 km in width and the land is very fertile.	Along Teliamura	For Up stream Latitude : 23°51'29.78"N Longitude : 91°37'42.22"E For Down stream Latitude : 23°50'32.52"N Longitude : 91°37'35.45"E Approximate Length of polluted river stretches : 1.86 km

As per analytical data for all the monitoring locations of Khowai river entered in EWQDES portal of CPCB by TSPCB, the BOD value was/is within prescribed standard limit (3 mg/l) during July, 2016 to October, 2018. However, the water quality of the river is under regular monitoring.

i) According to the Consent Register of Tripura State Pollution Control Board, there are 05 industries are located in the catchment areas of the Khowai River in the identified stretches. The category of the industries are mainly brick field. The list of industries categorically located in and around 500 meters of the polluted river stretches are as follows:

Table-33: List of industries located in catchment areas of the polluted Khowai River stretches

River	Identified River Stretch	Type of Industries	Category	Number of Industries	Quantity of Industrial waste (Approx. in Liters)
Khowai	Along Teliamura	Brick field	Orange	05	NIL
		Total		05	NIL

No highly polluting industries are located in and around the catchment area of Khowai River. Directions have been given by TSPCB to all such units which do not have STP/ETP to build their own such setup.

The Tripura State Pollution Control Board (TSPCB) issued show Cause notices to the industries who are not renewed the Consent to Operate Certificate. The copy of the Show Cause Notice is enclosed as **Annexure-VIII**.

The major sources of pollution are non-point sources which includes residential houses, commercial establishments, hospitals and garages etc.

The Solid waste generation from the ULB is as follows:

Table-34: Solid waste generation in catchment areas of the Khowai River stretches

Sl. No	Name of ULBs	Estimated Waste Generation (TPD)
1.	Teliamura Municipal Council	11.4

The solid wastes generated in the urban local body area are being collected by the concerned Urban local body and transported to the identified Solid waste management site.

DPR for setting up of Solid Waste Management Disposal Site under Swachh Bharat Mission (urban) for 8 (eight) cluster locations which will cater the needs of all the 20 ULBs including Dharmanagar, Kailashahar, Udaipur, Bishalgarh, Amarpur, **Teliamura**, Sonamura have been forwarded to MoHUA , Government of India. Sanction is awaited from Government of India. Total estimated cost of the DPR is 54.49 Crore.

At present there is no sewage treatment system available for Teliamura Municipal Council area.

- iii) The major Health care facilities are located in and around the catchment areas of the Khowai River are as follows:

Table-35: Bio medical waste generation in catchment areas of the Khowai River stretches

Name of The Hospital	No. of Beds	Generation of wastes (Kg/day)	Existing Treatment Capacity (Kg/day)			
			Incinerator	Autoclave	Deep Burial	Any other
Teliamura Sub divisional Hospital	38	9.5	-	0.7	8.6	0.2

A Common Bio-Medical Waste Treatment Facility (CBWTF) has been set up at Agartala. All Health care facilities located in the catchment areas of the Haora river to be directed to dispose the Bio-Medical Wastes at the CBWTF.

- iv) The state has achieved 100% open defecation free status.

The detailed action plan for rejuvenation of Khowai River stretches are as follows:

Table-36: Detailed action plan for rejuvenation of Khowai River stretches

Sl. No.	Action plan for Restoration identified river stretches of Tripura	Organization/ Agency Responsible for Execution of the Action plan	Time Line
I.	Industrial Pollution Control		
(c)	The brick field units already have been directed to not to discharge any waste water or solid wastes in to the river	Tripura State Pollution Control Board / Industries & Commerce Department	Within one year
(d)	All the industries located in the catchment areas of Khowai River have been directed to give a declaration (in the form of the affidavit) to the effect that they do not discharge/inject their industrial effluent into ground water resources	Tripura State Pollution Control Board	Within six month
II.	Sewage Treatment and Disposal Plan		

Sl. No.	Action plan for Restoration identified river stretches of Tripura	Organization/ Agency Responsible for Execution of the Action plan	Time Line
(c)	Installation of Sewage Treatment Plant having capacity of 8 MLD at Teliamura Municipal area. The same STP may be used for adjacent urban local bodies in future. A Detailed Project Report (DPR) would be formulated and the proposal to be submitted to the concerned Ministry, Government of India for providing financial assistance.	Urban Development Department/ Teliamura Municipal Council/	Within three year
(d)	Channelization including diversion of sewage generated from household townships to sewer lines /interception of all the drains presently carrying sewage and for ensuring proper treatment through the upcoming STPs	Urban Development Department/ Teliamura Municipal Council/	Within six months after installation
III	Solid Waste Manage Plan		
(d)	Door to Door Collection with source segregation covering all the wards of Urban local bodies in the catchment areas of Burigaon River involving SHG.	Urban Development Department/ Teliamura Municipal Council/	Within six months
(e)	Setting up of Solid Waste Management Disposal Site at Teliamura for effective solid waste management for the Teliamura Municipal Council areas. This disposal site may be used for adjacent urban local bodies in future.	Urban Development Department/ Teliamura Municipal Council/	Within three year
(f)	Prohibition of disposal of municipal plastic, bio- medical waste and other wastes particularly in drains	Urban Development Department/ Teliamura Municipal Council/	Within six months
IV	Ground Water Assessment		
(d)	Carrying assessment of ground water survey once in year for quality in the identified river stretch. Sealing up of contaminated ground water sources, if any and accordingly measures to be taken for rectification. Initiative to be taken for supply of potable water to the affected communities, if any.	Tripura State Pollution Control Board /PWD (DWS), Government of Tripura	Once in a year

Sl. No.	Action plan for Restoration identified river stretches of Tripura	Organization/ Agency Responsible for Execution of the Action plan	Time Line
(e)	All Industrial units located in the catchment areas of Khowai River have already been directed to obtained valid clearance or NOC from Central Ground Water Authority for ground water extraction to operate their unit. Strict vigilance to these industries regarding the use of ground water without NOC.	Tripura State Pollution Control Board / CGWA	Within three months
(f)	To encourage rain water harvesting by the industrial, commercial and other institutions and groundwater recharging with only clean water be encouraged by CGWB/CGWA	PWD (Water Resources), CGWB/ CGWA/ULBS	Continuos activity
V	Flood Plain Zone (FPZ)		
(i)	Plantation on either sides of the river banks wherever possible to be carried out including area falling under private holdings.	Forests Department/Urban Development Department/ Teliamura Municipal Council	Within one year
(j)	Checking encroachments in the Flood Plan Zone of Burigaon river stretches	District Administration/ Urban Local Bodies	Continuos activity
VI	Environmental Flow (E-Flow) and Irrigation Practices		
(g)	Installation of digital e-flow meter to monitor the minimum discharge during lean period and records to be maintained monthly basis after installation.	PWD (Water Resources), Government of Tripura	Within one year
(h)	Generation of mass awareness to conserve water and also for good irrigation practices to be carried out by the farmers in the catchment areas of Gumti River	PWD (Water Resources), Government of Tripura	Continuos activity
VII	Awareness Generation		
(c)	Extensive Awareness programme to be taken to generate awareness among local people involving Eco Clubs, NGOs and representatives of panchayets etc. in and around the identified polluted river stretches on various environmental issues.	PWD (water Resource)/ School Education/Panchayet/ Agriculture Department/ULBS/Urban Development Department/PWD(DWS)/TSPC B	Continuos activity

CHAPTER-12

12.0 THE MANU RIVER (ALONG KAILASAHAR) REJUVENATION ACTION PLAN

The details of Manu river is as follows:

Table-37: Details of Manu river stretches

Name of river	Details of river	Identified polluted river stretch	Coordinates/ length of identified polluted river stretch
Manu	It originates from the Sakhan range and is joined by the Chhamanu rising from the Longtharai Hills and their combined flow drains the valley between the Sakhan and the Longtharai ranges in a northern direction. After intercepting the flow from the Deo river it joins the Kushiya River at Manumukh in Moulvibazar district of Bangladesh. The length of the river is about 167 km.	Along Kailashahar	For Up stream Latitude : 24°19'1.68"N Longitude :91°59'39.11"E For Down stream Latitude : 24°19'26.25"N Longitude :91°59'26.41"E Approximate Length of polluted river stretches : 1.02 km

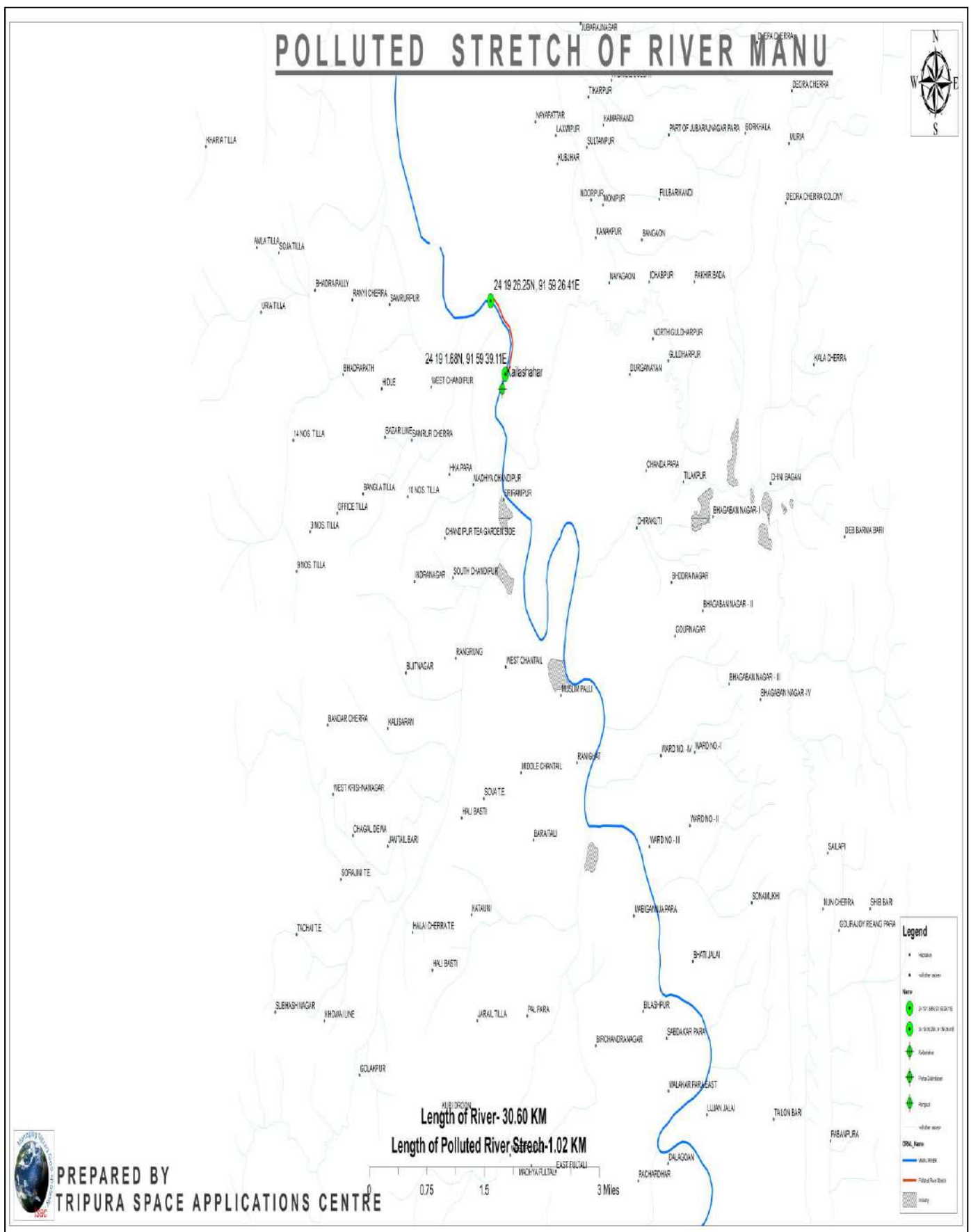


Figure-13: The map showing the town and other tributaries of Manu River

i) According to the Consent Register of Tripura State Pollution Control Board, there are 10
River Rejuvenation Committee, Tripura

industries are located in the catchment areas of the Manu River in the identified stretches. The category of the industries are mainly Brick Fields. The list of industries categorically located in and around 500 meters of the polluted river stretches are as follows:

Table-38: list of industries located in catchment areas of the Manu River stretches

River	Identified River Stretch	Type of Industries	Category	Number of Industries	Quantity of Industrial waste (Approx. in Liters)
Manu	Along Kailashahar	Brick field	Orange	10	NIL
		Total		10	NIL

No highly polluting industries are located in and around the catchment area of Manu River. Directions have been given by TSPCB to all such units which do not have STP/ETP to build their own such setup.

The Tripura State Pollution Control Board (TSPCB) issued show Cause notices to the industries who are not renewed the Consent to Operate Certificate. The copy of the Show Cause Notice is enclosed as **Annexure-VIII**.

