Revised

ACTION PLAN

FOR

RESTORATION & CONSERVATION

OF

RAMREKHA RIVER, BIHAR

PRIORITY-V

Approved by

River Rejuvenation Committee

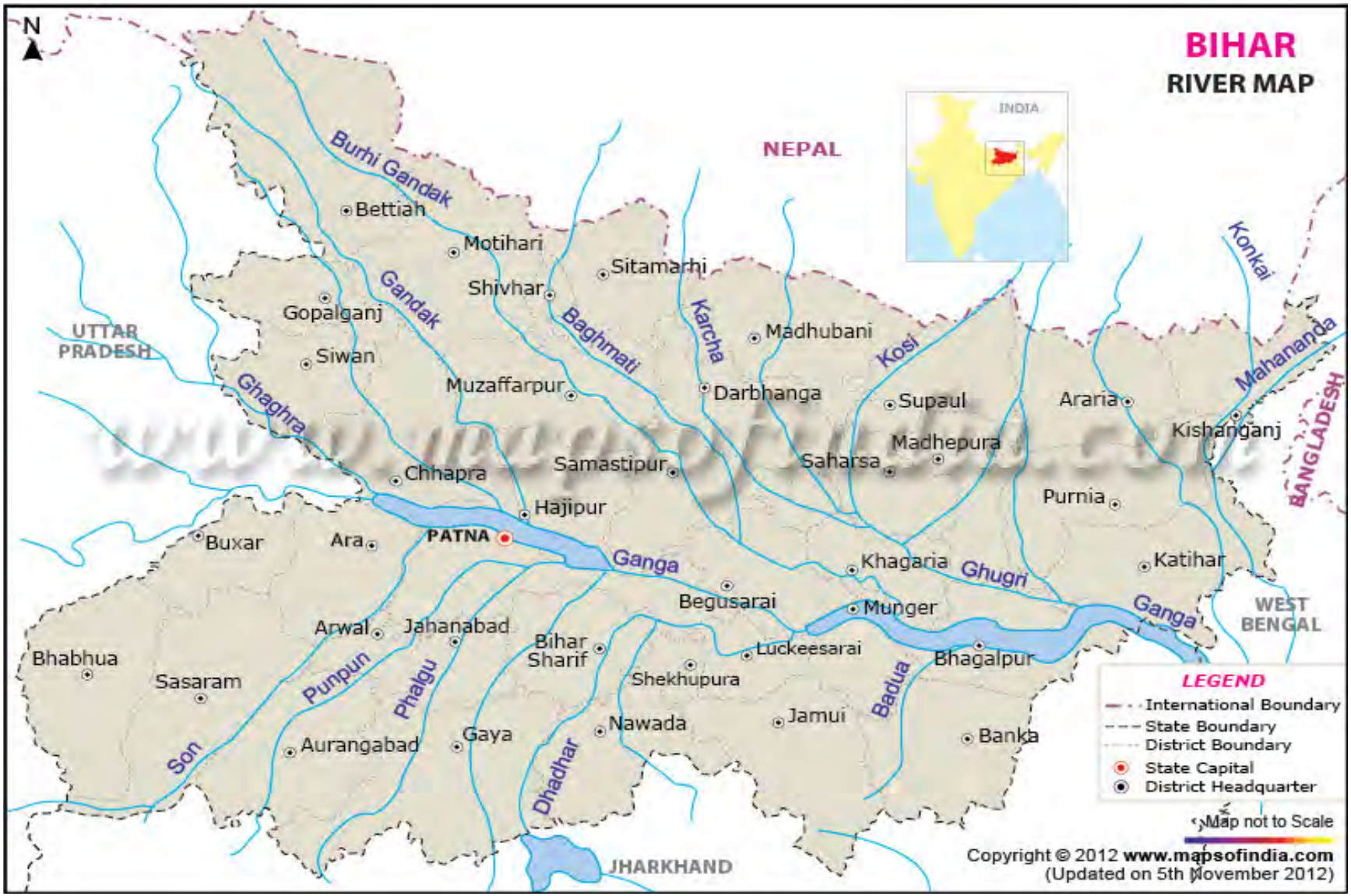
(Constituted in compliance of order of the Hon'ble NGT)

बिहार सरकार

Department of Environment, Forest & Climate Change, Govt. of Bihar

Submitted to:

Central Pollution Control Board, Delhi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(Updated on 5th November 2012)

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Executive Summary

Out of 351 polluted river stretches, in addition with other rivers, Ramrekha river at Ramnagar also has been identified as polluted river stretch under category Priority-V in the State of Bihar.

The Hon'ble NGT in its order dated-20.09.2018 directed all the States to prepare action plan within two months for making all the polluted river stretches fit at least for bathing purposes (i.e. BOD <3mg/L and FC <500 MPN/100ml) within six months from the date of finalization of the action plans.

The Ramrekha originates from hilly area and enters in the plains of West Champaran district at Ramangar (Harinagar) and joins Sikrahana just down-stream to Lauria. It is a very small river.

It does not recieve any industrial discharge.Howerver, it receives domestic waste water/sewage from 05 significant drains at Harinagar, a sub-divisional town having population of 48411 as per 2011 India census.

Bihar State Pollution Control Board is regularly monitoring the water quality of Ramnagar River at 02 locations under National Water Quality Monitoring Program (NWMP) on monthly basis.

The water quality report of Ramrekha river indicates low DO and high BOD (Max. 12 mg/L) and FC more than 500 MPN/100ml. The low oxygen balance and high value of BOD in the Ramrekha River reflects the waste discharge in the system and intensity of the bio-degredable matter present in the water body.The presence of higher bacteriological population of TC & FC also confirms the discharge of sewage/domestic waste water in this river.

Bihar State Pollution Control Board has identified 02 Grossly Polluting Industries in the Ramrekha river basin in Bihar. The major operational industries located on the banks of the River Ramrekha in Bihar stretch are M/s Harinagar Sugar Mills Ltd., Harinagar, Dist.-West Champaran & M/s Harinagar Sugar Mills Ltd., (Distillery Division) Harinagar, Dist.-West Champaran. There is no discharge from aforesaid units into the Ramrekha river.

Presently, there is no sewerage network & STP for sewage management at Ramnagar Nagar Panchayat area. Ground water quality has been assessed under safe category. Ramnagar Nagar Panchayat has been declared open defecation free (ODF). There is no control structure on Ramrekha River and as such maintenance of E-flow is not applicable. Action plan has been formulated in accordance with the order of the Hon'ble NGT dated-20.09.2018.

1. BACKGROUND

Water is one of the most essential requisites that nature has provided to sustain life on earth. Without water there would be no life. Population growth, rapid development and indiscriminate and excessive use of water have resulted in great depletion and deterioration of water resources. Water bodies are being polluted by discharge of sewages, industrial effluents and run-off water of the catchment area. Therefore, it is a clarion call to take necessary initiatives to maintain & restore the sanctity of water bodies.

The Hon'ble NGT, Principal Bench, New Delhi registered application no. 673/2018 on the basis of news item dated-17.09.2018 authored by Sri Jacob Koshy titled in "The Hindu" under the heading **"More river stretches are now critically polluted: CPCB"**.According to news item CPCB identified a total of 302 polluted river stretches in the country during 2015 which have since increased to 351. The polluted river stretches have been divided into five priority categories i.e. I, II, III, IV& V.

Priority I	BOD greater than or equal to 30 mg/L
Priority II	BOD between 20-30 mg/L
Priority III	BOD between 10-20 mg/L
Priority IV	BOD between 06-10 mg/L
Priority V	BOD between 03-06 mg/L

Out of 351 polluted river stretches, in addition with other rivers, Ramrekha River at Ramnagar (West Champaran) also has been identified as polluted river stretch under category Priority-V in the State of Bihar.

2. ACHIEVABLE TARGETS AS PER THE HON'BLE NGT DIRECTIONS:

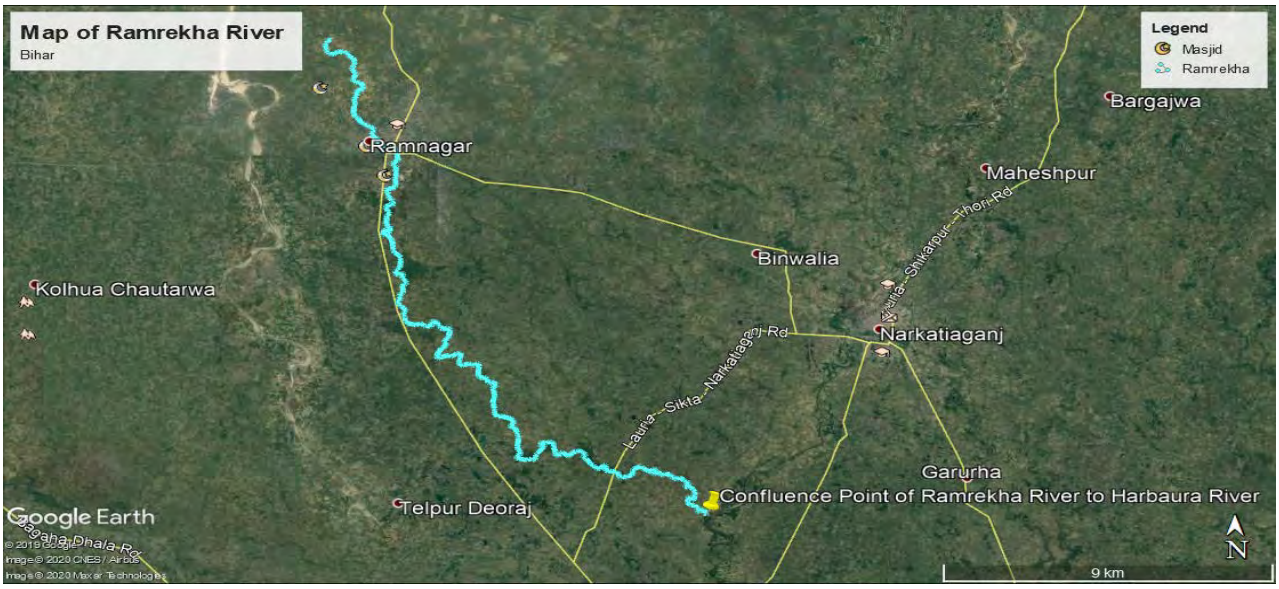
The Hon'ble NGT in its order dated-20.09.2018 directed all the States to prepare action plan within two months for making all the polluted river stretches fit at least for bathing purposes (i.e. BOD <3mg/L and FC <500 MPN/100ml) within six months from the date of finalization of the action plans.