The major sources of pollution are non-point sources which includes residential houses, commercial establishments, hospitals and garages etc.

ii) Kailashahar Municipal Council is located in the catchment areas of the Manu River. The Solid waste generation from the ULB is as follows:

Table-39: Solid waste generation in catchment areas of the Manu River stretches

Sl. No	Name of ULBs	Estimated Waste Generation (TPD)
1.	Kailashahar Municipal Council	13.2

The solid wastes generated by the three urban local bodies are being collected by the concerned Urban local body and transported to identified designated Solid waste management site.

DPR for setting up of Solid Waste Management Disposal Site under Swachh Bharat Mission (urban) for 8 (eight) cluster locations which will cater the needs of all the 20 ULBs including Dharmanagar, **Kailashahar**, Udaipur, Bishalgarh, Amarpur, Teliamura, Sonamura have been forwarded to MoHUA , Government of India. Sanction is awaited from Government of India. Total estimated cost of the DPR is 54.49 Crore.

At present there is no Sewerage Treatment plant available for Kailasahar Municipal Council area.

iii) The major Health care facilities are located in and around the catchment areas of the Manu River are as follows:

Table-40: Bio medical waste generation in catchment areas of the Manu River stretches

Name of The Hospital	No. of Beds	Generation of wastes (Kg/day)	Existing Treatment Capacity (Kg/day)			
			Incinerator	Autoclave	Deep Burial	Any other
Kailashahar District Hospital	125	31.3	-	1.3	29.5	0.5

A Common Bio-Medical Waste Treatment Facility (CBWTF) has been set up at Agartala. All Health care facilities located in the catchment areas of the Haora river to be directed to dispose the Bio-Medical Wastes at the CBWTF.

iv) The state has achieved 100% open defecation free status.

The detailed action plan for rejuvenation of Manu River stretches are as follows:

Table-41: Detailed action plan for rejuvenation of Manu River stretches

Sl. No.	Action plan for Restoration identified river stretches of Tripura	Organization/ Agency Responsible for Execution of the Action plan	Time Line
I.	Industrial Pollution Control		
(a)	The brick field units already have been directed to not to discharge any waste water or solid wastes in to the river	Tripura State Pollution Control Board and Industries & Commerce Department	Within one year
(b)	All the industries located in the catchment areas of Manu River have been directed to give a declaration (in the form of the affidavit) to the effect that they do not discharge/inject their industrial effluent into ground water resources	Tripura State Pollution Control Board	Within six month

Sl. No.	Action plan for Restoration identified river stretches of Tripura	Organization/ Agency Responsible for Execution of the Action plan	Time Line
II.	Sewage Treatment and Disposal Plan		
(a)	Installation of Sewage Treatment Plant having capacity of 8 MLD at middle point between Dharmanagar and Kailasahar Municipal area. A Detailed Project Report (DPR) would be formulated and the proposal to be submitted to the concerned Ministry, Government of India for providing financial assistance.	Urban Development Department/ Kailasahar Municipal Council/	Within three year
(b)	Channelization including diversion of sewage generated from household townships to sewer lines /interception of all the drains presently carrying sewage and for ensuring proper treatment through the upcoming STPs	Urban Development Department/ Kailasahar Municipal Council/	Within six months after installation
III	Solid Waste Manage Plan		
(a)	Door to Door Collection with source segregation covering all the wards of Urban local bodies in the catchment areas of Manu River involving SHG.	Urban Development Department/ Kailasahar Municipal Council/	Within six months
(b)	Setting up of Solid Waste Management Disposal Site at Kailasahar Municipal area for effective solid waste management for the cluster of Kailasahar Municipal council and other adjacent urban local bodies	Urban Development Department/ Kailasahar Municipal Council/	Within three year
(c)	Prohibition of disposal of municipal plastic, bio- medical waste and other wastes particularly in drains	Urban Development Department/ Kailasahar Municipal Council/	Within six months

Sl. No.	Action plan for Restoration identified river stretches of Tripura	Organization/ Agency Responsible for Execution of the Action plan	Time Line
IV	Ground Water Assessment		
(a)	Carrying assessment of ground water survey once in year for quality in the identified river stretch. Sealing up of contaminated ground water sources, if any and accordingly measures to be taken for rectification. Initiative to be taken for supply of potable water to the affected communities, if any.	Tripura State Pollution Control Board /PWD (DWS), Government of Tripura	Once in a year
(b)	All Industrial units located in the catchment areas of Manu River have already been directed to obtained valid clearance or NOC from Central Ground Water Authority for ground water extraction to operate their unit. Strict vigilance to these industries regarding the use of ground water without NOC.	Tripura State Pollution Control Board / CGWA	Within three months
(c)	To encourage rain water harvesting by the industrial, commercial and other institutions and groundwater recharging with only clean water be encouraged by CGWB/CGWA	PWD (Water Resources), CGWB/CGWA/ULBS	Continuos activity
V	Flood Plain Zone (FPZ)		
(k)	Plantation on either sides of the river banks wherever possible to be carried out including area falling under private holdings.	Forests Department/Urban Development Department/ Agartala Municipal Corporation, Ranirbaxar Municipal Council and Jirania Nagar Panchayet	Within one year
(l)	Checking encroachments in the Flood Plan Zone of Manu river stretches	District Administration/ Urban Local Bodies	Continuos activity
VI	Environmental Flow (E-Flow) and Irrigation Practices		
(a)	Installation of digital e-flow meter to monitor the minimum discharge during lean period and records to be maintained monthly basis after installation.	PWD (Water Resources), Government of Tripura	Within one year

Sl. No.	Action plan for Restoration identified river stretches of Tripura	Organization/ Agency Responsible for Execution of the Action plan	Time Line
(b)	Generation of mass awareness to conserve water and also for good irrigation practices to be carried out by the farmers in the catchment areas of Manu River	PWD (Water Resources), Government of Tripura	Continuos activity
VII	Awareness Generation		
(a)	Extensive Awareness programme to be taken to generate awareness among local people involving Eco Clubs, NGOs and representatives of panchayets etc. in and around the identified polluted river stretches on various environmental issues.	PWD (water Resource)/ School Education/Panchayet/ Agriculture Department/ULBS/Urban Development Department/PWD(DWS)/TSPC B	Continuos activity

**MONTH WISE BOD VALUES OF IDENTIFIED RIVER WATER STRETCHES
(BURIGAON RIVER, ALONG BISHALGARH, TRIPURA)**

Month of Monitoring	Name Of Monitoring Location [Station Code(SC) :3405]	BOD values (mg/l)	Standard
July, 2016	Burigaon River At Bishalgarh, West Tripura	3.15	≤3
August, 2016	Burigaon River At Bishalgarh, West Tripura	3.08	≤3
September, 2016	Burigaon River At Bishalgarh, West Tripura	2.88	≤3
October, 2016	Burigaon River At Bishalgarh, West Tripura	2.33	≤3
November, 2016	Burigaon River At Bishalgarh, West Tripura	2.07	≤3
December, 2016	Burigaon River At Bishalgarh, West Tripura	1.93	≤3
January, 2017	Burigaon River At Bishalgarh, West Tripura	1.69	≤3
February, 2017	Burigaon River At Bishalgarh, West Tripura	1.3	≤3
March, 2017	Burigaon River At Bishalgarh, West Tripura	1.45	≤3
April, 2017	Burigaon River At Bishalgarh, West Tripura	1.54	≤3
May, 2017	Burigaon River At Bishalgarh, West Tripura	1.68	≤3
June, 2017	Burigaon River At Bishalgarh, West Tripura	1.84	≤3
July, 2017	Burigaon River At Bishalgarh, West Tripura	1.98	≤3
August, 2017	Burigaon River At Bishalgarh, West Tripura	2.28	≤3
September, 2017	Burigaon River At Bishalgarh, West Tripura	2.02	≤3
October, 2017	Burigaon River At Bishalgarh, West Tripura	1.58	≤3
November, 2017	Burigaon River At Bishalgarh, West Tripura	1.14	≤3
December, 2017	Burigaon River At Bishalgarh, West Tripura	0.94	≤3
January, 2018	Burigaon River At Bishalgarh, West Tripura	0.72	≤3
February, 2018	Burigaon River At Bishalgarh, West Tripura	0.58	≤3
March, 2018	Burigaon River At Bishalgarh, West Tripura	0.4	≤3
April, 2018	Burigaon River At Bishalgarh, West Tripura	0.32	≤3
May, 2018	Burigaon River At Bishalgarh, West Tripura	0.68	≤3
June, 2018	Burigaon River At Bishalgarh, West Tripura	1.22	≤3
July, 2018	Burigaon River At Bishalgarh, West Tripura	1.06	≤3
August, 2018	Burigaon River At Bishalgarh, West Tripura	0.74	≤3
September, 2018	Burigaon River At Bishalgarh, West Tripura	1.22	≤3
Average		0.788	-

**MONTH WISE BOD VALUES OF IDENTIFIED RIVER WATER STRETCHES
(GUMTI RIVER, TELKAJLA TO AMARPUR, TRIPURA)**

Month of Monitoring	Measured BOD values (mg/l)						Standard
	Gumti At U/S South Tripura, Tripura (SC : 1403)	Gumti At D/S South Tripura, Tripura (SC: 1404)	Gumati River At Rajdharnagar, South Tripura (SC :3406)	Gumati River At Amarpur, South Tripura (SC : 3407)	Gumati River At Thirthamukh, South Tripura (SC : 3408)	Gumati River At Subhas Setu, Dhajanagar, D/S Udaipur (SC : 3409)	
July, 2016	1.57	3.59	1.06	1.23	1.54	2.18	≤3
August, 2016	1.21	3.13	1.05	1.07	1.38	2.05	≤3
September, 2016	1.05	3.01	0.89	1.01	1.05	1.76	≤3
October, 2016	1.01	2.95	0.75	0.89	0.95	1.65	≤3
November, 2016	0.87	2.31	0.58	0.75	0.88	1.23	≤3
December, 2016	0.63	2.05	0.37	0.61	0.77	1.09	≤3
January, 2017	0.41	1.93	0.31	0.55	0.7	0.98	≤3
February, 2017	0.32	1.75	0.25	0.48	0.55	0.9	≤3
March, 2017	0.38	1.58	0.29	0.53	0.72	1.18	≤3
April, 2017	0.18	1.64	0.35	0.64	0.78	1.06	≤3
May, 2017	0.35	1.98	0.46	0.78	0.96	1.14	≤3
June, 2017	0.28	2.32	0.52	0.88	0.96	1.08	≤3
July, 2017	0.34	2.08	0.94	1.28	1.24	1.28	≤3
August, 2017	0.86	2.44	1.34	1.54	1.38	1.96	≤3
September, 2017	0.58	2.18	1.14	1.28	1.26	1.64	≤3
October, 2017	0.28	1.56	0.84	0.96	1.04	1.18	≤3
November, 2017	0.2	1.18	0.68	0.74	0.64	1.02	≤3
December, 2017	0.12	0.96	0.44	0.58	0.48	0.68	≤3
January, 2018	0.1	0.72	0.36	0.36	0.36	0.46	≤3
February, 2018	0.18	0.58	0.28	0.28	0.24	0.34	≤3
March, 2018	0.24	0.4	0.34	0.36	0.32	0.38	≤3
April, 2018	0.18	0.22	0.26	0.22	0.26	0.26	≤3
May, 2018	0.66	1.82	0.66	1.06	0.78	0.82	≤3
June, 2018	0.48	1.24	0.74	0.96	0.56	0.82	≤3
July, 2018	0.4	1.08	0.62	0.78	0.48	0.68	≤3
August, 2018	0.46	0.74	0.54	0.62	0.42	0.52	≤3
September, 2018	0.42	0.62	0.94	0.54	0.58	0.78	≤3
October, 2018	0.4	0.58	0.68	0.30	0.32	0.52	≤3
Average	0.50	1.66	0.63	0.76	0.77	1.05	-

**MONTH WISE BOD VALUES OF IDENTIFIED RIVER WATER STRETCHES
(HAORA RIVER, CHAMPAKNAGAR TO AGARTALA, TRIPURA)**

Month of Monitoring	Measured BOD values (mg/l)					Standard
	Howrah River At Aralia, West Tripura (SC : 3401)	Chandrapur, Agartala D/S Of Haora River, Tripura (SC : 1726)	Howrah River At Dashamighat, West Tripura (SC : 3397)	Howrah River At Joynagar, West Tripura (SC : 3403)	Howrah River At Kalabagan, West Tripura (SC : 3402)	
July, 2016	0.75	3.08	2.15	0.68	1.47	≤3
August, 2016	0.68	2.51	1.98	0.88	1.09	≤3
September, 2016	0.57	2.09	0.72	0.62	0.69	≤3
October, 2016	0.48	1.97	0.54	0.26	0.61	≤3
November, 2016	0.39	1.08	1.04	1.32	0.49	≤3
December, 2016	0.21	1.02	1.32	1.22	0.28	≤3
January, 2017	0.13	NIL	2.08	1.04	0.2	≤3
February, 2017	0.11	0.84	0.94	1.88	0.15	≤3
March, 2017	0.18	0.92	1.57	0.91	0.19	≤3
April, 2017	0.28	1.08	3.05	0.86	0.28	≤3
May, 2017	0.42	1.24	2.14	0.58	0.35	≤3
June, 2017	0.94	1.32	0.36	0.32	0.86	≤3
July, 2017	1.28	1.54	3.17	0.92	1.24	≤3
August, 2017	1.36	1.88	0.66	0.55	1.68	≤3
September, 2017	1.22	1.56	0.22	0.5	1.38	≤3
October, 2017	1.04	1.08	1.98	1.56	1.04	≤3
November, 2017	0.68	0.56	0.88	1.48	0.84	≤3
December, 2017	0.52	0.44	0.38	1.18	0.54	≤3
January, 2018	0.46	0.32	1.84	0.81	0.38	≤3
February, 2018	0.38	0.24	2.31	0.88	0.3	≤3
March, 2018	0.26	0.28	1.54	0.38	0.26	≤3
April, 2018	0.2	0.22	1.62	1.24	0.22	≤3
May, 2018	0.48	1.28	1.38	0.78	0.46	≤3
June, 2018	0.86	1.06	2.36	1.05	0.58	≤3
July, 2018	0.68	0.84	2.08	0.38	0.48	≤3
August, 2018	0.54	0.68	0.3	0.64	0.4	≤3
September, 2018	0.86	0.52	0.42	0.56	0.88	≤3
October, 2018	0.50	0.46	0.56	0.48	1.47	≤3
Average	0.58	1.11	1.41	0.85	0.67	-