In compliance of the order, a River Rejuvenation Committee (RRC) has been constituted by the Department of Environment, Forest & Climate Change, Govt. of Bihar vide notification no. 1412(E), dated-31.12.2018 **(Annexure -1)** which includes Director, Ecology & Environment, Department of Environment, Forest & Climate Change, Govt. of Bihar; Special Secretary, Urban Development & Housing Department, Govt. of Bihar; Director Industries, Department of Industry, Govt. of Bihar & Member Secretary, Bihar State Pollution Control Board, Patna as members.

3.RAMREKHA RIVER:

The Ramrekha originates from hilly area and enters in the plains of West Champaran district at Ramangar (Harinagar) and joins Sikrahana just down-stream to Lauria. It is a very small river.

It does not recieve any industrial discharge. However, it receives domestic waste water/sewage from 05 significant drains at Harinagar, a sub-divisional town having population of 48411 as per 2011 India census.



4.WATER QUALITY MONITORING NETWORK IN RAMREKHA RIVER

Bihar State Pollution Control Board is regularly monitoring the water quality of Ramrekha River at 02 locations under National Water Quality Monitoring Program (NWMP) on monthly basis. The details of the monitoring stations are shown below:-

Sampling location and Station code	Latitute/ Longitute	Frequency of Sampling	Remarks
Ramrekha river at upstream of Harinagar, West Champaran **Station code:3130**	27.161510 84.331490	Monthly	U/S of Harinagar (ULBs: Nagar Parishad)
Ramrekha river at downstream of Harinagar, West Champaran **Station code:2559**	27.145104 84.328428	Monthly	D/S of Harinagar (ULBs: Nagar Parishad)

5.WATER QUALITY REPORT OF RAMREKHA RIVER:

Location: U/S at Harinagar (Before Sugar Mill), West Champaran during Year (2013-2014 to 2018-19)

Year		pH	D.O. mg/L	B.O.D. mg/L	T.C. MPN/100mL	F.C. MPN/100mL
2013-14	Minimum	7.09	5.5	2.0	1100	500
	Maximum	7.92	8.0	3.7	2200	900
	Average	7.51	7.2	2.4	1383	600
2014-15	Minimum	6.89	0.5	2.4	1300	500
	Maximum	7.75	5.7	12.0	9000	2400
	Average	7.33	3.8	5.8	3800	1438
2015-16	Minimum	7.09	5.9	2.0	2200	700
	Maximum	8.18	8.4	3.6	3000	1100
	Average	7.53	7.35	2.35	2475	850
2016-17	Minimum	7.09	6.9	1.8	3000	1100
	Maximum	7.94	8.0	2.8	4700	2600
	Average	7.43	7.5	2.5	3666	1833
2017-18	Minimum	6.58	3.6	1.9	3100	1700
	Maximum	7.68	8.0	5.0	7000	3300
	Average	7.14	6.1	2.9	4455	2266
2018-19	Minimum	6.67	1.5	2.6	6300	2600
	Maximum	7.73	6.0	8.4	9300	6800
	Average	7.10	4.76	3.46	7122	3666

U/S Ramrekha River Hari Nagar							
Month	Date	pH	D.O mg/L	B.O.D mg/L	C.O.D mg/L	T.C MPN/ 100 ml	F.C MPN/100 ml
April	25.4.19	6.75	Nil	4.3	40	13000	7900
May	28.5.19	7.27	4.9	4.6	28	9300	6800
June	25.6.19	6.95	2.8	4.8	44	35000	1700
July	-	-	-	-	-	-	-
Aug.	20.8.19	7.41	4.4	2.8	28	35000	11000
Sept.	17.9.19	7.53	6.0	2.0	16	160000	21000
Oct,	20.10.19	7.54	5.6	1.6	16	28000	14000
Nov.	20.11.19	7.2	3.8	5.3	30.0	35000	11000
Dec.	28.12.19	7.6	5.8	2.3	24.0	24000	13000

Location: D/S at Harinagar (After Sugar Mill), West Champaran during Year (2013-2014 to 2018-19)

Year		pH	D.O. mg/L	B.O.D. mg/L	T.C. MPN/100mL	F.C. MPN/100mL
2013-14	Minimum	6.80	0.0	2.7	5000	1300
	Maximum	8.12	7.3	12	24000	5000
	Average	7.34	4.15	6.0	10666	3100
2014-15	Minimum	6.51	0.0	2.9	9200	3000
	Maximum	7.46	6.7	10.0	24000	9000
	Average	6.85	2.8	7.6	16240	5180
2015-16	Minimum	6.88	2.0	2.5	5000	1700
	Maximum	8.43	7.5	6.4	16000	5000
	Average	7.57	6.28	3.1	9250	3025
2016-17	Minimum	6.9	6.4	2.0	3000	900
	Maximum	7.85	7.6	2.8	5000	2300
	Average	7.40	7.05	2.6	4216	1866
2017-18	Minimum	6.59	3.0	2.7	3400	1700
	Maximum	7.78	7.3	5.0	11000	4000
	Average	7.08	5.6	3.3	5500	2522
2018-19	Minimum	6.09	0.0	2.9	7000	3100
	Maximum	7.71	5.0	12.0	14000	12000
	Average	6.85	3.63	4.26	10333	5677

D/S Ramrekha River Hari Nagar							
Month	Date	pH	D.O mg/L	B.O.D mg/L	C.O.D mg/L	T.C MPN/ 100 ml	F.C MPN/100 ml
April	25.4.19	6.79	Nil	9.0	68	23000	13000
May	28.5.19	7.04	4.6	5.0	36	28000	14000
June	25.6.19	6.23	2.1	4.4	44	33000	1400
July	-	-	-	-	-	-	-
Aug.	20.8.19	7.43	4.4	2.9	32	43000	14000
Sept.	17.9.19	7.60	5.4	2.7	24	160000	22000
Oct,	20.10.19	7.3	5.4	2.0	24	35000	17000
Nov.	20.11.19	7.03	3.0	5.6	32.0	35000	17000
Dec.	28.12.19	7.24	5.6	2.6	32.0	35000	21000

6.PRIMARY WATER QUALITY CRITERIA FOR VARIOUS USES:

Quality Class (Use Class)	Designated best use	Parameter			
		pH	Dissolved Oxygen (D.O.) mg/L Min.	Bio-Chemical Oxygen Demand (B.O.D.) mg/L Max.	Total Coliform MPN/100ml Max.
A	Drinking water source without conventional treatment but after disinfections	6.5-8.5	6	2	50
B	Outdoor bathing organized	6.5-8.5	5	3	500
C	Drinking water source with conventional (treatment followed by disinfections)	6.0-9.0	4	3	5000
D	Propagation of Wild life, fisheries	6.5-8.5	4	-	-
E	Irrigation, Industrial Cooling, Controlled Waste Disposal	6.5-8.5	-	-	-

Primary Water Quality Criteria for bathing

pH	6.5 to 8.5
Dissolved Oxygen (DO)	5 mg/L or more
Biochemical Oxygen Demand (BOD)	3 mg/L or less
Fecal Coliform	2500 MPN/100mL

7. STATUS OF WATER QUALITY OF RAMREKHA RIVER:

The Dissolved Oxygen (DO) is the amount of the oxygen present in the water in the dissolved form. It is one of the most important parameters for assessment of water quality/health of the river/surface water. Its presence is essential for survival of aquatic life. Low oxygen content or nil in water can be detrimental to fishes and many other organisms present in the aquatic system. The BOD measures the oxygen consumed by microorganisms in the oxidation of organic matter under specified conditions.

The water quality report of Ramrekha river indicates low DO and high BOD (Max. 12 mg/L) and FC more than 500 MPN/100ml. The low oxygen

balance and high value of BOD in the Ramrekha River reflects the waste discharge in the system and intensity of the bio-degredable matter present in the water body. The presence of higher bacteriological population of TC & FC also confirms the discharge of sewage/domestic waste water into this river.

8. INDUSTRIAL POLLUTION ALONG THE RAMREKHA RIVER:

Bihar State Pollution Control Board has identified 02 Grossly Polluting Industries in the Ramrekha river in Bihar. The major operational industries located on the banks of the River Ramrekha in Bihar stretch are M/s Harinagar Sugar Mills Ltd., Harinagar, Dist.- West Champaran & M/s Harinagar Sugar Mills Ltd., (Distillery Division) Harinagar, Dist.-West Champaran. There is no discharge from aforesaid units into the Ramrekha river.

ETPs have been installed in all operating industries. Online Continuous Effluent Monitoring System has also been installed. Regular inspection is being carried on to ensure the compliances.

9. IDENTIFICATION FOR TOWNS IN CATCHMENT OF RAMREKHA RIVER:

Harinagar/Ramnagar a sub-divisional town of West Champaran District in Bihar. Total geographical area of Ramnagar Nagar Panchayat is 16.2 km^2 with 9123 households and population of 48411 as per census 2011. Population density of the city is 2988 persons per km^2. There are 23 wards in the city, among them ward no.–20 is the most populous ward with population of 4220 and ward no.-17 is the least populous ward with population of 925. The source of water supply is ground water.

There is no other rural area in catchment of Ramrekha River. Its travels through rural area and finally joins Burhi Gandak (Sikrahna River).

10. IDENTIFICATION OF SOURCES OF POLLUTION:

Major sources of pollution of Ramrekha river are:-

i. Discharge of sewage/domestic waste water from the drains in Ramnagar /Harinagar.
ii. Improper disposal of solid waste into the river through municipal drains.

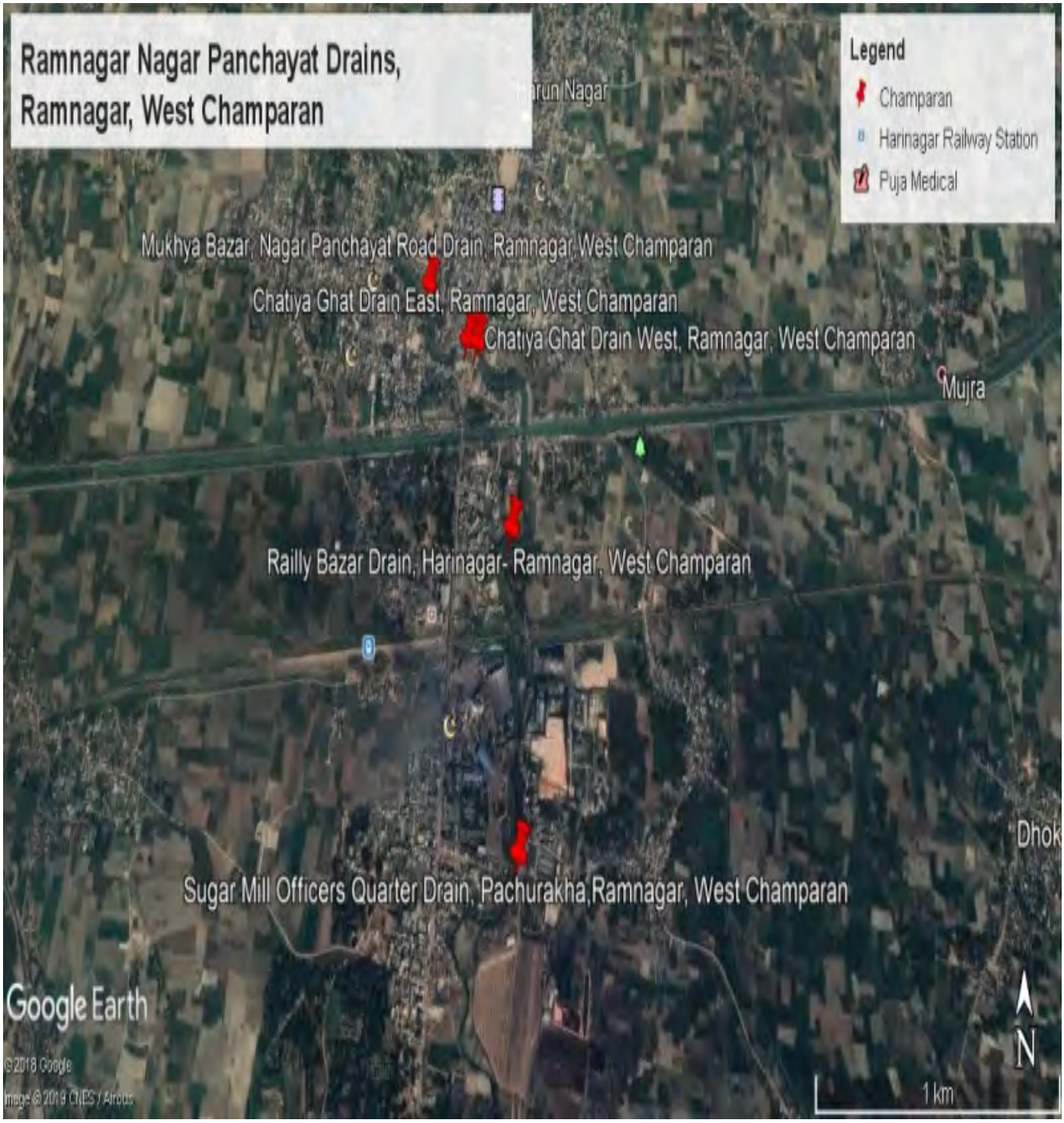
11.ESTIMATION OF QUANTITY OF SEWAGE/DOMESTIC WASTEWATER GENERATIONAND EXISTING SEWAGE TREATMENT FACILITY

The population of Ramnagar/Harinagar rural area as per previous census of India and projected population with average growth rate and estimated sewage/domestic waste water generation are hereunder:-

Population as per census 2001	Population as per census 2011	Projected Population in 2021	Projected Population in 2031	Total waste consumption (@ 135 LPCD) in MLD	Estimated sewage/ domestic waste water generation (80% of water consumption) In MLD	Existing STP
36308 (apporx.)	48,411	60,513	75,642	10.21MLD	8 MLD	No STP

Presently, there is no sewerage network & STP for sewage management at Ramnagar Nagar Parisad area. There are five (5) drains (atNagar Panchyat Road, near DhangalToli, at Kathawa Pull, at Railly Bazar and near Mill Quarter) in Ramnagarblock through which domestic waste water is discharge to Ramrekha River. The total sewage/waste water discharges through aforesaid drains have been assessed to 27.88 MLD. The details of the drains are hereunder:-

Sl. No.	Name of drain	Average flow (MLD)	Recipient	Sewage/waste water Quality
1.	Mukhya Bazar, Near Fish Market, Nagar Panchyat Road,	10.743	Ramrekha River	pH: 6.08 BOD: 115 mg/L COD: 372 mg/L TSS: 54 mg/L
2.	ChatiyaGhat Drain West, DhangalToli,	11.721	Ramrekha River	pH: 6.34 BOD: 135 mg/L COD: 520 mg/L TSS: 60 mg/L
3.	ChatiyaGhat Drain East, Kathawa Pull,	1.065	Ramrekha River	pH: 6.69 BOD: 42 mg/L COD: 160 mg/L TSS: 116 mg/L
4.	Railly Bazar Drain,	0.892	Ramrekha River	pH: 5.63 BOD: 28 mg/L COD: 108 mg/L TSS: 22 mg/L
5.	Mill Quarter Drain, Pachurkha	3.464	Ramrekha River	pH: 6.81 BOD: 24 mg/L COD: 108 mg/L TSS: 46 mg/L
Total		**27.885**		



Reports of individual drains are enclosed as **Annexure-2.**

12. COMMON EFFLUENT TREATMENT PLANTs (CETP):

The State is contemplating to have CETPs for the industrial areas: Fatuha (02 MLD) in Patna; Barari (01 MLD) in Bhagalpur; Hajipur (06 MLD) in Vaishali and Bela (05 MLD) in Muzaffarpur. Environmental Clearance (EC) has been accorded by SEIAA for aforesaid proposed CETPs in Bihar. Industries Department has been requested to expedite early setting up of aforesaid CETPs in Bihar.

There is no Industrial Cluster/Area/Estate in the polluted river stretches other than that on Ganges, hence no requirement for setting up of CETP in the area.

13. GROUND WATER STATUS IN CATCHMENT AREA OF RAMREKHA RIVER IN BIHAR:

Central Ground Water Board (Ministry of Water Resources River Development & Ganga Rejuvenation, GoI) carries out periodic assessment of ground water resources of the State of Bihar in consultation with Minor Irrigation Department, GoB. Last assessment was carried out for the year 2017 and publication of the report is awaited. As per report published in 2014 (as on 31.03.2011) and 2017 (as on 31.03.2013) there was no over exploited and critical zone/block in the State of Bihar but as per latest report (31.03.2017) the total no. of blocks under semi critical, critical and over expolited have been observed 72, 18 and 12 respectively. The details are hereunder:-

Particulars	**As on 31.03.2011**	**As on 31.03.2013**	**As on 31.03.2017**
No. of assessment blocks/ units	533	534	535
Category			
1. Safe	522	519	433
2. Semi critical	11	08	72
3. Critical	Nil	Nil	18
4. Over exploited	Nil	Nil	12

All 18 assessment blocks/units including Ramnagar/Harinagar of West Champaran district having 01 polluted river stretch (Ramrekha River at Ramnagar/Harinagar) were observed in safe category.