**MONTH WISE BOD VALUES OF IDENTIFIED RIVER WATER STRETCHES
(JURI RIVER ALONG DHARMANAGAR, TRIPURA)**

Month of monitoring	Name of Monitoring Location (station Code: 3421)	Measured BOD values (mg/l)	Standard
July, 2016	Juri River At Krishnapur, D/S Of Dharmanagar, North	4.31	≤3
August, 2016	Juri River At Krishnapur, D/S Of Dharmanagar, North	4.09	≤3
September, 2016	Juri River At Krishnapur, D/S Of Dharmanagar, North	3.56	≤3
October, 2016	Juri River At Krishnapur, D/S Of Dharmanagar, North	3.21	≤3
November, 2016	Juri River At Krishnapur, D/S Of Dharmanagar, North	3.08	≤3
December, 2016	Juri River At Krishnapur, D/S Of Dharmanagar, North	2.77	≤3
January, 2017	Juri River At Krishnapur, D/S Of Dharmanagar, North	2.35	≤3
February, 2017	Juri River At Krishnapur, D/S Of Dharmanagar, North	2.08	≤3
March, 2017	Juri River At Krishnapur, D/S Of Dharmanagar, North	2.15	≤3
April, 2017	Juri River At Krishnapur, D/S Of Dharmanagar, North	2.24	≤3
May, 2017	Juri River At Krishnapur, D/S Of Dharmanagar, North	2.38	≤3
June, 2017	Juri River At Krishnapur, D/S Of Dharmanagar, North	2.54	≤3
July, 2017	Juri River At Krishnapur, D/S Of Dharmanagar, North	2.68	≤3
August, 2017	Juri River At Krishnapur, D/S Of Dharmanagar, North	2.88	≤3
September, 2017	Juri River At Krishnapur, D/S Of Dharmanagar, North	2.38	≤3
October, 2017	Juri River At Krishnapur, D/S Of Dharmanagar, North	2.04	≤3
November, 2017	Juri River At Krishnapur, D/S Of Dharmanagar, North	1.46	≤3
December, 2017	Juri River At Krishnapur, D/S Of Dharmanagar, North	1.08	≤3
January, 2018	Juri River At Krishnapur, D/S Of Dharmanagar, North	0.78	≤3
February, 2018	Juri River At Krishnapur, D/S Of Dharmanagar, North	0.56	≤3
March, 2018	Juri River At Krishnapur, D/S Of Dharmanagar, North	0.88	≤3
April, 2018	Juri River At Krishnapur, D/S Of Dharmanagar, North	0.56	≤3
May, 2018	Juri River At Krishnapur, D/S Of Dharmanagar, North	1.28	≤3
June, 2018	Juri River At Krishnapur, D/S Of Dharmanagar, North	1.06	≤3
July, 2018	Juri River At Krishnapur, D/S Of Dharmanagar, North	0.68	≤3
August, 2018	Juri River At Krishnapur, D/S Of Dharmanagar, North	0.48	≤3
September, 2018	Juri River At Krishnapur, D/S Of Dharmanagar, North	0.64	≤3
October, 2018	Juri River At Krishnapur, D/S Of Dharmanagar, North	0.58	≤3
Average		1.95	

**MONTH WISE BOD VALUES OF IDENTIFIED RIVER WATER STRETCHES
(KHOWAI RIVER ALONG TELIAMURA, TRIPURA)**

Month of Monitoring	Measured BOD values (mg/l)				Standard
	Khowai River At Chakmaghat, West Tripura (SC : 3400)	Khowai River At Karailong, Teliamura, West Tripura (SC : 3403)	Khowai River At Kumari Madhuti Setu, West Tripura (SC : 3399)	Khowai River At Trisha Bari, Teliamura, West Tripura (SC : 3398)	
July, 2016	2.09	1.85	2.13	1.31	≤3
August, 2016	1.87	0.52	1.89	1.19	≤3
September, 2016	1.34	0.59	1.63	1.01	≤3
October, 2016	1.04	2.61	1.51	0.89	≤3
November, 2016	0.87	1.08	1.37	0.81	≤3
December, 2016	0.81	0.65	1.21	0.57	≤3
January, 2017	0.75	2.01	1.01	0.39	≤3
February, 2017	0.68	0.32	0.78	0.31	≤3
March, 2017	0.74	1.14	0.82	0.42	≤3
April, 2017	0.88	2.57	0.98	0.54	≤3
May, 2017	0.94	1.04	1.24	0.68	≤3
June, 2017	1.24	2.57	1.48	0.84	≤3
July, 2017	1.36	1.68	1.64	0.96	≤3
August, 2017	1.88	0.98	1.88	1.34	≤3
September, 2017	1.46	0.7	1.62	1.08	≤3
October, 2017	1.24	1.59	1.24	0.58	≤3
November, 2017	1.04	1.31	1.08	0.42	≤3
December, 2017	0.82	0.38	0.88	0.36	≤3
January, 2018	0.68	1.08	0.62	0.22	≤3
February, 2018	0.52	1.48	0.48	0.2	≤3
March, 2018	0.46	1.48	0.42	0.24	≤3
April, 2018	0.32	0.94	0.36	0.2	≤3
May, 2018	0.54	0.34	0.48	0.44	≤3
June, 2018	0.88	1.25	0.94	0.56	≤3
July, 2018	0.54	0.88	0.46	0.42	≤3
August, 2018	0.44	0.58	0.42	0.36	≤3
September, 2018	0.62	0.82	0.36	0.42	≤3
October, 2018	0.56	0.4	0.3	0.38	≤3
Average	0.95	1.17	1.04	0.61	-

**MONTH WISE BOD VALUES OF IDENTIFIED RIVER WATER STRETCHES
(MANU RIVER ALONG KAILASAHAR, TRIPURA)**

Month of Monitoring	Manu River At Kailashahar D/S, North Tripura (Station Code: 3418)	Standard
July, 2016	3.35	≤3
August, 2016	3.01	≤3
September, 2016	2.59	≤3
October, 2016	2.31	≤3
November, 2016	2.05	≤3
December, 2016	1.85	≤3
January, 2017	1.43	≤3
February, 2017	1.18	≤3
March, 2017	1.27	≤3
April, 2017	1.38	≤3
May, 2017	1.48	≤3
June, 2017	1.58	≤3
July, 2017	1.74	≤3
August, 2017	1.88	≤3
September, 2017	1.52	≤3
October, 2017	1.18	≤3
November, 2017	1.08	≤3
December, 2017	0.56	≤3
January, 2018	0.4	≤3
February, 2018	0.36	≤3
March, 2018	0.38	≤3
April, 2018	0.3	≤3
May, 2018	0.98	≤3
June, 2018	0.82	≤3
July, 2018	0.64	≤3
August, 2018	0.52	≤3
September, 2018	0.84	≤3
October, 2018	0.62	≤3
Average	1.33	-

**ANALYTICAL RESULTS OF SURFACE WATER SAMPLES COLLECTED FROM
BURIGAON RIVER (MAY, 2019)**

Sl. No	Parameters	B-1	B-2	B-3
1.	Bio-Chemical Oxygen Demand (BOD), mg/l	1.58	1.12	1.92
2.	Total Coliform (MPN/100)	220	220	170
3.	Fecal Coliform (MPN/100)	170	150	130

Site of Collection:

B-1: Burigaon River at Bishalgarh.

B-2: Up Stream of Burigaon River at Bishalgarh.

B-3: Down Stream of Burigaon River at Bishalgarh.

**ANALYTICAL RESULTS OF SURFACE WATER SAMPLES COLLECTED FROM GUMTI RIVER
(MAY, 2019)**

Parameters	G-1	G-2	G-3	G-4	G-5	G-6	G-7	G-8	G-9	G-10	G-11	G-12	G-13	G-14	G-15	G-16	G-17	G-18
Bio-Chemical Oxygen Demand (BOD), mg/l	1.86	1.22	1.58	2.04	1.88	1.28	1.94	1.22	1.56	1.52	0.56	1.2	1.28	1.56	0.78	2.42	1.38	1.56
Total Coliform (MPN/100)	280	220	240	220	210	210	240	220	280	240	210	280	220	350	280	240	220	240
Fecal Coliform (MPN/100)	170	170	170	150	130	150	170	170	220	150	150	220	130	280	220	170	130	170

Site of Collection: G-1: Gomti River at Jatanbari, G-2: Upstream Gomti River at Jatanbari, G-3: Downstream of Gomti River at Jatanbari, G-4: Gomti River at Sonamura, G-5: Upstream of Gomti River at Sonamura, G-6: Downstream of Gomti River at Sonamura, G-7: Gomti River at Rajdharnagar, G-8: Upstream of Gomti River at Rajdharnagar, G-9: Downstream of Gomti River at Rajdharnagar, G-10: Gomti River at Amarpur, G-11: Upstream of Gomti River at Amarpur, G-12: Downstream of Gomti River at Amarpur, G-13: Gomti River at Tirthamukh, G-14: Upstream of Gomti River at Tirthamukh, G-15: Downstream of Gomti River at Tirthamukh, G-16: Gomti River at Subhashsetu, G-17: Upstream of Gomti River at Subhashsetu, G-18: Downstream of Gomti River at Subhashsetu

ANALYTICAL RESULTS OF SURFACE WATER SAMPLES COLLECTED FROM HAORA RIVER (MAY, 2019)

Parameters	G-1	G-2	G-3	G-4	G-5	G-6	G-7	G-8	G-9	G-10	G-11	G-12	G-13	G-14	G-15
Bio-Chemical Oxygen Demand (BOD) mg/l	1.56	1.08	1.38	2.44	1.82	2.08	1.94	1.26	1.08	1.88	0.68	1.02	1.82	1.04	1.38
Total Coliform (MPN/100)	240	240	220	430	350	350	240	220	210	220	150	210	240	220	240
Fecal Coliform (MPN/100)	150	130	150	350	220	240	170	150	150	170	110	150	170	170	170

Site of Collection: G-1: Haora River at Chandrapur, G-2: Upstream Haora River at Chandrapur, G-3: Downstream of Haora River at Chandrapur, G-4: Haora River at Dashamighat, G-5: Upstream of Haora River at Dashamighat, G-6: Downstream of Haora River at Dashamighat, G-7: Haora River at Aralia, G-8: Upstream of Haora River at Aralia, G-9: Downstream of Haora River at Aralia, G-10: Haora River at Kalabagan, G-11: Upstream of Haora River at Kalabagan, G-12: Downstream of Haora River at Kalabagan, G-13: Haora River at Joynagar, G-14: Upstream of Haora River at Joynagar, G-15: Downstream of Haora River at Joynagar.

ANALYTICAL RESULTS OF SURFACE WATER SAMPLES COLLECTED FROM MANU RIVER (MAY, 2019)

Sl. No	Parameters	B-1	B-2	B-3
4.	Bio-Chemical Oxygen Demand (BOD), mg/l	1.56	1.02	1.14
5.	Total Coliform (MPN/100)	280	240	220
6.	Fecal Coliform (MPN/100)	170	170	150

Site of Collection:

B-1: Manu River at Kailasahar.

B-2: Up Stream of Manu River at Kailasahar.

B-3: Down Stream of Manu River at Kailasahar.