Ground water quality also has been assessed by Public Health Engineering Department, Govt. of Bihar at different locations in Ramnagar ULB. The ground water quality has been observed complying with the drinking water standards (**Annexure-3**).

CGWB scrutinizes the applications for permission for withdrawal of ground water to industries in Bihar as per norms and guidelines of CGWA and forwards to CGWA, New Delhi with recommendation for according NOC.

14. GROUND WATER RECHARGING/RAIN WATER HARVESTING

Government of Bihar has initiated drives for recharging of ground water by providing roof top rain water hervesting structures and construction of soak pits/recharge pits near public well, hand pump, tubewell and other water bodies under Jal-Jeevan-Hariyali Abhiyan.

Bihar Govt. has also notified The Bihar Ground Water (Regulation & Control of Development & Management) Act, 2006 for regulating and management of ground water. The authority may impose stipulated conditions for providing roof top rain water harvesting structures in the building plan in an area of the 1000 Sqm or more while according approval for construction.

15. CROP DIVERSIFICATION & DRIPIRRIGATION:

Crop diversification is one of the means to minimize the risk due to climate change. It is also adopted for avoiding or minimizing the adverse effects of current system of crop specialization and mono culture for better use of resources, recycling of nutrients and regaining soil fertility. It also provides better economic variability with value added products and improvement of ecology. Changing climatic conditions like erratic and scanty rainfall, depletion of water resources, decline in net sown area and existing cropping pattern are becoming less productive. Cultivators are moving towards crop intensification through mixed cropping and by including high value crops.

Department of Agriculture Bihar is promoting cultivation of pulses and coarse cereals under National Food Security Mission and oil seeds under National Mission on oil seeds and palms, as these crops need less water. Crop diversification program is also being implemented in Bihar to diversify the cropping pattern from water guzzling paddy to pulses, oil seeds, maize and agro forestry with the objective of tackling the problem of declining soil fertility and depleting water table in the State. To reduce utilization of water in paddy, water conservation technique like direct seeded rice, system of rice intensification, alternate wetting and drying method, laser and labeling, adoption of short duration and drought tolerant verities, etc are promoted through various crop development programs.

In order to enhance water use efficiency in water intensive crop, assistance is given for promotion of water saving tools/ technologies like sprinkler and drip irrigation, creation of farm ponds, efficient delivery and

distribution system and adoption of agronomic practices like alternate row/ furrow irrigation, mulching, etc. Pradhan Mantri Krishi Sinchai Yojana also focuses on creating protective irrigation by harnessing rain water at micro level through 'Jal Sanchay' and 'Jal Sinchan' to ensure 'Per Drop More Crop'. The state is implementing Pradhan Mantri Krishi Sinchai Yojana (Per Drop More Crop) for development of Micro Irrigation in Bihar during the year 2018-19 with the cost of Rs 133.00 Crore by providing 90% subsidy to all categories of Farmers under Drip Irrigation and 75% Subsidy to all categories of farmers under Sprinkler Irrigation. State Govt. is also implementing community Tube well Scheme for benefit of small and marginal farmers with 100 % subsidy to provide water source for installation of Drip Irrigation System under the State Plan. As Horticultural and Commercial crops like Sugarcane require heavy water during summer season, Drip Irrigation is highly beneficial because about 60% of conventional Irrigation water is saved under this system. The productivity of the crops under this system increases by about 25-30 % while cost of production decreases 30-35% in comparison to Conventional Irrigation System.

16. FORESTRY & PLANTATION ACTIVITIES ALONG RAMREKHA RIVER:

The Department of Environment, Forest and Climate Change, Government of Bihar has been carrying out various plantation activities both inside the notified forest areas as well as in the agricultural fields outside the forest areas in the Ganga River Basin, with special emphasis on agroforestry.

Increasing Tree Cover: The target for raising plantations both inside the forest area and as well as outside the forest areas in the agricultural fields is guided by the Bihar Krishi Road Map (Bihar Agriculture Road Map) Phase-II for the period 2017-18 to 2021-22. Phase-I of the Bihar Agriculture Road Map had a target of taking the total tree cover (both inside and outside the forest area) from 12.11% in 2012 to 15% by 2017. The Bihar state has successfully achieved the total tree cover target of 15% for the Phase-I of Bihar Agriculture Road Map. For the Phase-II of Bihar Agriculture Road Map for the period 2017-18 to 2021-22 a target of 17% total tree cover has to be achieved by 2022.

As part of this drive to achieve 17% of green cover in the state, the areas falling along the river like Ramrekha (Ramnagar, West Champaran)and entire stretch of Ganga Basin in Bihar shall be given preference in taking up plantation activities; soil and moisture conservation efforts in the catchment areas (Forest areas) and plantations in the agricultural fields in the form of

agro-forestry. The target for the Plantation activities under the Agricultural Road Map, Phase-II, 2017-18 to 2021-22 for the state of Bihar is given in the **Annexure-4.**

The Ramrekha river in Wast Champaran district forms part of the Burhi Gandak river, which is a tributary of river Ganga. Agro-forestry is actively encouraged with financial incentives for growing trees through different plantation activities under various schemes of Forest Department including the Namame Gange–Forestry Intervention for Ganga scheme.

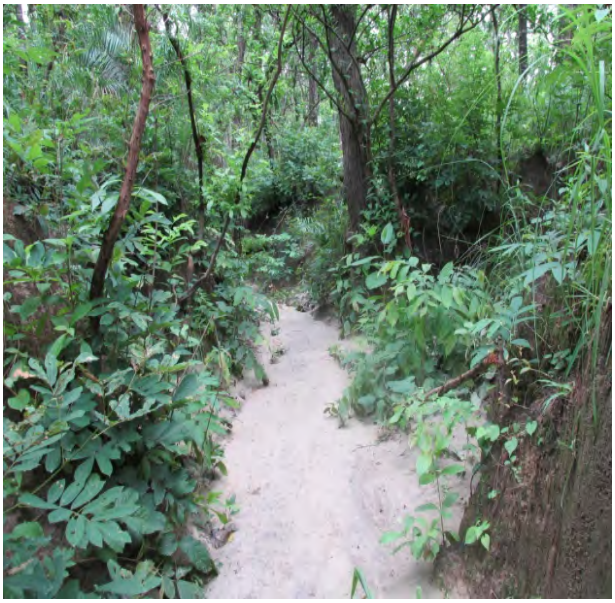
The Department of Environment, Forest and Climate Change, Government of Bihar has been striving to achieve the target for tree cover as given under the Bihar Agriculture Road Map: Phase–I: 2017-18 – 2021-22 with the available resources. There will emphasis to achieve the target of tree cover outside the forest areas through agroforestry on a massive scale. The catchments area, agricultural lands falling on either side of the Ramrekha River in addition with other tributaries of Ganga will form part of this plantation drive by the department.

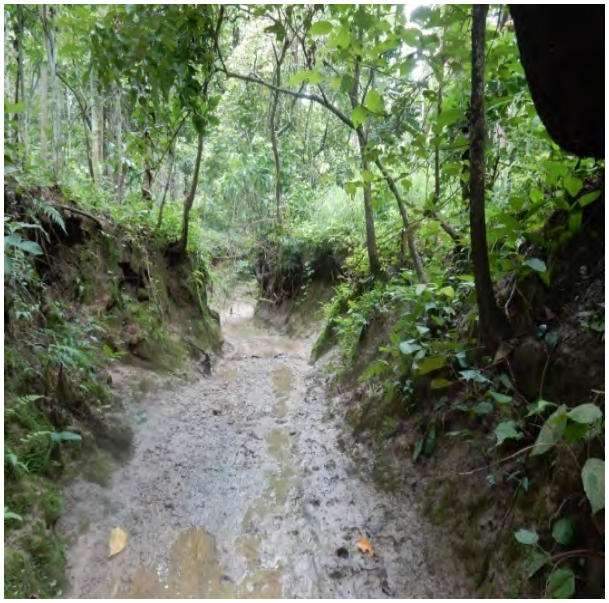
The forests of Valmiki Tiger Reserve in West Champaran district is the catchment for Ramrekha and forms part of the catchment for Shikrahna river. The Sirisia river in Raxaul in East Champaran district originates from Nepal. These rivers forms part of the Burhi Gandak river, which is a tributary of river Ganga. Parmar river in Jogbani (Araria), Punpun river in Fatuah (Patna) are also drain into the river Ganga. The Forest Depart has been playing an active role in the conservation of these rivers and river banks from soil erosion and degradation due to various factors by taking up soil and moisture conservation activities in the catchment area viz., forests of Valmiki Tiger Reserve along with plantation activities. In the agricultural fields outside the forest area agro-forestry is actively encouraged with financial incentives for growing trees through different plantation activities under various schemes including the Namame Gange – Forestry Intervention for Ganga scheme.

Soil and Moisture Conservation works in Catchment Areas of Valmiki Tiger Reserve: Valmiki Tiger Reserve forms the eastern most limit of the Himalayan Terai forests in India. The landscape encompasses foothill ranges of Himalayan Siwaliks with mosaic of cliffs, ridges, gorges, hills, streams and valleys. Situated in Gangetic plains bio-geographic zone of the country, the forest has combination of bhabhar and terai tracks. Criss-crossing and meandering rivers, streams and rivulets feature on these lands. The streams while roaring in monsoon are mostly dry in summer. In order to reduce run-off and conserve moisture for the lean seasons, Forest Department came up with scheme of Soil and Moisture Conservation works on a large scale in 2012-13. Ever since, works have been carried out in

12,869 Ha of forest land with remarkable results downstream. Not only erstwhile dry nalas have water all year round, this has contributed to augmenting the flow in rivers for which these forests serve as Catchment areas

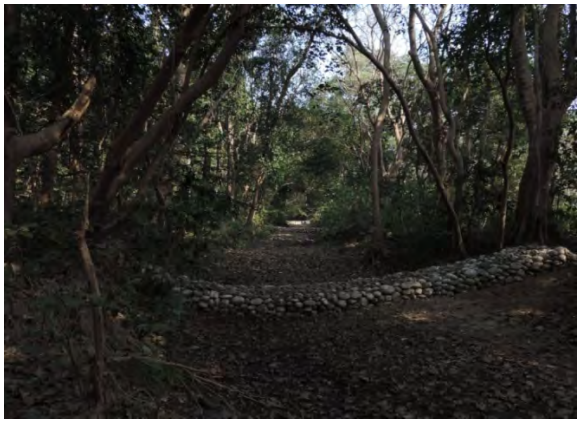
Year	Area taken up for SMC works (Ha)	No. of structures
2012-14	3347	632
2014-15	3034	537
2015-16	2992	549
2016-17	2360	396
2018-19	1136	150



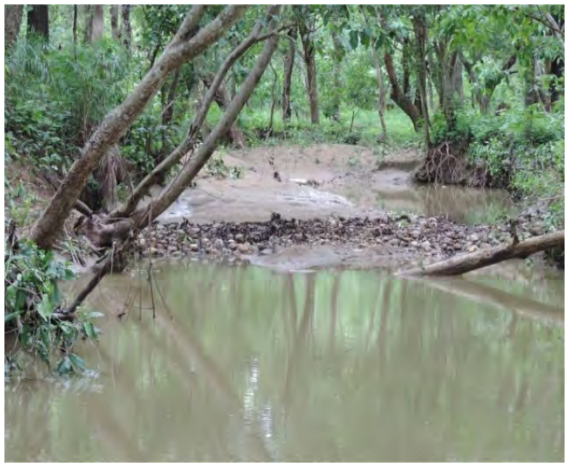


Works have been carried out for treatment of existing gullies as also gullies which are in formation stage. Treatment of gully heads has been done using sand bags (geo-bags) and stones/boulders filled crates.

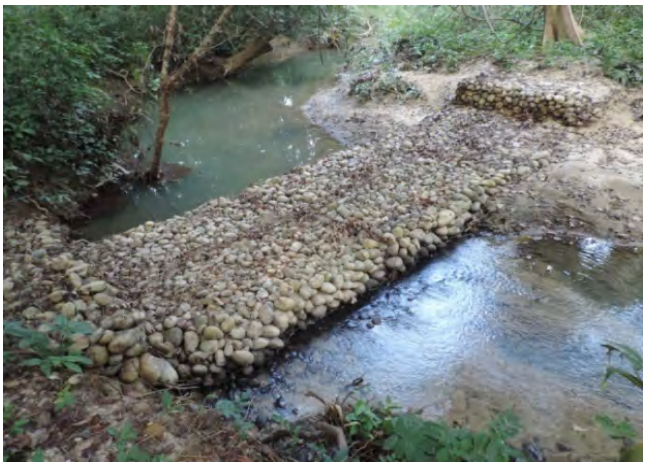
The results of the work done in last 6 years have been very encouraging.



Not only moisture regime has improved (resulting in water availability even during pinch season) but lot of silt has also been accumulated.



Kathaiya Nala (2016)



Barbarhai Nala (2016)

17.STATUS OF OPEN DEFECATION FREE (ODF):

Sl. No.	Name of City/ULBs	Status of ODF declared	Date of QCI Certificate	Remarks
1	Ramnagar/Harinagar Nagar Panchayat	ODF	18.09.2018	

18. STATUS OF SOLID WASTE, PLASTIC WASTE, BIO-MEDICAL WASTE, E-WASTE AND HAZARDOUS WASTE MANAGEMENT

SWM:

Sl. No.	Name of City/ULBs	Waste generation TPD	Total Project Cost (Rs. in Lakh)	Remarks/ Timelines for execution
1	Ramnagar/ Harinagar Nagar Panchayat	07	---	SWM DPR is in under preparation and to be completed by Marach, 2020.

PWM: The Government of Bihar has banned the use of plastic carry bags (irrespective of their size & thickness) in the jurisdiction of all Urban Local Bodies and Gram Panchayats in the State of Bihar vide Gazette Notification No. 943, dated-24.10.2018 & 1043, dated-11.12.2018. Penalty provisions have been made in the Plastic Waste Management Byelaws, 2018, if anyone is involved in production, distribution, trading, storage, sale and use of plastic carry bags irrespective of its thickness and sizes.

BMW: Bio-medical wastes from the HCFs are collected treated and disposed by the M/s Medicare Environmental Management (P) Ltd., Muzaffarpur Industrial Area, P.O.-Bela, Dist-Muzaffarpur, a Common Bio-Medical Waste Treatment Facilities (CBWTF).

e-Waste: There is no any manufacturer and e-Waste dismantlers, recyclers and re-furbishers in this State. Producers have been directed for collection & channelization of e-waste under EPR authorization by CPCB.

HW: There is no significant HW generation from this area.

19. FLOOD PLAIN ZONE (FPZ):

Govt. of India, initially prepared a draft flood plain zoning bill in the nineties and sent to State Governments for passing the bill. Issue of flood plain zoning was discussed in Bihar State Second Irrigation Commission during 1993-94. Govt. of Bihar has not concurred with the Flood Plain Zoning Regulation on account of densely populated northern plain terrain and mostly embanked river. This has been communicated to Govt. of India. However, buffer zone has to be assessed by the Govt. with respect to Ramrekha ariver.

20.MAINTENANCE OF ECOLOGICAL/ENVIRONMENTAL (E-FLOW)

This river originates from foothills of Himalayas in West Champaran and travels a distance of approx. 33 Km before meeting Harbaura river. There is no control structure on Ramrekha river and as such maintenace of E-flow is not applicable.

21. COMPONENTS OF ACTION PLAN:

Following components have been identified for preparation of action plan for rejuvenation and conservation of Ramrekha river in compliance with the order of the Hon'ble NGT dated-20.09.2018 in O.A. No. 673/2018.

A	**Identification of Polluting Sources**
	a. Industrial Pollution Control.
	i. Inventorisation of Industries.
	ii. Categories of industry & effluent quality.
	iii. Treatment of effluents, compliance with standards and mode of disposal of effluent.
	iv. Regulatory regime.
	b. Channelization, treatment, utilization & disposal of treated domestic sewage.
	i. Identification of towns in the catchment of river 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 & sullage joining river and interception & diversion of sewage to STP
	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 ground water 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 remediation actions in case of contaminated ground water tube wells/bore wells or hand pumps.
	iv.	Assessment of the need for regulation 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.
E	iii.	Such other issues which may be found relevant for restoring water quality to the prescribed standards.

22. DETAILED GAP ANALYSIS:

Detail gap analysis with regard to industrial effluent, sewage, solid waste (municipal solid waste, plastic waste, bio-medical waste and e-waste and industrial hazardous waste) are detailed below:-

A. Industrial Effluent Management: There are two grossly polluting industry on the banks of Ramrekha River. There is also no industrial cluster/area/estate in this polluted river stretches.

There is no gap in industrial effluent management in the catchment area of Ramrekha River.

B. Sewage Management: Ramnagar town has been identfied as the only source of sewage generation in the catchment area of Ramrekha River. The quantity of sewage generated from Ramnagar has been assessed to **27.885 MLD** through 05 drains namely Mukhya Bazar drain (Near Fish Market), ChatiyaGhat Drain West (DhangalToli), ChatiyaGhat Drain East

(Kathawa Pull), Railly Bazar Drain, Mill Quarter Drain (Pachurkha). The recipient of aforesaid drains is Ramrekha River in Ramnagar.

Presently, there is no sewerage network & STP for sewage management at Ramnagar Parisad area. DPR for I&D with STP is under preparation. After approval of DPR from NMCG work will be completed by June, 2021.

There is 100% gap in sewage management in the catchment area of Ramrekha river.

C. **Septage and Controlling Open Defecation**: Ramnagar urban local body has been declared ODF with effect from 18.09.2018. *There is no gap in septage and controlling open defecation in the catchment area of Ramrekha River.*

Solid Waste Management: Ramnagar Nagar Panchayat is the prescribed authority for solid waste management generated from its area. Solid wastes are collected from households and commercial establishments but its processing and disposal facility has not been developed so far. 02 locations for dump sites are available with the local body. Door to door collection started in all 23 wards. However, segregation at source is yet not started. Land is not available for sanitary landfills facility so far. Solid waste generation has been estimated to tune of 9.5 TPD for projected population of 2031 (75642 x 0.123 kg/day). SWM DPR is in under preparation and to be prepared by March, 2020. Status of MSW in polluted River Stretches attached as **(Annexure - 5).**

There is 50% gap in solid waste management in the catchment area of Ramrekha River as solid wastes are only collected and not segregated, processing and disposal facility has not been developed so far.