ANALYTICAL RESULTS OF SURFACE WATER SAMPLES COLLECTED FROM KHOWAI RIVER (MAY, 2019)

Parameters	G-1	G-2	G-3	G-4	G-5	G-6	G-7	G-8	G-9	G-10	G-11	G-12
Bio-Chemical Oxygen Demand (BOD) mg/l	1.24	1.08	1.18	1.08	0.98	1.02	1.46	1.12	1.08	1.68	1.04	1.42
Total Coliform (MPN/100)	240	240	220	240	240	220	240	220	280	240	220	220
Fecal Coliform (MPN/100)	150	150	150	170	170	150	170	170	220	150	150	170

Site of Collection: G-1: Khowai River at Trishabari, G-2: Upstream of Khowai River at Trishabari, G-3: Downstream of Khowai River at Trishabari, G-4: Khowai River at Kumari Madhuti setu, G-5: Upstream of Kumari Madhuti setu, G-6: Downstream of Kumari Madhuti setu, G-7: Khowai River at Chakmaghat, G-8: Upstream of Khowai River at Chakmaghat, G-9: Downstream of Khowai River at Chakmaghat, G-10: Khowai River at Karailong, G-11: Upstream of Khowai River at Karailong, G-12: Downstream of Khowai River at Karailong.

ANALYTICAL RESULTS OF SURFACE WATER SAMPLES COLLECTED FROM JURI RIVER (MAY, 2019)

Sl. No	Parameters	B-1	B-2	B-3
7.	Bio-Chemical Oxygen Demand (BOD), mg/l	1.46	1.02	1.28
8.	Total Coliform (MPN/100)	220	220	240
9.	Fecal Coliform (MPN/100)	150	150	170

Site of Collection:

B-1: Juri River at Krishnapur.

B-2: Up Stream of Juri River at Krishnapur.

B-3: Down Stream of Juri River at Krishnapur.

**ANALYTICAL RESULTS OF GROUND WATER SAMPLES COLLECTED FROM THE
CATCHMENT AREA OF BURIGAON RIVER ALONG TO THE BISHALGARH STRECHES,
TRIPURA (MAY, 2019)**

SL. No	Parameters	S-1	S-2	S-3	S-4	<i>Drinking water quality standards (IS 10500 : 2012)</i>
1.	pH	5.59	5.69	5.38	5.47	6.5-8.5
2.	Conductivity (μ S/cm)	164	177	153	155	-
3.	Turbidity (mg/l)	9.9	2.55	1.89	1.58	<5
4.	Total Suspended Solids (mg/L)	26	30	28	26	-
5.	Total Dissolved Solids (mg/l)	70	92	68	64	<500
6.	Total Hardness (mg/l)	50.5	40.4	40.4	40.4	<300
7.	Calcium (mg/l)	11.2	12.6	10.8	8.12	<75
8.	Magnesium (mg/l)	3.68	4.28	3.02	3.26	-
9.	Chlorides (mg/l)	19.6	14.36	15.18	13.64	<250
10.	Alkalinity (mg/l)	39.7	51.7	47.3	42.5	<200
11.	Iron (mg/l)	3.68	1.68	3.04	1.05	<0.3
12.	Nitrate (NO ₃) (mg/l)	0.20	0.15	0.10	0.06	<45
13.	Fluoride (mg/l)	0.05	0.05	0.05	0.05	-
14.	Coliform (MPN)	<1.8	<1.8	<1.8	<1.8	<1.8
15.	Residual Chlorine (mg/l)	0.05	0.05	0.05	0.05	<1

Site of collection: S-1: Tube well, Near Bishalgarh Motorstand, S-2: Tube well, Boxonagar Rd, S-3: Tube well, Golaghati Rd, S-4: Tube well, Bishalgarh Bazaar.

**ANALYTICAL RESULTS OF GROUND WATER SAMPLES COLLECTED FROM THE
CATCHMENT AREA OF GUMTI RIVER ALONG TO THE TELKAJLA TO AMARPUR
STRECHES, TRIPURA(MAY, 2019)**

SL. No.	Parameters	S-1	S-2	S-3	S-4	S-5	S-6	S-7	S-8	S-9	Drinking water quality standards (IS 10500 : 2012)
1.	pH	5.65	5.27	5.51	5.08	5.35	5.29	5.83	5.05	5.95	6.5-8.5
2.	Conductivity (μ S/cm)	273	188	147	115	283	106	356	241	220	-
3.	Turbidity (mg/l)	4.08	7.89	2.52	1.89	2.08	1.28	8.75	2.69	15.7	<5
4.	Total Suspended Solids (mg/L)	42	20	18	18	58	18	102	42	42	-
5.	Total Dissolved Solids (mg/l)	126	78	68	44	158	66	222	118	124	<500
6.	Total Hardness (mg/l)	60.6	30.3	20.2	30.3	30.3	20.2	50.5	40.4	40.4	<300
7.	Calcium (mg/l)	19.5	8.64	8.68	7.52	8.26	6.58	13.6	11.2	11.6	<75
8.	Magnesium (mg/l)	5.68	3.62	3.56	2.88	3.78	3.24	4.86	4.06	4.08	-
9.	Chlorides (mg/l)	15.8	9.64	7.52	5.06	9.26	10.6	18.8	8.26	7.54	<250
10.	Alkalinity (mg/l)	99.7	45.3	44.7	28.6	51.9	39.8	77.9	68.9	65.8	<200
11.	g/l)	0.27	2.05	0.19	0.31	0.23	0.20	1.87	0.12	1.09	<0.3
12.	n (NO ₃)	0.25	0.13	0.32	0.18	0.11	0.10	0.58	0.61	0.52	<45
13.	ate (mg/l)	0.05	0.06	0.05	0.05	0.05	0.05	0.05	0.06	0.05	-
14.	oliform (MPN)	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
15.	es (mg/l)	0.05	0.05	0.05	0.05	0.05	0.06	0.05	0.05	0.06	<1

Site of collection: S-1: Tube well, Durgapur, S-2: Tube well, Srimantapur, S-3: Tube well, Indiranagar, S-4: Tube well, Telkajla, S-5: Tube well, Kakraban Bazar, S-6: Tube well, Gakulpur, S-7: Tube well, Near Rajarbag, S-8: Tube well, Dalak, S-9: Tube well, Kawamaraghat.

**ANALYTICAL RESULTS OF GROUND WATER SAMPLES COLLECTED FROM THE
CATCHMENT AREA OF HAORA RIVER ALONG TO THE AGARTALA TO BISHRAMGANJ
STRECHES, TRIPURA (MAY, 2019)**

SL. No	Parameters	S-1	S-2	S-3	S-4	S-5	S-6	Drinking water quality standards (IS 10500 :2012)
1.	pH	6.27	6.11	5.92	6.31	5.22	6.03	6.5-8.5
2.	Conductivity (μ S/cm)	259	169	352	289	132	257	-
3.	Turbidity (mg/l)	2.08	1.37	0.55	3.19	1.08	10.9	<5
4.	Total Suspended Solids (mg/L)	42	22	98	58	24	62	-
5.	Total Dissolved Solids (mg/l)	132	66	204	118	58	128	<500
6.	Total Hardness (mg/l)	40.4	40.4	30.3	40.4	40.4	30.3	<300
7.	Calcium (mg/l)	9.26	8.58	9.68	8.56	8.04	7.26	<75
8.	Magnesium (mg/l)	2.58	3.04	4.08	3.26	3.12	3.04	-
9.	Chlorides (mg/l)	13.7	11.5	15.9	10.3	7.52	7.86	<250
10.	Alkalinity (mg/l)	41.3	37.9	68.2	44.8	47.8	42.7	<200
11.	g/l)	1.79	0.96	0.28	0.51	0.22	2.18	<0.3
12.	n (NO ₃)	0.11	0.15	0.27	0.22	0.25	0.39	<45
13.	ate (mg/l)	0.05	0.05	0.06	0.05	0.05	0.05	-
14.	oliform (MPN)	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
15.	es (mg/l)	0.06	0.05	0.05	0.06	0.05	0.05	<1

Site of collection: S-1: Tube well, Rajnagar, S-2: Tube well, Battala, S-3: Tube well, Nagerjala, S-4: Tube well, Ranir Bazaar, S-5: Tube well, Baishamanipara, Champaknagar, S-6: Tube well, Champaknagar Bazar.

**ANALYTICAL RESULTS OF GROUND WATER SAMPLES COLLECTED FROM THE
CATCHMENT AREA OF JURI RIVER ALONG TO THE DHARMANAGAR STRECHES,
TRIPURA (MAY, 2019)**

SL. No.	Parameters	S-1	S-2	<i>Drinking water quality standards (IS 10500 : 2012)</i>
1.	pH	5.61	5.07	6.5-8.5
2.	Conductivity (µS/cm)	241	175	-
3.	Turbidity (mg/l)	0.58	1.57	<5
4.	Total Suspended Solids (mg/L)	48	30	-
5.	Total Dissolved Solids (mg/l)	132	92	<500
6.	Total Hardness (mg/l)	60.6	40.4	<300
7.	Calcium (mg/l)	16.4	8.38	<75
8.	Magnesium (mg/l)	6.22	3.04	-
9.	Chlorides (mg/l)	15.7	8.36	<250
10.	Alkalinity (mg/l)	87.1	25.9	<200
11.	Iron (mg/l)	2.28	0.15	<0.3
12.	Nitrate (NO ₃) (mg/l)	0.22	0.13	<45
13.	Phosphate (mg/l)	0.05	0.06	-
14.	Coliform (MPN)	<1.8	<1.8	<1.8
15.	Fluorides (mg/l)	0.06	0.06	<1

Site of collection: S-1: Tube well, Charubasa, S-2: Tube well, Tilthaibazar.

**ANALYTICAL RESULTS OF GROUND WATER SAMPLES COLLECTED FROM THE
CATCHMENT AREA OF KHOWAI RIVER ALONG TO THE TELIAMURA STRECHES,
TRIPURA (MAY, 2019)**

SL. No	Parameters	S-1	S-2	S-3	S-4	S-5	S-6	S-7	S-8	Drinking water quality standards (IS 10500 : 2012)
1.	pH	6.64	6.71	6.34	6.29	6.81	6.62	5.89	5.95	6.5-8.5
2.	Conductivity (µS/cm)	257	232	171	168	145	187	113	175	-
3.	Turbidity (mg/l)	2.15	2.89	5.28	4.92	4.52	0.56	1.11	6.28	<5
4.	Total Suspended Solids (mg/L)	58	64	34	28	30	38	22	34	-
5.	Total Dissolved Solids (mg/l)	124	122	88	82	84	98	58	84	<500
6.	Total Hardness (mg/l)	40.4	50.5	30.3	40.4	50.5	30.3	50.5	50.5	<300
7.	Calcium (mg/l)	9.86	11.2	9.24	12.6	10.8	8.64	8.98	9.26	<75
8.	Magnesium (mg/l)	3.24	4.18	4.08	4.26	4.04	3.22	3.14	3.52	-
9.	Chlorides (mg/l)	9.56	11.2	9.84	9.28	12.4	10.6	9.24	10.4	<250
10.	Alkalinity (mg/l)	43.9	55.7	48.2	51.4	68.7	49.8	56.7	39.8	<200
11.	g/l)	0.58	0.39	1.05	0.86	0.18	0.22	0.86	0.27	<0.3
12.	n (NO ₃)	0.22	0.35	0.18	0.23	0.35	0.29	0.15	0.16	<45
13.	ate (mg/l)	0.06	0.05	0.06	0.06	0.05	0.05	0.05	0.05	-
14.	oliform (MPN)	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
15.	es (mg/l)	0.06	0.05	0.06	0.05	0.05	0.08	0.05	0.05	<1

Site of collection: S-1: Tube well, Chalitabari, S-2: Tube well, Champlaibari, S-3: Tube well, Bisghar, S-4: Tube well, Karailong, S-5: Tube well, Teliamura Fish market, S-6: Tube well, Teliamura market, S-7: Tube well, Chakmaghat (Main Rd), S-8: Tube well, Chakmaghat (Opp. to Khowai River).

**ANALYTICAL RESULTS OF GROUND WATER SAMPLES COLLECTED FROM THE
CATCHMENT AREA OF MANU RIVER ALONG TO THE KAILASAHAR STRECHES,
TRIPURA(MAY, 2019)**

SL. No.	Parameters	S-1	S-2	<i>Drinking water quality standards (IS 10500 : 2012)</i>
1.	pH	5.99	6.87	6.5-8.5
2.	Conductivity (μ S/cm)	148	173	-
3.	Turbidity (mg/l)	6.21	3.08	<5
4.	Total Suspended Solids (mg/L)	28	36	-
5.	Total Dissolved Solids (mg/l)	82	92	<500
6.	Total Hardness (mg/l)	40.4	30.3	<300
7.	Calcium (mg/l)	8.62	6.28	<75
8.	Magnesium (mg/l)	3.24	3.08	-
9.	Chlorides (mg/l)	12.5	10.9	<250
10.	Alkalinity (mg/l)	45.7	48.9	<200
11.	Iron (mg/l)	0.48	0.19	<0.3
12.	Nitrate (NO ₃) (mg/l)	0.20	0.16	<45
13.	Fluoride (mg/l)	0.05	0.05	-
14.	Coliform (MPN)	<1.8	<1.8	<1.8
15.	Dissolved Oxygen (mg/l)	0.05	0.05	<1

Site of collection: S-1: Tube well, Srirampur, S-2: Tube well, Gobindapur.