D. **Plastic Waste Management**: The Government of Bihar has banned the use of plastic carry bags (irrespective of their size & thickness) in the jurisdiction of all Urban Local Bodies and Gram Panchayats in the State of Bihar vide Gazette Notification No. 943, dated-24.10.2018 & 1043, dated-11.12.2018.Penalty provisions have been made in the Plastic Waste Management Byelaws, 2018, if anyone is involved in production, distribution,trading, storage, sale and use of plastic carry bags irrespective of its thickness and sizes.However, its implementation has to be completly ensured. Presently, there is no proper inventory with regard to plastic waste generation and its disposal.

There is 50% gap in plastic waste management in the catchment area of Ramrekha River.

E. Bio-Medical Waste Management: There are 02 HCFs present in Ramnagar, out of which 01 HCFs are tied-up with CommonBio-medical wastes treatment facility (CBWTF) located at M/s Medicare Environmental Management (P) Ltd., Muzaffarpur Industrial Area, P.O.-Bela, Dist-Muzaffarpur for proper treatment and disposal of Bio-medical wastes generated by them. Tie-up of all the units with CommonBio-medical wastes treatment facility (CBWTF) is to be ensured.

There is 50% gap in bio-medical waste management in the catchment area of Punpun River.

F. E-WasteManagement:-There is no any manufacturer and e-Waste dismantlers, recyclers and re-furbishers in this State. Producers have been directed for collection & channelization of e-waste under EPR authorization by CPCB. Presently, there is no proper inventory with regard to generation of E-waste and its channelization for its treatment and disposal and hence ***it is not possible to estimate the gap in E-waste management in the Ramrekha River.***

G. Industrial Hazardous Waste:-There is no hazardous waste generation in the area. M/s Harinagar Sugar Mill and M/s Harinagar Sugar Mills (Distillery Division), West Champaran generates used oil approx. 1.2 MT which is recycable waste.

There is no gap in hazardous waste management in the catchment area of Ramrekha River.

H. Ground Water Quality Monitoring:-Ground water is an important source for drinking as well as for other useful activities. 100% population in Ramnagar and other rural areas of the Ramrekha river catchment depend on ground water.Central Ground Water Board (Ministry of Water Resources River Development & Ganga Rejuvenation, GoI) carries periodic assessment of ground water resource of the State of Bihar in consultation with Minor Irrigation Department, GoB. Last assessment has been carried out for the year 2017 and publication of the completed report is awaited. As per report published in 2014 (as on 31.03.2011) and 2017 (as on 31.03.2013) the status is as hereunder:-

Particulars	As on 31.03.2011	As on 31.03.2013	As on 31.03.2017
No. of assessment blocks/units	533	534	535
Category			
1. Safe	522	519	433
2. Semi critical	11	08	72
3. Critical	Nil	Nil	18
4. Over exploited	Nil	Nil	12

A total no. of 18 assessment blocks of East Champaran district was observed in safe category.

Ground water quality also has been assessed by Public Health Engineering Department, Govt. of Bihar at different locations in Ramnagar block. The ground water quality with respect to pH, Turbidity, TDS, TH, Ca, Mg,Cl, Fe, NO_3, SO_4, F, As, TC has been observed complying with the drinking water standards (**Annexure-6**).

There is no gap in ground water qualityin the catchment area of Ramrekha River.

23. ACTION PLAN FOR RESTORATION & CONSERVATION OFRAMREKHA RIVER:

A. Action Plan for Industrial Pollution Control:

(Implementing Agency: BSPCB, Implementation Period: Short, Time Target for implementation: Immediate)

a. BSPCB will regulate the provisions of the Water Act, 1974 and E(P) Act, 1986, and direct the concerned industries to have captive ETP and ensure compliance to discharge standards, if any, water polluting industry is established/operated in the catchment area of Ramrekha river.
b. All the water polluting industries to be installed will be directed to have Online Continuous Effluent Monitoring System (OCEMS).
c. All the water polluting industries to be installed will be directed to adopt best practices to minimize water consumption and recycling of treated waste water as far as possible.
d. Grossly Polluting Industries (GPIs) located along the river Ramrekha shall be regularly inspected for compliance verification for implementation of ZLD or compliance of discharge standards.
e. Flow Meters at the water source point and discharge point shall be installed at all Industrial Units prior to the grant of aforesaid permission for the assessment of water balance.

B. Action Plan for Sewage Management:

(Implementing Agency: UD&HD, Ramnagar Nagar Panchayat, BSPCB Implementation Period: Shor t& Long, Time Target for implementation: 30.06.2021)

a. UD&HD, Govt. of Bihar in association with concerned ULBs will identify drains andtheir recepients along with quantity of sewage generation from its area in catchment area of Ramrekha River. The assessment of flow should exclude monsoon flow.

b. UD&HD, Govt. of Bihar in association with concerned ULBs will develop sewerage network and set up STP of adequate capacity on projected population of 2031. The STP should be properly designed with Interception and Diversion (I&D) plan.
c. The STP shall not be constructed closed to the river bed. Preferably, there should be a distance of 500 meter or more from edge of the river.
d. The status of Open Defecation Free (ODF) will be ensured & maintained.
e. Hotels and Restaurants will be directed to install STP to comply with discharge standards. If, the effluent from Hotels is discharged into municipal sewere leading to STP, the hotel or restaurant shall provide oil and grease trap to comply with General Standards for discharge under E(P) Act, 1986.

C. Action Plan for utilization of treated sewage:

(Implementing Agency: UD&HD, Minor Water Resoruces Department Implementation Period: Long, Time Target for implementation: 30.06.2021)

a. Treated sewage after setting up of STP, will be utilized for irrigation or agricultural or construction activities and other bulk consumers by Indian Railway, infrastructure projects in the Ramnagar with the water channel network to reduce ground water consumption.

D. Action Plan for Management of Solid Waste:-

(Implementing Agency: UD&HD, ULBs, Implementation Period: Short & Medium, Time Target for implementation: Immediate to 30.06.2020)

a. Ensuring of implentation of Door-to-door collection of solid waste.
b. Ensuring source segregation as biodegradable and non-biodegradable wastes.
c. Transporation of municipal solid wastes under covered system.
d. Construction of waste processing facility by 30.06.2020.
e. Identification and development of landfill for disposal of residual or inert solid waste.
f. Ensuring restriction on disposal of solid waste on banks of river.
g. There shall be no dumping or landfill sites for any kind of waste irrespective of any technology for waste processing within 500 meter from the edge of river.

E. Action Plan for Plastic Waste Management:

(Implementing Agency: UD&HD, ULBs, Implementation Period: Short, Time Target for implementation: Immediate)

a. Ensuring impementation of ban on use of plastic carry bags (irrespective of their size and thickness) in the catchment area of the Ramrekha river.

b. Ensuring plastic waste management through EPR of producers, Brand Owners etc.

F. Action Plan for Bio-Medical Waste Management:

(Implementing Agency: BSPCB, Health Deparment, Implementation Period: Short, Time Target for implementation: Immediate)

a. Implementation of provisions of the Bio-Medical Waste Management Rules, 2016.
b. Ensuring collection, treatment and diposal of BMW through Common Bio-Medical Waste Treatment Facility (CBWTF) from all HCFs.

G. Action Plan for e- Waste Management:

(Implementing Agency: BSPCB, Implementation Period: Short, Time Target for implementation: Immediate)

a. Ensuring e-waste management through EPR of producers.

H. Action Plan Management of Flood Plain Zone (FPZ):

(Implementing Agency: Water Resources Department, Implementation Period: Medium, Time Target for implementation: 30.06.2020)

a. Buffer zone has to be assessed by the Govt. with respect to Ramrekha river as there is no regulation on flood plain zone in Bihar.
b. Plantation in buffer zone of Ramrekha river Flood Plain Zone to be done.
c. Checking and removal of encroachments periodically.
d. Prohibition of disposal of municipal and bio-medical waste particularly in drains and on the banks of river.

I. Action Plan for maintenance of Ecological/Environmental(E-Flow):

(Implementing Agency: Water Resources Department, Implementation Period: Medium, Time Target for implementation: 30.06.2020)

a. This river originates from foothills of Himalayas in West Champaran and travels a distance of approx. 33 Km. There is no control structure on Ramrekha river and as such maintenace of E-flow is not applicable.

J. Action Plan for development of Greenery:

(Implementing Agency: DoEF&CC, GoB, Implementation Period: Long, Time Target for implementation: 31.12.2020)

a. Department of Environment, Forest & Climate Change, Govt. of Bihar shall ensure the development of greenery under Namami Gange Scheme and Krishi Road Map in the available land in the catchment area of Ramrekha river.

K. Action Plan for Ground Water Recharging/Rain Water Harvesting:-

(Implementing Agency: Rural Development Department, Implementation Period: Long, Time Target for implementation: 2022)

a. To ensure initiatives of drives for recharging of ground water by providing roof top rain water hervesting structures and construction of soak pits/recharge pits near public well, hand pump, tubewell and other water bodies under Jal-Jeevan-Hariyali Abhiyan.
b. Imposition of condition for providing roof top rain water harvesting structures in the building plan in an area of the 1000 Sqm or more while according approval for construction.

L. Action Plan for Ground Water Quality Assessement:-

(Implementing Agency: PHED, Implementation Period: Medium, Time Target for implementation: Dec. 2020)

a. PHED shall ensure groud water quality assessment at different location in catchment area of Ramrekha river on defined frequency.