List of industries categorically located in and around 500 meters of the six identified polluted river Stretches

Sl. No.	River	Identified River Stretches	Type of Industries	Category	Name & Address of the Industries
1.	Burigaon	Along Bishalgarh	Aluminium Product	Orange	Loknath Industry, Netajinagar, Bishalgarh, Sepahijala, Tripura
			Automobile Servicing	Orange	Biswakarma Engineering Workshop, Bishalgarh Bus Stand, Sepahijala, Tripura
					Das Engineering, Routh Khala, Satsangha Road, Bishalgarh, Tripura (Sepahijala)
					Joyguru Engg. Workshop, Bishalgarh, near satsangha, Sepahijala, Tripura
					Joyram Welding House, Raghunathpur, Boxanagar Road, Bishalgarh, Sepahijala, Tripura
					New Debnath Motors, Bishalgarh, Lalsingmura Bus Stand, Tripura (Sepahijala)
					Sonai Mechanical & Repairing workshop Jangalia, Bishalgarh, Sepahijala, Tripura
					Sri Krishna Engineering & Servicing, Jangalia, P.O: Bishalgarh, Tripura (Sepahijala)
					Welding House, Raghunathpur, Boxanagar Road, Bishalgarh, Sepahijala, Tripura
			Cement Product	Green	Joy Guru Cement Pala Centre, Routh Khala, Bishalgarh, Tripura (Sepahijala)
			Ice cream	Orange	Gandheswari Food Products, Bishalgarh Chowmohani, Tripura (Sepahijala)
					Kripa Ice Cream Factory, Bishalgarh Bridge Chowmohani, Tripura (Sepahijala)
					Maa Manasa Ice Factory, Raghunathpur. Bishalgarh, Tripura (Sepahijala)
					Saha Ice Factory, Bishalgarh Bazar, P. O. – Bishalgarh, Sepahijala, Tripura
			Paper Product	Green	Renu Laminating and Paper Bag Manufacturing Industry, Central Road, Bishalgarh Bazar, Tripura (Sepahijala)
			Plastic Product	Green	Renu Poly Udyog, Netaji Nagar, P.O: Bishalgarh, Tripura (Sepahijala)
					Bakul Poly Industries, Vill: Raghunathpur, PO: Bishalgarh, Tripura (Sepahijala)
					Loknath Enterprise, Netajinagar, Bishalgarh, Tripura (Sepahijala)
			Printing Press	Orange	Renu Poly Printing Press, Central Rd, Bishalgarh Bazar, Sepahijala, Tripura
			Rice Mill	Green	Hoque Rice Mill, Raghunathpur, Bishalgarh, Sepahijala, Tripura
					Karmakar Rice & Atta Mill, Raghunathpur, Bishalgarh, Sepahijala, Tripura
					Ramkrishna Rice Mill, Vill: RouthKhala, P.O: Bishalgarh, Sepahijala, Tripura

Sl. No.	River	Identified River Stretches	Type of Industries	Category	Name & Address of the Industries
					Ramthakur Rice Mill, Raghunathpur, Bishalgarh, Tripura (Sepahijala)
					Rice Mill, Jangalia, P.O. Bishalgarh, Sepahijala, Tripura
			Spice	Green	Saha Cook Wells, New Market, Bishalgarh, Tripura (Sepahijala)
					Joy Guru Steel Industries, Vill. Madhya Laxmibil, Bishalgarh, Tripura(Sepahijala)
					Joy Maa Tara SHG Industries, Vill: Jangalia, P.O: Bishalgarh, Tripura(Sepahijala)
					Kusum Industry, Vill: Madhya Laxmibil, P.O: Laxmibil, Bishalgarh, Tripura(Sepahijala)
					Laxmi Iron, Bishalgarh Bazar, Sepahijala,Tripura.
					Loknath Steel & grill Industry, Jangalia, Bishalgarh, Tripura(Sepahijala)
					Maa Mansa Steel Furniture, Jangalia, Bishalgarh, Sepahijala, Tripura
					Priya Steel Fabrication, Netajinagar, Bishalgarh, Tripura (Sepahijala)
					Raj Steel Furniture & Grill, Jangalia (Oppt to Satsangha),P.O: Bishalgarh, Tripura(Sepahijala)
					Roy Steel Industries, Bishalgarh, Central Road, Sepahijala, Tripura
					Rup Raj Steel Industries, Satsang Road, Bishalgarh, Tripura(Sepahijala)
					Sandhya Steel Factory, Bishalgarh Bazar, Sepahijala, Tripura
					Usha Steel factory, Bishalgarh, Uttar Bazar, P.O: Bishalgarh, Tripura(Sepahijala)
					Winner Steel Industry, Bishalgarh, Sepahijala, Tripura
Total		38			
2.	Gumti	Telkajla to Amarpur	Automobile Servicing	Orange	Anjali Motors, Rajarbag, PO: R. K. Pur, Udaipur, Gomati, Tripura
			Drinking water Processing Unit	Green	Raja Raw Ghosh (A division of Food Products), Loknath Ashram Road, Chhanban, Udaipur, Tripura(Gomati)
			Flex Printing	Orange	N. R. Udyog, Vill: N. S. Market, Room No.10, PO: R. K. Pur, Udaipur, Tripura (Gomati)Pin:799120
			Flour Mill	Orange	Ganapati Flour & Oil Mill, Central Rd, Udaipur, Radhakishorpur, Tripura(Gomati)
					Janata Rice & Wheat Mill, Central Road, Udaipur Tripura (Gomati)
			Grill & Steel furniture	Orange	Madina Iron Grill Factory, Rangamati, Amarpur, Tripura(G)
					Tarulata Grill Factory, P.O: Rajarbag, Near TRTC, Udaipur, Tripura(Gomati)
					Rupak Grill Factory, Rajarbag Bus Stand, Udaipur, Tripura (Gomati)
					Suman Super Furniture, Jawhar Road. (N. T. Road) Udaipur, Gomati , Tripura
					Deb Enginerring, Town Rajarbag, P. O. R. K. Pur,

Sl. No.	River	Identified River Stretches	Type of Industries	Category	Name & Address of the Industries
					Udaipur, Gomati ,Tripura
					Majumder Steel & Grill Factory, Gokulpur Bazar. Gokulpur, Udaipur, Gomati, Tripura
					Maa Industries, Rajarbag, T.R.T.C. Stand, Udaipur, Tripura (Gomati)
					Sree Durga Steel Furniture, Jahar Road, Udaipur, Tripura(Gomati)
					Priya Steel Furniture, Gokulnagar Bazar, P.O: Gokulnagar, Udaipur, Tripura(Gomati)
					Sree Maa Engineering, Chhanban, P.O: Rajarbag, Udaipur, Tripura (Gomati)
					Pradip Steel Industries, Vill & P.O. - Nutan Bazar, Amarpur, Tripura(Gomati)
					Roy Engineering Works, Vill & P. O : Rajarbagh, Udaipur, Tripura (Gomati)
					Loknath Steel Furniture, Agricultural Chowmhani, PO: Gokulpur, Udaipur, Tripura(Gomati)
					Abani Ice Cream Factory, Natun Bazar, Amarpur, Gomati, Tripura
			Ice cream	Orange	Maa laxmi Ice, Vill & PO: Gakulpur, Udaipur, Gomati, Tripura Pin:799116
					Onker Ice Factory, Vill & PO: Gakulpur, Udaipur, Gomati, Tripura
					Prabal Mistanna Bhnader, South side of KBI Ground, Udaipur, Tripura(Gomati)
			Sweet Factory	Orange	
			Vehicle Repairing	Orange	Laxmi Narayan Mechanicals, Vill & P.O. - Gokulpur, Udaipur, Tripura(Gomati)
			Wooden Furniture	Green	Giridhari Wood Craft, Giridhari Road, PO: R. K. Pur, Udaipur, Tripura (Gomati)
			Total		24
3.	Haora	Agartala to Champaknagar	Automobile Servicing	Orange	Durga Auto Engineering Works, Jirania Block Chowmuhani, West Tripura.
					Joyram Vehicle Servicing Centre, A. A. Road, Chandrapur, Agartala, Tripura (W)
					Kanti Auto Engg. Works, Chandrapur, A. A. Road, Near TATA Company, Tripura (W)
					Loknath Body Builders, Chanpur, P.O. -Khayerpur West Tripura
					Modern Auto Engg. Factory, Mekhlipara, A. A. Road, Khayerpur, Agartala, Tripura(W)
					Mousumi Hardware And Welding House, Chanpur, P. o-Khayerpur, Agartala, West Tripura.
					National Construction, Chandpur, P.O.- Khayerpur, Agartala , Tripura (W)
					New Super Auto Engg. Works, Vill: Mohanpur, P.O: Majlishpur, Tripura(W)
					Sharma Engineering Works, Kashipur, Opp. To Gopinath Temple, Tripura (W)
					Borok Servicing Centre, AA Road, Kalabagan, Jirania, Tripura(W)
					Debnath Engg. Works, Chanpur, Oppt. To Saw Mill, P.O: Khayerpur, Agartala, Tripura(W)

Sl. No.	River	Identified River Stretches	Type of Industries	Category	Name & Address of the Industries
					Highway Automobiles, Chanpur, PO: Khayerpur, Tripura (W)
					New Industrial Engineers, Khayerpur Bazar, A. A. Road, Agartala, Tripura (W)
			Bakery	Orange	Dipankar Bakery, Pratapgarh Bazar, P.O: East Prataogarh, Agartala, Tripura(W)
					Shankar Bakery, Bhattapukur Agartala, Tripura (W)
					Sukhya Bakery, Ramsundarnagar, Dashamighat, Agartala, Tripura (W)
					The Hindustan Bakery, Town Pratapgarh, Gangail Rd. Agartala, Tripura (W)
			Brick	Orange	City Bricks Industries, Joynagar, Kalabagan, Jirania, Tripura (West)
					Commercial Bricks Industries, Joynagar, Kalabagan, Jirania, Tripura (West)
					Janani Bricks Industries, Khamarbari, Champaknagar, Tripura (W)
					Janani Bricks Manufacturers. Joynagar, Jirania, Tripura (W)
					Janani Bricks, Joynagar, Jirania, Tripura(W)
					Joy Matadi Bricks Industries(Unit-II), Jirania, ADC Road, Agartala, Tripura(West)
					Joy Matadi Bricks Industries, Jiraniakhola, Birendranagar, West Tripura
					Joyram Industries, Champaknagar, Jampuijala Road, PO: Champaknagar, Tripura (W)
					Kalika Well-Set Bricks Industries, Vill : Khamarbari, P. O : Champaknagar, Tripura (W)
					Kalima Brick Industry-II, Vill: Joynagar, P.O: Jirania, Tripura (W)
					Krishna Bricks Industries, Madhabbari, Jirania,Tripura(W)
					Maa Sarada Bricks Manufacturing, Kalabagan, Bagan Tilla, Jirania, Tripura(W)
					Maa Sarada Devi Industries, Noabadi, Jirania, Tripura (W)
					National Bricks Industries, (SSB)Baskar Kobra Para, Jirania, Tripura (W)
					New Ramthakur Brick Industries,Kalabagan,Bagantilla,Jirania,Tripura(W)
					Nihar Bricks Industries, Kalabagan, Jirania, Tripura(W)
					Purbanchal Kiln Burn Bricks, Champaknagar, Sadhupara, Jirania, Tripura (W)
					Ramthakur Industries, Vill & P.O: Champaknagar, Jirania, Tripura West, Pin:799008
					Rita Bricks Industries, P. O + Vill : Khamarbari, Champaknagar, Triprua (West)
					Sagar Bricks Industry, Kalabaganm Joynagar, Jirania, Tripura(W)
					Satish Bricks Company ,Jirania khala,Birendranagar,Jirania, Tripura(W)

Sl. No.	River	Identified River Stretches	Type of Industries	Category	Name & Address of the Industries
					Shib Bricks Industries ,Jirania Khala , ADC Road ,Jirania,Tripura(W)
					Sree Ram Bricks Industries, Vill: Jirania Khola, P.O:Birendranagar, Tripura(W)
					Tripur Bricks Industry, Jirania Khola, Birendranagar, Jirania, Tripura (W)
					Tripur Bricks Industry, unit-II, Jirania Khola, Birendranagar, Jirania, Tripura (W)
			Confectionery	Orange	Annapurna Mistanna Bhandar, Bardowali, AD Nagar, Agartala, Tripura(W)
					Daya Harir Mistanna Bhandar, Town Pratapgarh, Road No-1, Agartala, Tripura(W)
					Mahamaya Mistanna Bhandar, Bhattapukur, Near Jahar Bridge, Agartala, Tripura West
					Ramkrishna Confectionery, Town Pratapgarh, Near Ramthakur Club, Agartala, Tripura(W)
					Rasaraj D'lite, Town Bardowali (Oppt. To Manasa Mistanna Bhandar), Agartala, Tripura (W)
			Dalmut	Orange	Banik & Co., Professor Para, P.O: College Tilla, Agartala, Tripura(West)
					Modern Company, Madhya Pratapgarh, Agartala, Tripura (West)
					New All Time, Town Pratapgarh, Gangail Road, Sree Krishna Pally, Agartala, Tripura(West)
					Ramkrishna Confectionery & Dulmut. Town Pratapgarh, Agartala, Tripura(West)
					Uma Dalmut Factory, Bardowali, East side of Jawhar Bridge, Agartala, West Tripura
			Food Processing	Orange	Loknath Industries Town Pratapgarh Rd. No.1 Agartala, Tripura(W)
					Priya Home Products, Town Pratapgarh, Road No.1, Agartala, Tripura(W)
					Ramthakur Home Products, Town Pratapgarh, Road No. 1, P.O; Agartala College, Tripura(W)
			Hotel	Orange	Hotel Sonartari Ronaldsay Road, Agartala Tripura(W)
				Green	Galaxy Inn, 46, Gangail Road, Melarmath, Agartala Tripura(W)
					Hotel Centre Point, Mantribari Road, Agartala, Tripura (W)
					Hotel Joy Gobinda, N. S. Road, Agartala, Tripura (W)
					Hotel Raj Palace, Melarmath, Agartala, Tripura (W)
					Hotel Sankar, N. S. Road, Agartala, Tripura (W)
					Ashirbad, Kamarpukurpar Agartala, Tripura(W)
					Musafir Restaurant, Battala, Agartala, Tripura (W)
					New Mayur Hotel, N.S. Road (Near M.G. Bazar), Agartala, Tripura(W)
					New Sankar Hotel

Sl. No.	River	Identified River Stretches	Type of Industries	Category	Name & Address of the Industries
					N.S. Road, Agartala Tripura(W)
					Prantik Catering Centre, N. S. Road, Agartala, Tripura (W)
			Ice cream	Orange	Joyram Ice Factory, Battala, Dashamighat, Agartala, Tripura(W)
					Royal Frozen, Bardowali, Oppt. To Nagerjala Motor Stand, P.O; A.D. Nagar, Agartala, Tripura(W)
					Suniti Ice Factory, Bhattapukur,A.D.Nagar, Agartala, Tripura(W)
					Barnali Ice Cream Factory, Bordowali, Milan Sangha, A. D Nagar, Tripura (West)
					Durga Ice Factory, Jirania Block Chowmohani, P.O: Birendranagar, Tripura (West)
					Joy Ice Factory, Vill. & P.O: Jirania, Tripura(West)
					Joy Ram Ice Cream Factory. Debendra Chandra Nagar, Champaknagar, Tripura (West)
			Paper Product	Green	Sridhar Industries, Town Pratapgarh, Central Road Extn. Agartala, Tripura West
			Plastic Product	Green	Radha Krishna Poly Industry, Mohanpur,P.O- Majlishpur, Agartala,Tripura(West)
			Printing Press	Orange	Priography, Town Pratapgarh, Agartala. Rd. No. 2., Tripura(West)
					Suniti Printers, Bhattapukur, A. D. Nagar, Agartala, West Tripura
			Steel Furniture & Grill Mfg. Unit	Orange	Akash Steel industries, Baldakhal, Agartala
					Baba Loknath Industries, Gangali Road.M. G. Bazar. P. O. College Tilla. Agartala, Tripura(West)
					Bristi Steel Industries, Baldakhal, Paul Para, P.O: Baldakhal, Agartala, Tripura(West)
					Choudhury Engineering Works, Kashipur (Near Sherowali Himghar), P.O: Khayerpur, Tripura West
					Das Engg, Bhattapukur A. D. Nagar. Tripura (West)
					Jhuma Steel Industries, Baldakhal, Agartala
					Joyram Steel Industry, West Pratapgarh. A. D. Nagar. Agartala, Tripura(W)
					Kali Krishna Grill Industries, Town Pratapgarh. Rd. No. 1. Gangail Road. M. G. Bazar, Agartala, Tripura (W), Pin - 2382633
					Karmakar Steel Furniture and Grill Factory, Khayerpur, Trinath, P.O. - Khayerpur, Tripura(West)
					Maa Arati Steel Engineering works Mohanpur (Opp. Kalibari) Majlishpur,Tripura(West)
					Maa Manasa Steel Furniture, Baldakhal, P.O: West Champamura, Tripura(West)
					Manika Steel Craft, Joynagar, Dashamighat, Agartala, West Tripura
					Manoj Steel Factory, Vill. & P.O: Champaknagar, Jirania, Tripura(West)

Sl. No.	River	Identified River Stretches	Type of Industries	Category	Name & Address of the Industries
					Mithun Steel Industries, Baldakhal, Paul Para, P.O: Baldakhal, Agartala, Tripura(West)
					Purnima Welding House, Baldakhal, PO: West Champamura, Tripura(West)
					Sabitri Enterprise, Khayerpur Trinath, PO- Khayerpur, Agartala. Tripura(West)
					Steel King, Jogendranagar (Near Vidyasagar Bridge) Agartala, Tripura West
					Steel Well Industries, Jogendranagar, Agartala, Tripura(West)
					Sukanta Steel Industries, Paulpara, Baldakhal, Champamura, Tripura (West)
			Suman Steel Factory, Pratapgarh Bazar, P.O: Pratapgarh, West, Tripura		
Total				97	
4.	Juri	Along Dharmanagar	Brick field	Orange	Sri Bricks Industry, Unit-II, Pekucherra, P.O. - Jalabasa, Dharmanagar, North, Tripura
					Swarupananda Brick Industry, Jalabasa, Panisagar, Dharmanagar, North, Tripura
					Narayan Bricks Industries, Jalabasa, Dharmanagar, North, Tripura
			Sri Construction, Jalabasa (Pekucherra), Dharmanagar, North, Tripura		
			Repairing and Servicing Centre	Orange	Jain Udyog (Auto Division), College Road, Dharmanagar, North, Tripura
Total				05	
5.	Khowai	Along Teliamura	Brick field	Orange	Ram Krishna Bricks Industries, Chalita Bari, Teliamura, Tripura(Khowai)
					Tripureswari Small Bricks Industry, Icharbill, Karailong, Teliamura, Tripura(Khowai)
					Ghosh Brick Industry Dwarikapur, Kalyanpur, Teliamura, Tripura(Khowai)
					Diya Brick Industry, Dwarikapur, Kalyanpur, Teliamura, Khowai, Tripura
			Kaibalya Nath Brick Industries Laltilla, Moharcherra, Teliamura, Tripura(Khowai),		
Total				05	
6.	Manu	Along Kailashahar	Brick field	Orange	Sagar Engineering Co-Operative Society Ltd., Durgapur, B.C. Nagar, Kailashahar, Tripura (Unakoti)
					Joy Ram Bricks Industries, Krishnanagar,

Sl. No.	River	Identified River Stretches	Type of Industries	Category	Name & Address of the Industries
					Kumarghat, Unakoti, Tripura, Pin : 799290
					Krishnanagar Bricks Industry, Krishnagar, Kailashahar, Unakoti, Tripura
					Soma Mechanised Bricks Industry, Vill : Nidebi, P.O. Kumarghat, Unakoti, Tripura, Pin : 799264
					Manu Bricks Industries, East Ratacherra, Fatikroy, Unakoti, Tripura
					Ramthakur Bricks Industries, Saidarpar, Kumarghat, Kailashahar, Unakoti, Tripura
					Allied Bricks Industry (Unit – II), Sonaimuri, Kumarghat, Tripura (Unakoti)
					Asha Bricks Construction, P.O. Chantail, Kailashahar, Tripura(Unakoti)
					United Bricks Industry, Chantail, Kailashahar, Unakoti, Tripura
					Soma Bricks Industry, Nidabi, P.O. Kumarghat, Tripura (Unakoti)
			Total		10

**GOVERNMENT OF TRIPURA
DEPTT. OF SCIENCE, TECHNOLOGY & ENVIRONMENT
VIGYAN, PRAJUKTI O PARIVESH BHAWAN
GORKHABASTI: AGARTALA
TRIPURA-799006**

No.F.11(49)/DSTE/CC/Pt-1/ 3382-3414

Dated 09/05/2017

NOTIFICATION

Whereas, Article 48-A of the Constitution of India *inter-alia* envisages that the State shall endeavor to protect and improve the natural environment for safeguarding human beings, wildlife including all living creatures, forests, lake, rivers etc.,

AND

Whereas, the open burning of wastes produces various harmful toxic gases/particles which causes pollution of air, water, soil etc and disturbs the natural balance of ecology & environment,

AND

Whereas, the waste is generated both in the form of biodegradable & non-biodegradable substances, the non-biodegradable waste includes plastic and other substances which release various harmful toxic gases on burning,

AND

Whereas, in accordance with the Judgment pronounced on 22nd December, 2016 by Hon'ble National Green Tribunal, Principal Bench, New Delhi in Original Application No.199 of 2014 in the matter of Almitra H. Patel & Anr. Vrs. Union of India & Others, the state Government shall impose complete prohibition on open burning of waste on lands, including at landfill sites in the whole State,

NOW,

Therefore, in compliance with the Judgment pronounced on 22nd December, 2016 by Hon'ble National Green Tribunal, Principal Bench, New Delhi and in exercise of the powers conferred by section 5 of the Environment (Protection) Act, 1986 (29 of 1986), and also the powers conferred to this State vide Notification No.S.O.479 (E) dated the 25th July,1991 under Section 23 of the Environment (Protection) Act, 1986, the State Government issues this Notification to impose ban/prohibition on open burning of waste on lands, including at landfill sites in the whole State. **In this context, the Government hereby issues the following directions:-**

Directions:-

No person or body including local body, any agency, organization, concessionaire etc. shall be allowed open burning of waste on lands, including at landfill sites in the whole of State of Tripura,

Con.td---P/2

Ch:

Penalty :

For each such incident or default, violators including the project concessionaire, local body, any person or body responsible for such burning, shall be liable to pay environmental compensation of Rs.5,000/- (Rupees Five Thousand) only in case of simple burning, while Rs.25,000/- (Rupees Twenty Five Thousand) in case of bulk wastes burning. Environmental compensation shall be recovered as arrears of land revenue by the competent authority in accordance with law. The environmental compensation collected in this regard shall be deposited to the Tripura State Pollution Control Board for development/up gradation of ecology & Environment of the State.

Authorised Officers:-

The following officers are hereby authorized to implement this Notification in their respective jurisdiction viz.

1. Member Secretary, Tripura State Pollution Control Board (TSPCB) and officers at the level of Junior Environmental Engineer/Junior Scientist and above.
2. Director, Science, Technology & Environment and officers at the level of Scientific Officer and above.
3. Municipal Commissioner, Agartala Municipal Corporation, Agartala and his nominee.
4. Chief Executive Officer, TTAADC and other officers nominated by him.
5. DMs & Collectors, Tripura
6. Superintendent of Police and officers at the level of SI and above.
7. Director, Industries & Commerce and other officer nominated by him.
8. Director, Health & Family Welfare or other officers nominated by him.
9. Commissioner, Taxes & Excise and officers at the level of inspector or above.
10. Sub-Divisional Magistrates, Tripura.
11. Chief Inspector of Factories and Boilers, Factories and Boiler Organization, Labour Department, Govt. of Tripura and his nominee.
12. Chief Executive Officer of Municipal Council and other officers nominated by him.
13. Block Development Officers, Tripura and his nominee.
14. Executive Officers of Nagar Panchayat, Tripura and his nominee.

In case of violation of the aforementioned directions, the above mentioned authorized officers, shall in accordance with the procedure and powers conferred under Section 19 of the Environment (Protection) Act.1986, initiate legal action including the recovery of penalty as indicated above.

This Notification shall come into force with immediate effect.

By the order of the Governor

Chaitanya
(C. Murti)

Spl. Secretary
Government of Tripura

Copy to:-

1. The Principal Secretary to the Governor, Tripura, Agartala.
2. The Principal Secretary to the Chief Minister, Tripura.

Contd....P/3.

3. P.S to the All Ministers, Govt. of Tripura.
4. The PPS to Chief Secretary, Govt. of Tripura.
5. The Director General of Police, Govt. of Tripura, Agartala.
6. P.A/P.S to All Pr. Secretaries/Commissioner /Secretaries/ Special Secretaries, Govt. of Tripura.
7. The Mayor, Agartala Municipal Corporation, Agartala.
8. The Chairman, Tripura State Pollution Control Board.
9. Chief Executive Officer, TTAADC, Tripura.
10. All DM & Collector, Tripura.
11. Municipal Commissioner, Agartala Municipal Corporation, Agt.
12. All Head of Department/Director, Govt. of Tripura.
13. All Sub-Divisional Magistrate, Tripura
14. The Chief Executive Officer, All Municipal Council, Tripura.
15. Chief Inspector of Factories and Boilers, Factories and Boiler Organization, Labour Department, Govt. of Tripura, Agartala.
16. All Block Development Officer, Tripura
17. All Executive Officer, All Nagar Panchayet, Tripura.
18. Sri S. Banik, Scientific Officer, DSTE, Agt. He is requested to publish the same in Departmental Website.
19. The Manager, Government Press for publication of this notification in the next issue of official gazette.

Chaulghe 4/5/12
(C. Murti)
Spl. Secretary
Government of Tripura



TRIPURA STATE POLLUTION CONTROL BOARD
(A Govt. of Tripura Organisation)

No.F.18(40)/TSPCB/2018/ 3089

26/04/2019

To

Sub- Submission of affidavit- reg.