M. Action Plan related with other Activities:-

(Implementing Agency: BSPCB, Implementation Period: Short, Time Target for implementation: Immediate)

a. Water quality of polluted river strech shall be displayed on the BSPCB website.
b. Separate website for River Rejuvenation Committee-polluted River stretches in the State of Bihar has been developed (http://forestonline.bih.nic.in/rrc/Background.aspx linked with BSPCB website http://bspcb.bih.nic.in/)
c. District Level Implementation Committee has been tasked with supervising the implementation of action plan within their jurisdiction.

24. MONITORING OF THE ACTION PLANS:

"River Rejuvenation Committee "constituted by DoEF&CC, Govt. of Bihar vide notification no. 1412(E), dated-31.12.2018 in compliance with the order of the Hon'ble National Green Tribunal (NGT) Principal Bench, New Delhi dated-20.09.2018in O.A. No. 673/2018 shall monitor the implementation of action plan under the supervision and chairmanship of the Principal Secretary, DoEF&CC, Govt. of Bihar.

State Level Advisory Committee under chairmanship of the Chief Secretary, Bihar shall over all guide and monitor the implentation of action plan prepared for rejuvenation of polluted river stretches in the State of Bihar including Ramrekha river.

Annexure-1

CONSTITUTION OF RIVER REJUVENATION COMMITTEE BIHAR

Government of Bihar
Department of Environment, Forest & Climate Change

Notification

No. Parya/Van-84/2018..... Dated.....

Vide Order dated 20.09.2018 in Original Application (O.A.) No. 673/2018: News Item Published in "the Hindu" Authored by Shri Jacob Koshy titled "More river stretches are now critically polluted-CPCB", the Hon'ble National Green Tribunal (NGT) has directed to prepare action plans within two months for bringing all the polluted river stretches to be fit at least for bathing purposes (i.e. BOD <3mg/L and FC<500 MPN/100ml) within six months from the date of finalisation of the action plan. For preparation of the action plan a four member committee, to be known as the "River Rejuvenation Committee" has also been prescribed by the NGT. This Committee will also be the Monitoring Committee for execution of the action plan and has to function under the overall supervision and co-ordination of the Additional Chief Secretary/ Principal Secretary, Department of Environment, Forest & Climate Change.

Accordingly in compliance with the directions of the Hon'ble NGT, a four member "Bihar River Rejuvenation Committee" is Constituted as under:

1.	Director, Ecology and Environment, Department of Environment, Forest & Climate Change, Government of Bihar	Member
2.	Special Secretary, Urban Development & Housing Department, Government of Bihar	Member
3.	Director Industries, Department of Industry, Government of Bihar	Member
4.	Member Secretary, Bihar State Pollution Control Board	Member Convener

Sd/-

Additional Chief Secretary,
Department of Environment, Forest & Climate Change,
Government of Bihar.

Memo No-Parya/Van-84/8018- 1412(E)**EF &CC Patna-15, dated** 31/12/18

Copy to-Principal Secretary, Urban Development & Housing Department, government of Bihar/ Principal Secretary, Industry Department, Government of Bihar/Chairman, Bihar State Pollution Control Board, Patna/Special Secretary, Urban Development & Housing Department, Government of Bihar/Director Industries, Department of Industry, Government of Bihar/Director, Ecology and Environment, Department of Environment, Forest & Climate change, Government of Bihar/ Member Secretary, Bihar State Pollution Control Board, Patna/Principal Private Secretary to the Additional Chief Secretary, Environment, Forest & Climate change Department for information and necessary action.

31/12/18

(Surendra Singh)
CF-Cum-Additional
Secretary

Annexure-2

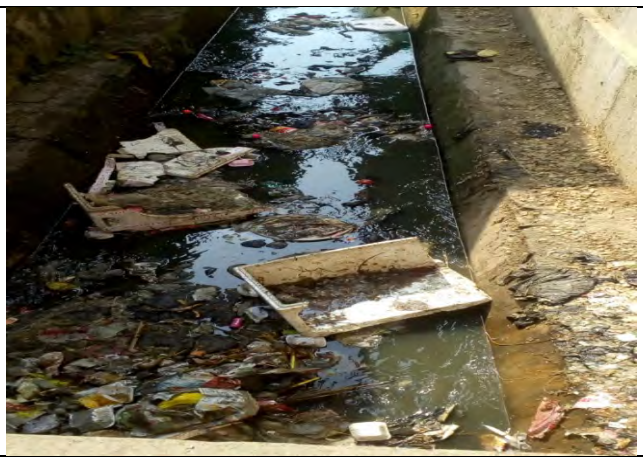
MONITORING REPORTS OF INDIVIDUAL DRAINS

Date of Sampling: 17/11/2018

1	Name of the Drain		**Mukhya Bazar, Near Fish Market, Nagar Panchyat Road, Harinagar, Ramnagar**			
2	Meeting River Ganga/Tributaries/Other		Meeting to Ramrekha River			
3	Name of Regional Office of SPCB		Muzaffarpur			
4	Source of Pollution Load		Domestic Sewage			
5	If Industrial / Mixed (Please indicate type of sector)		NA			
6	Traceable length of drain (in Km) before meeting Ganga/Tributaries/Other (through Google earth/Map)		0.235 Km approx.			
7	Catchment Area		Fish marker, Nagar Panchayat Road			
8	Co-ordinate of the confluence Point (if not reachable indirect through google earth/map) (Decimal Units)	Latitude	27.1649890			
		Longitude	84.3265244			
	Distance of the sampling point from confluence point (may the find out over google earth / map), KM		0.144 Km approx.			
9	Co-ordinate of the Sampling Point (Decimal Units)	Latitude	27.1651730			
		Longitude	84.3274743			
10	Landmarks / Address of the Location		Near Nagar Panchayat Office			
11	Average flow if in MLD, if zero indicate whether dry or stagnant		**7-9 AM**	**1-2 PM**	**4-6 PM**	**Average Flow**
			12.441	**11.923**	**7.862**	**10.743**
12	Observations		Confluence in Ramrekha River Hari Nagar			

(General Parameters)

SL. No.	Parameters	Results
1	pH	6.08
2	BOD (mg/l)	115
3	COD (mg/l)	372
4	TSS (mg/l)	54
5	TDS ((mg/l)	672
6	TC (MPN/100 ml)	$92X10^5$
7	FC (MPN/100 ml)	$54X10^5$

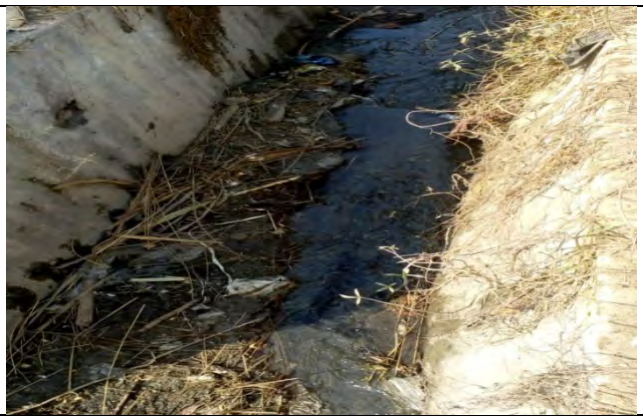


Date of Sampling: 28/11/2018

1	Name of the Drain		**ChatiyaGhat Drain West, DhangalToli, Harinagar, Ramnagar**			
2	Meeting River Ganga/Tributaries/Other		Meeting to Ramrekha River			
3	Name of Regional Office of SPCB		Muzaffarpur			
4	Source of Pollution Load		Domestic Sewage			
5	If Industrial / Mixed (Please indicate type of sector)		NA			
6	Traceable length of drain (in Km) before meeting Ganga/Tributaries/Other (through Google earth/Map)		0.310 Km approx.			
7	Catchment Area		Bazar, DhangalToli			
8	Co-ordinate of the confluence Point (if not reachable indirect through google earth/map) (Decimal Units)	Latitude	27.1634385			
		Longitude	84.3289190			
	Distance of the sampling point from confluence point (may the find out over google earth / map), KM		0.028 Km approx.			
9	Co-ordinate of the Sampling Point (Decimal Units)	Latitude	27.1634167			
		Longitude	84.3294229			
10	Landmarks / Address of the Location		Meghwal Ram Nagar Road			
11	Average flow if in MLD, if zero indicate whether dry or stagnant		**7-9 AM**	**1-2 PM**	**4-6 PM**	**Average Flow**
			13.132	**12.182**	**9.849**	**11.721**
12	Observations		Confluence in Ramrekha River Hari Nagar			

(General Parameters)

SL. No.	Parameters	Results
1	pH	6.34
2	BOD (mg/l)	135
3	COD (mg/l)	520
4	TSS (mg/l)	60
5	TDS ((mg/l)	730
6	TC (MPN/100 ml)	$17X10^5$
7	FC (MPN/100 ml)	$11X10^5$