Sir/Madam,

It is to inform you that the Hon'ble National Green Tribunal has passed an Order dated 19/12/2018 in connection with Original Application No.673/2018, for restoration of the six identified polluted river stretches of Tripura.

2. In this context, you are directed to submit a declaration in the form of affidavit regarding disposal of effluent and or extraction of ground water by **10.05.2019** positively failing which the Tripura State Pollution Control Board will take necessary action(s) as per Rules.
3. The tentative declaration format is attached herewith.
4. Please treat the matter as **MOST URGENT**.

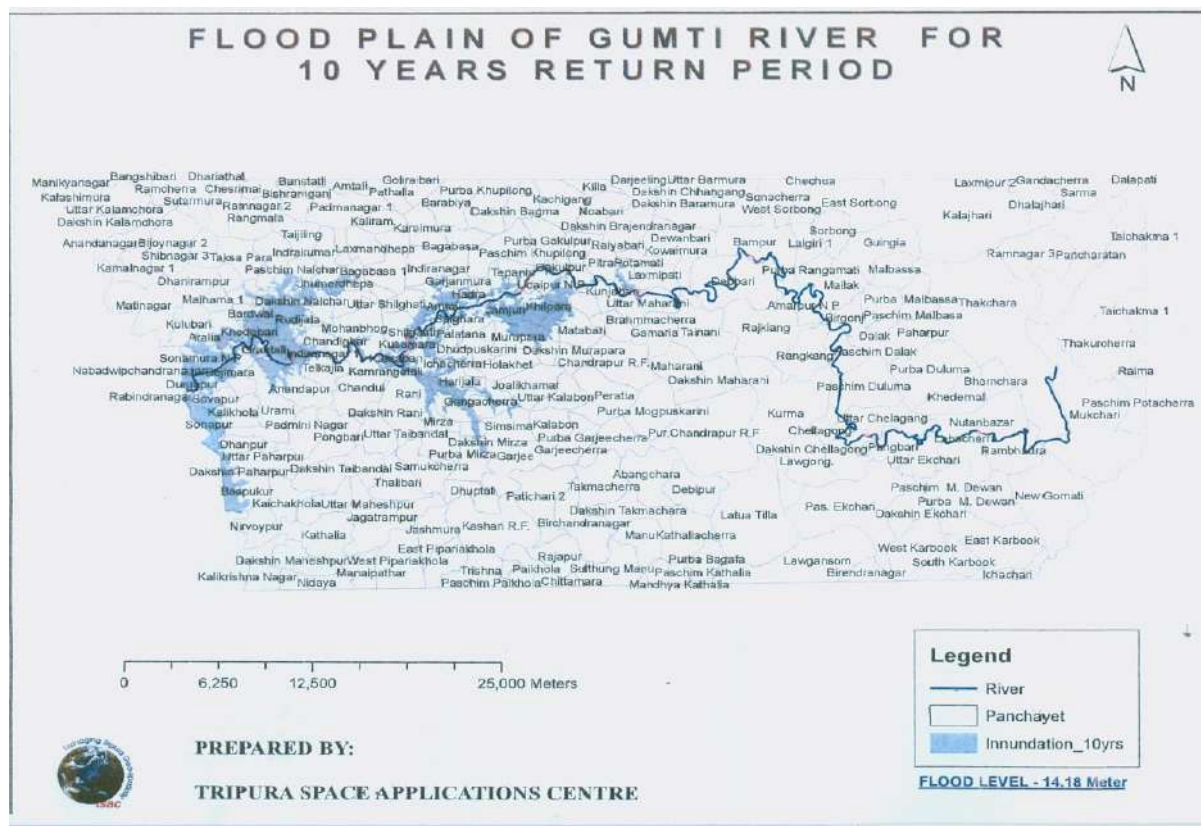
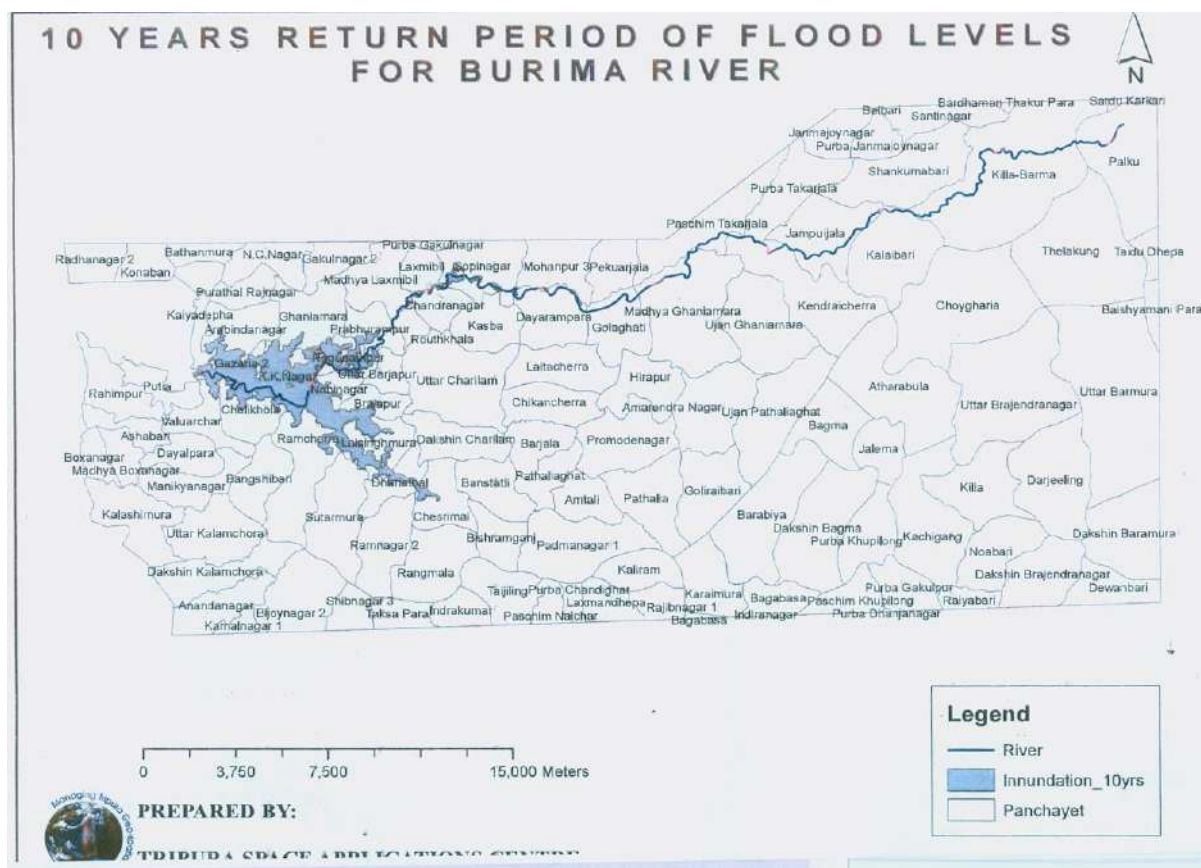
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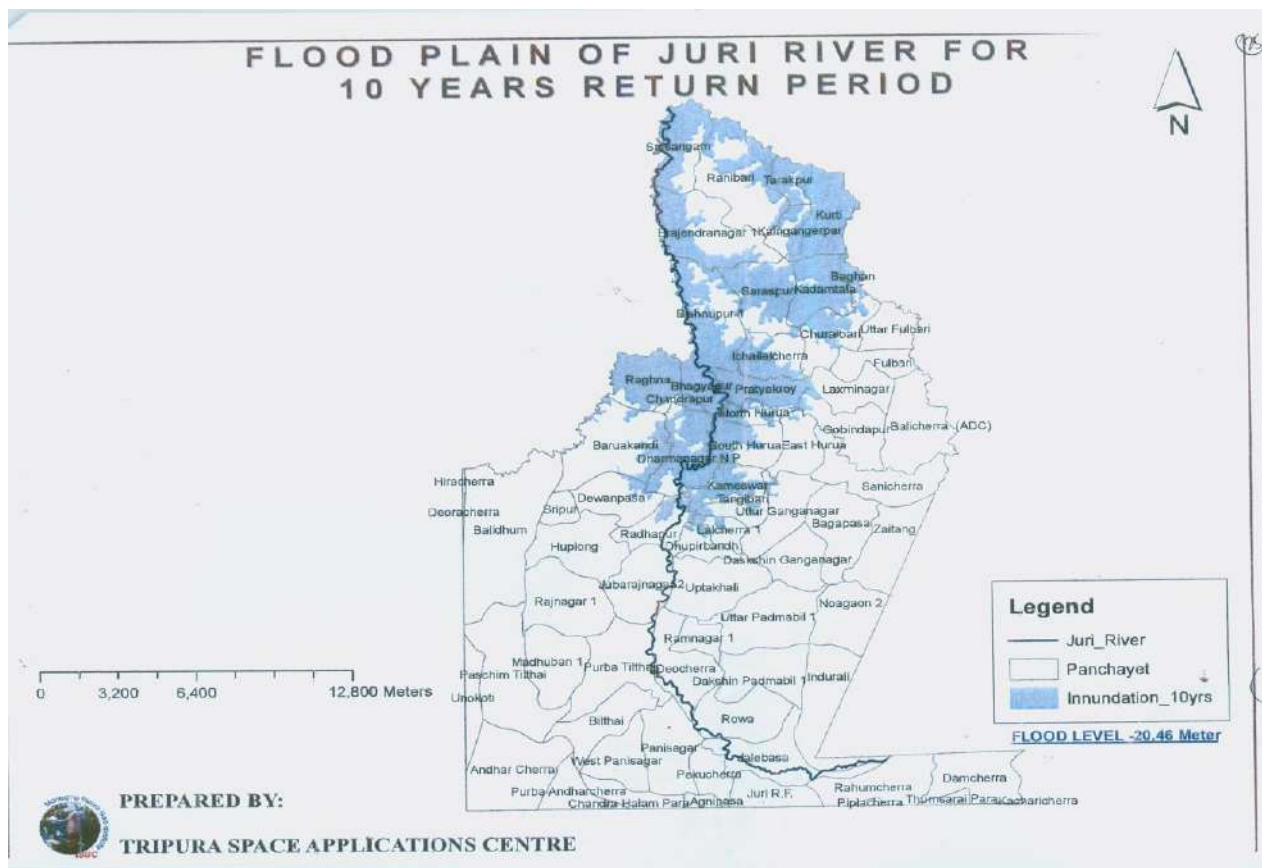
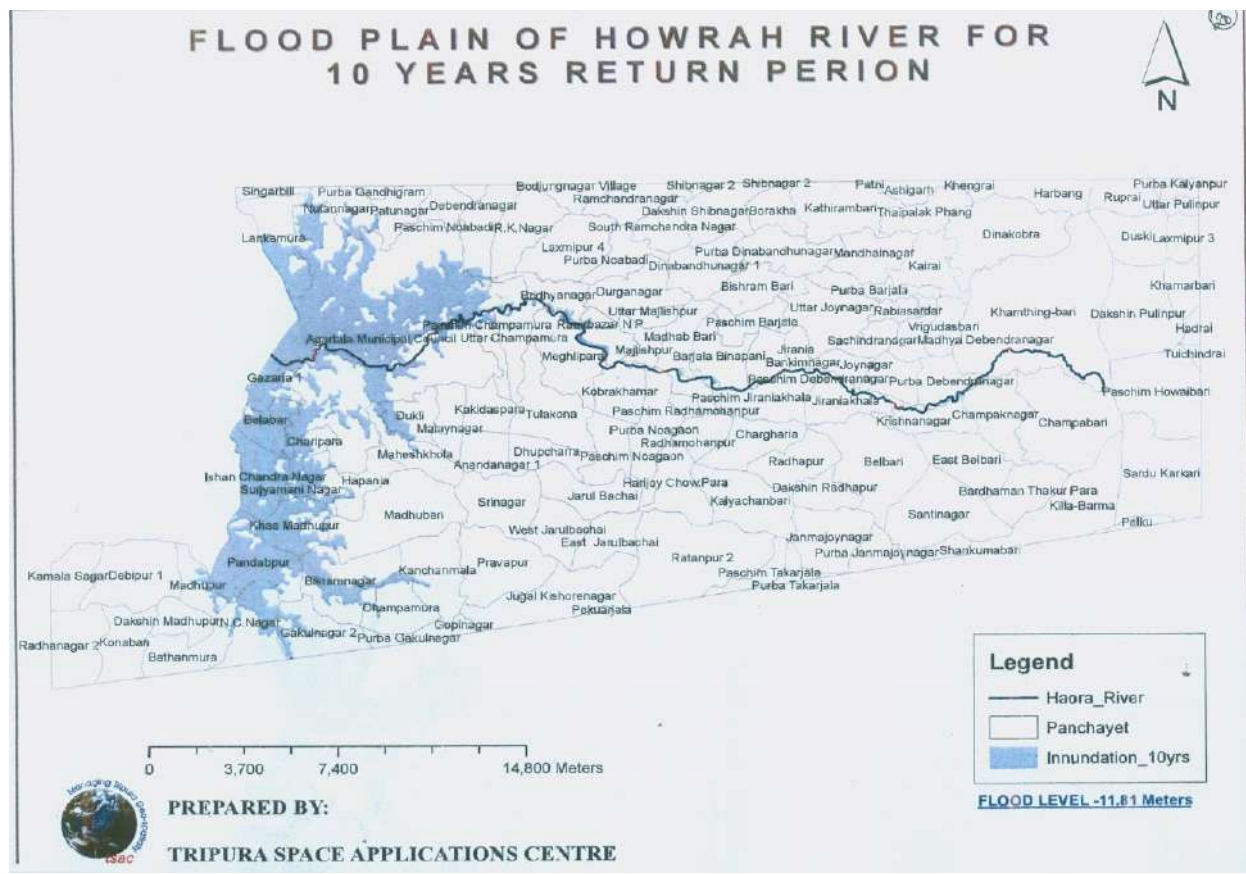
Yours faithfully,

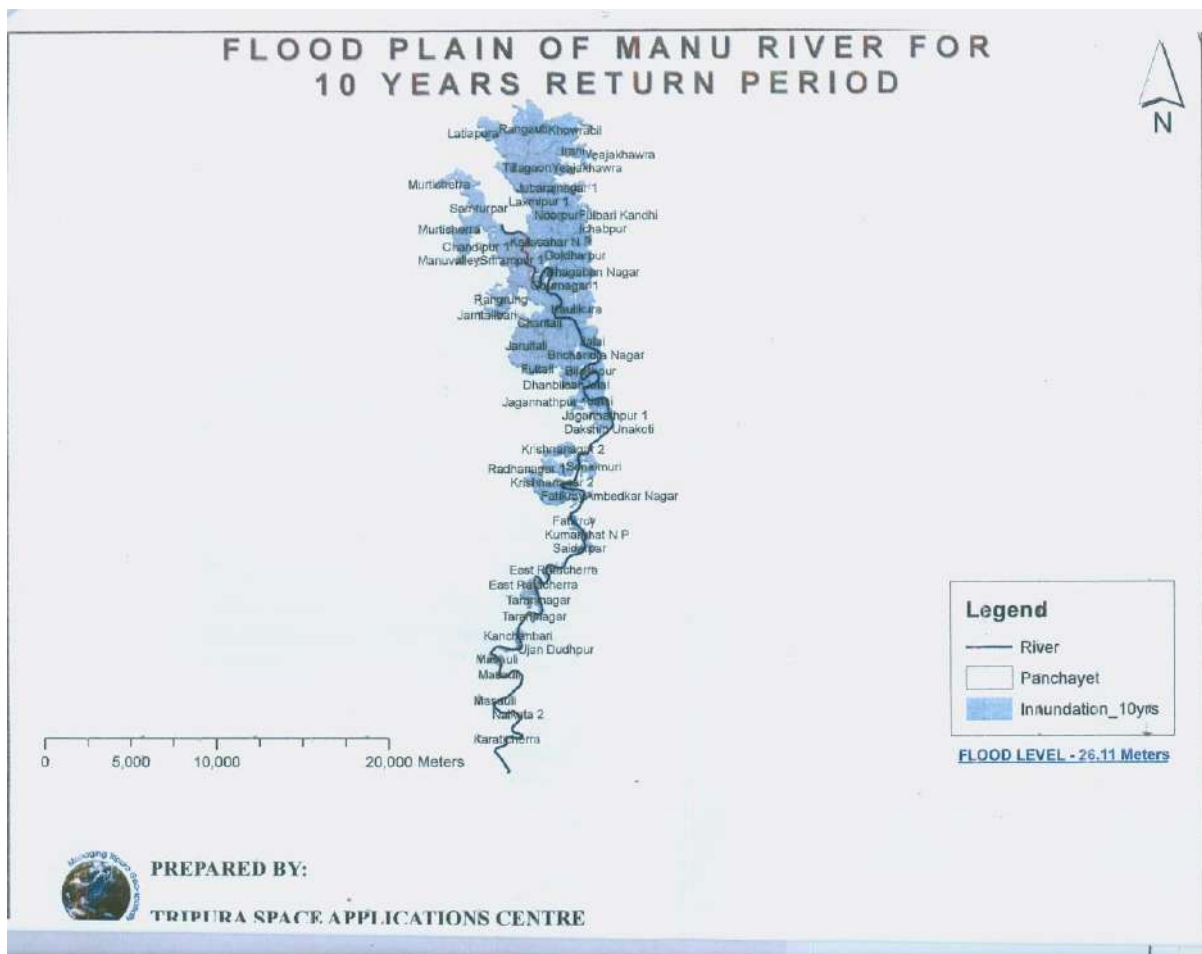
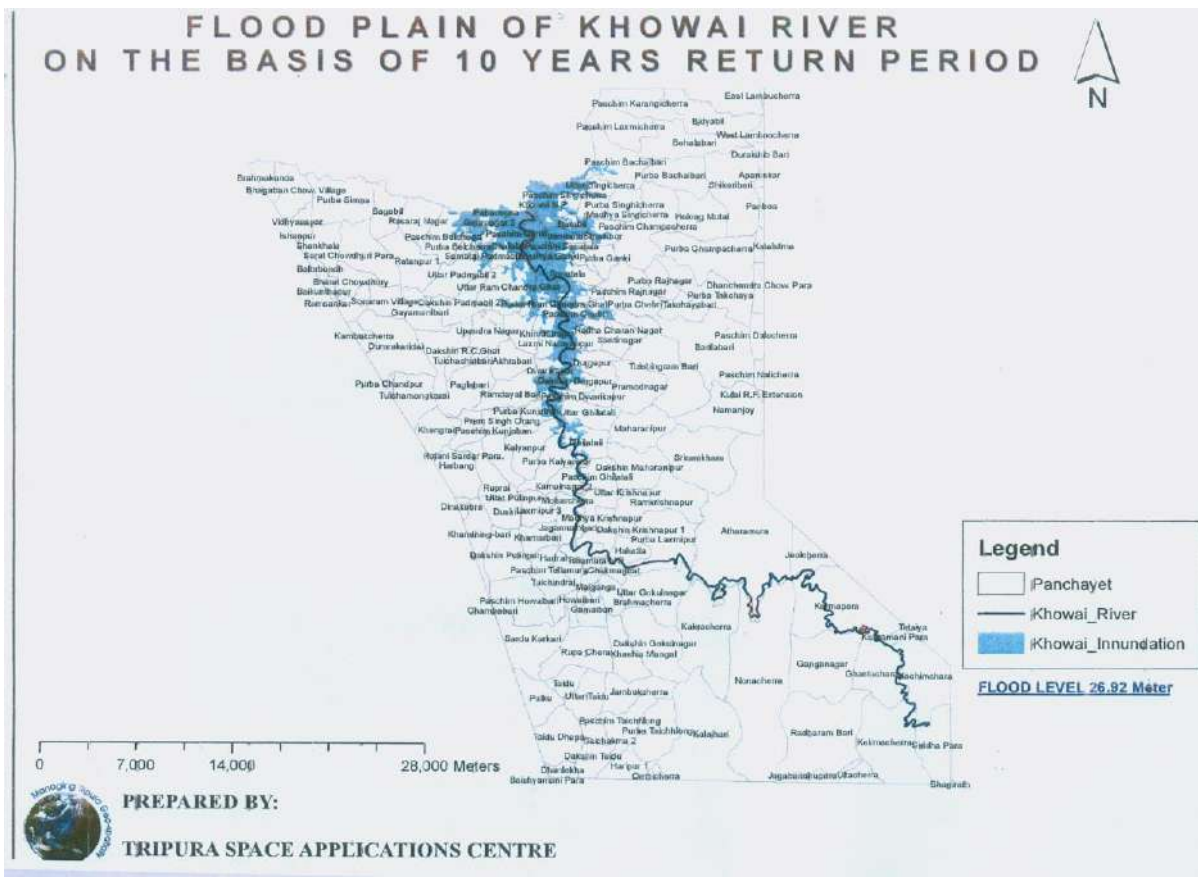

(Manas Mukherjee)
Member Secretary

PARIVESH BHAWAN
Pandit Nehru Complex, Gorkhabasti,
PO : Kunjaban, Agartala,
West Tripura, PIN - 799 006

Phone : (0381) 231 2589 / 232 2455
232 2462 (Chairman), 232 8792 (Member Secretary)
Fax : (0381) 232 5421, 232 2455
e-mail : trippcb@sancharnet.in / hoospcb-tr@gov.in
website : www.tspcb.tripura.gov.in









TRIPURA STATE POLLUTION CONTROL BOARD

(A Govt. of Tripura Organisation)

No.F.19(7)/TSPCB/NGT/2018/ 3102

Date: 30/04/2019

Show Cause Notice

WHEREAS, you applied to the Board and obtained Consent to Establish/ Consent to Operate Certificate for establishing or operating your unit.

AND

WHEREAS, on expiry of the validity of Consent Certificate you did not apply for extension of validity of the same.

AND

WHEREAS, your unit is being run without valid Consent Certificate which is illegal.

NOW

THEREFORE, it is directed to explain why legal action should not be taken against your unit under Section 33 (A) of the Water (Prevention & Control of Pollution) Act, 1974 and Section 31(A) of the Air (Prevention & Control of Pollution) Act, 1981 for non-compliance of the condition of Tripura State Pollution Control Board.

The reply should reach to this office within 15 days from the issuance of notice for taking needful actions from our end.

Manas Mukherjee 300418
(Manas Mukherjee)
Member Secretary

To
All Concerned

PARIVESH BHAWAN
Pandit Nehru Complex, Gorkhabasti,
PO : Kunjaban, Agartala,
West Tripura, PIN - 799 006

Phone : (0381) 231 2589 / 232 2455 / 232 8792
232 2462 (Chairman), 230 7751 (Member Secretary)
Fax : (0381) 232 5421, 232 2455
e-mail : trippcb@sancharnet.in / hoospcb-tr@gov.in
website : www.tspcb.tripura.gov.in



TRIPURA STATE POLLUTION CONTROL BOARD

(A Govt. of Tripura Organisation)

No.F.19(7)/TSPCB/NGT/2018/ 3088

Date: 26/04/2019

Direction

WHEREAS, as per the Order of the Hon'ble National Green Tribunal dated 19.12.2018 in connection with Original Application No.673/2018 an Action Plan has been prepared for restoration of the six identified polluted river stretches of Tripura.

AND

WHEREAS, according to the said Action Plan, small scale/tiny and service providing units located in urban or semi-urban limits like Auto Service Stations etc. should not be allowed to dispose waste water effluents or sludges into drains, thereby ensuring not causing damages to drains or sewers.

AND

WHEREAS, during visit it has been found that your unit is discharging waste water or sludge into drain/sewer.

AND

WHEREAS, releasing effluent or sludge into drains or sewers without any treatment is continuously causing damage to the drains/sewers.

NOW

THEREFORE, in exercise of powers conferred by Section 33(A) of the Water (Prevention & Control of Pollution) Act, 1974, you are directed to set up Effluent Treatment Plant (ETP) and to make it fully operational **within 02.07.2019** and to inform the Board accordingly failing which the Board will issue Closure Order.


 (Manas Mukherjee)
 Member Secretary

To
(All the Auto Service Stations)

PARIVESH BHAWAN
Pandit Nehru Complex, Gorkhabasti,
PO : Kunjaban, Agartala,
West Tripura, PIN - 799 006

Phone : (0381) 231 2589 / 232 2455
232 2462 (Chairman), 232 8792 (Member Secretary)
Fax : (0381) 232 5421, 232 2455
e-mail : trippcb@sancharnet.in / hoospcb-tr@gov.in
website : www.tspcb.tripura.gov.in



TRIPURA STATE POLLUTION CONTROL BOARD
(A Govt. of Tripura Organisation)

No.F.19(7)/TSPCB/NGT/2018/ 3084

Date: 26 / 04 / 2019

Direction

WHEREAS, as per the Order of the Hon'ble National Green Tribunal dated 19.12.2018 in connection with Original Application No.673/2018 an Action Plan has been prepared for restoration of the six identified polluted river stretches of Tripura.

AND

WHEREAS, according to the said Action Plan, no industries should discharge effluent directly into drains without treatment. They have to setup ETP while operating their unit.

AND

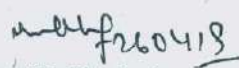
WHEREAS, during visit it has been found that your unit is discharging waste water or sludge into drain/sewer.

AND

WHEREAS, releasing effluent or sludge into drains or sewers without any treatment is continuously causing damage to the drains/sewers.

NOW

THEREFORE, in exercise of powers conferred by Section 33(A) of the Water (Prevention & Control of Pollution) Act, 1974, you are directed to set up Effluent Treatment Plant (ETP) and to make it fully operational **within 02.07.2019** and to inform the Board accordingly failing which the Board will issue Closure Order.


(Manas Mukherjee)
Member Secretary

To
(All the effluent generating units
other than Auto Service Stations)

PARIVESH BHAWAN
Pandit Nehru Complex, Gorkhabasti,
PO : Kunjaban, Agartala
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