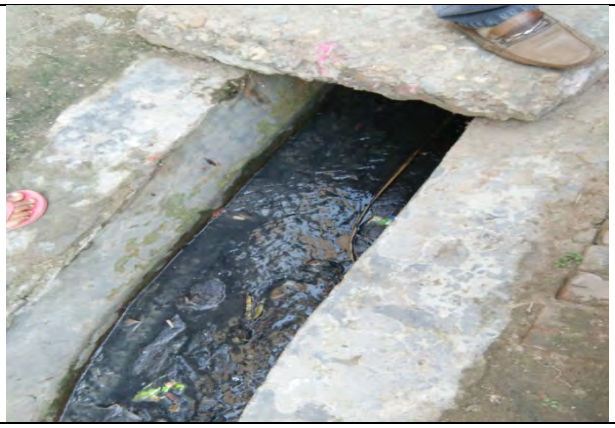


Date of Sampling: 28/11/2018

1	Name of the Drain		**ChatiyaGhat Drain East, Kathawa Pull, Harinagar, Ramnagar**			
2	Meeting River Ganga/Tributaries/Other		Meeting to Ramrekha River			
3	Name of Regional Office of SPCB		Muzaffarpur			
4	Source of Pollution Load		Domestic Sewage			
5	If Industrial / Mixed (Please indicate type of sector)		NA			
6	Traceable length of drain (in Km) before meeting Ganga/Tributaries/Other (through Google earth/Map)		0.062 Km approx.			
7	Catchment Area		KathwaPul, ChatiyaGhat Bazar			
8	Co-ordinate of the confluence Point (if not reachable indirect through google earth/map) (Decimal Units)	Latitude	27.1634987			
		Longitude	84.3284550			
	Distance of the sampling point from confluence point (may the find out over google earth / map), KM		0.020 Km approx.			
9	Co-ordinate of the Sampling Point (Decimal Units)	Latitude	27.1634080			
		Longitude	84.3284727			
10	Landmarks / Address of the Location		MeghawarRemrekha Road, Kathwapul			
11	Average flow if in MLD, if zero indicate whether dry or stagnant		**7-9 AM**	**1-2 PM**	**4-6 PM**	**Average Flow**
			1.296	**1.036**	**0.864**	**1.065**
12	Observations		Confluence in Ramrekha River Hari Nagar			

(General Parameters)

SL. No.	Parameters	Results
1	pH	6.69
2	BOD (mg/l)	42
3	COD (mg/l)	160
4	TSS (mg/l)	116
5	TDS ((mg/l)	3592
6	TC (MPN/100 ml)	$17X10^5$
7	FC (MPN/100 ml)	$11X10^5$

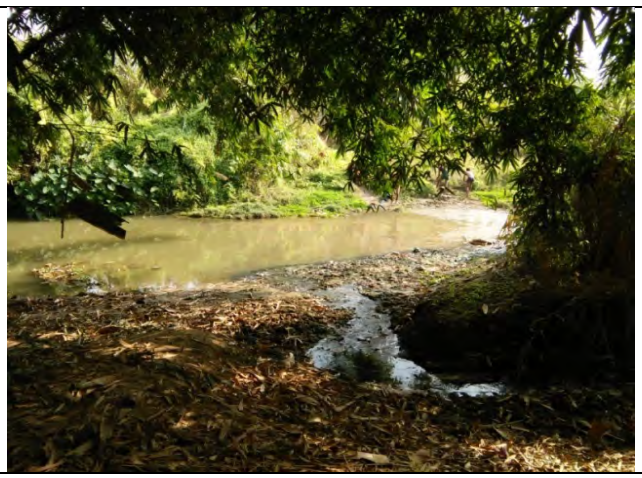


Date of Sampling: 28/11/2018

1	Name of the Drain		**Railly Bazar Drain, , Harinagar, Ramnagar**			
2	Meeting River Ganga/Tributaries/Other		Meeting to Ramrekha River			
3	Name of Regional Office of SPCB		Muzaffarpur			
4	Source of Pollution Load		Domestic Sewage			
5	If Industrial / Mixed (Please indicate type of sector)		NA			
6	Traceable length of drain (in Km) before meeting Ganga/Tributaries/Other (through Google earth/Map)		0.244 Km approx.			
7	Catchment Area		Aryan Nagar, Raily Bazar, Main Road			
8	Co-ordinate of the confluence Point (if not reachable indirect through google earth/map) (Decimal Units)	Latitude	27.1587440			
		Longitude	84.3306443			
	Distance of the sampling point from confluence point (may the find out over google earth / map), KM		0.160 Km approx.			
9	Co-ordinate of the Sampling Point (Decimal Units)	Latitude	27.1591873			
		Longitude	84.3300968			
10	Landmarks / Address of the Location		Slum Area Raily Bazar			
11	Average flow if in MLD, if zero indicate whether dry or stagnant		**7-9 AM**	**1-2 PM**	**4-6 PM**	**Average Flow**
			1.123	**0.864**	**0.691**	**0.892**
12	Observations		Confluence in Ramrekha River Hari Nagar			

(General Parameters)

SL. No.	Parameters	Results
1	pH	5.63
2	BOD (mg/l)	28
3	COD (mg/l)	108
4	TSS (mg/l)	22
5	TDS ((mg/l)	262
6	TC (MPN/100 ml)	$17X10^5$
7	FC (MPN/100 ml)	$11X10^5$



Date of Sampling: 28/11/2018

1	Name of the Drain		**Sugar Mill Officers Quarter Drain, Pachurkha, Harinagar, Ramnagar**			
2	Meeting River Ganga/Tributaries/Other		Meeting to Ramrekha River			
3	Name of Regional Office of SPCB		Muzaffarpur			
4	Source of Pollution Load		Domestic Sewage			
5	If Industrial / Mixed (Please indicate type of sector)		N.A			
6	Traceable length of drain (in Km) before meeting Ganga/Tributaries/Other (through Google earth/Map)		0.157 Km approx.			
7	Catchment Area		Panchurkha, Mill Quarter, Hari Nagar			
8	Co-ordinate of the confluence Point (if not reachable indirect through google earth/map) (Decimal Units)	Latitude	27.1514496			
		Longitude	84.3310205			
	Distance of the sampling point from confluence point (may the find out over google earth / map), KM		0.045 Km approx.			
9	Co-ordinate of the Sampling Point (Decimal Units)	Latitude	27.1517368			
		Longitude	84.3314161			
10	Landmarks / Address of the Location		Behind Harinagar Sugar Mill			
11	Average flow if in MLD, if zero indicate whether dry or stagnant		**7-9 AM**	**1-2 PM**	**4-6 PM**	**Average Flow**
			4.060	**3.283**	**3.049**	**3.464**
12	Observations		Confluence in Ramrekha River Hari Nagar			

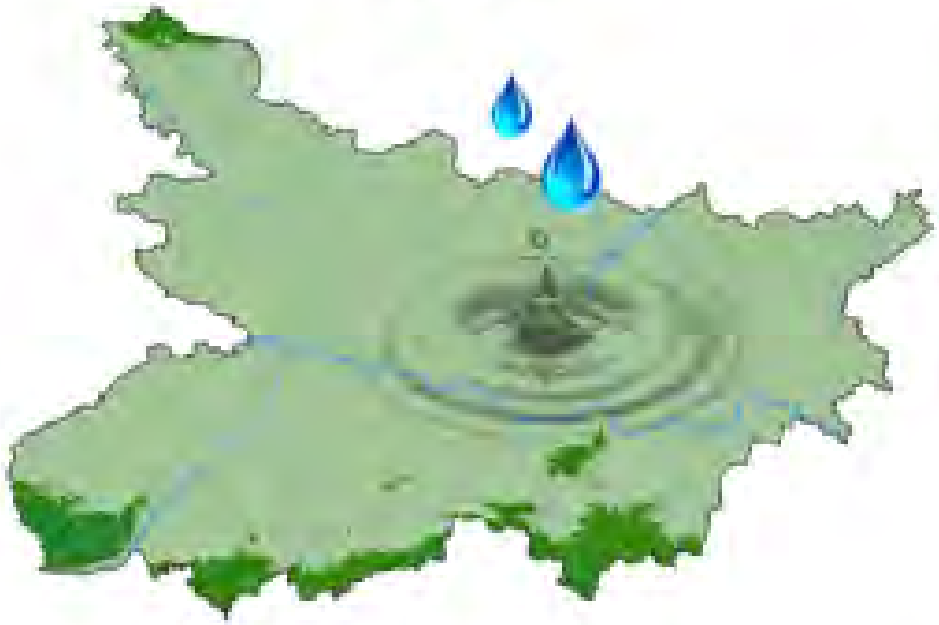
(General Parameters)

SL. No.	Parameters	Results
1	pH	6.81
2	BOD (mg/l)	24
3	COD (mg/l)	108
4	TSS (mg/l)	46
5	TDS ((mg/l)	578
6	TC (MPN/100 ml)	$17X10^5$
7	FC (MPN/100 ml)	$11X10^5$

Annexure-3

REPORT ON DYNAMIC GROUND WATER RESOURCES OF BIHAR STATE

(As on 31st March 2011)



Prepared By

Central Ground Water Board
Mid-Eastern Region, Patna
Ministry of Water Resources, RD & GR
Government Of India

&

Ground Water Directorate
Minor Water Resources
Department
Government Of Bihar

JUNE, 2011

Table5.5SummaryofAssessmentUnitsandSubunitsandCategorization

Sl.No.	Nameofthed istrict	NoofassessmentBlocks\ Units	Noofassessmentunits	Noof assessment Sub-units		NumberofAssessmentUnits						
						NonCommandareas					TotalNo.ofAffectedBlocks	TotalNo.of'Safe'Blocks\ Units
				Alluvium	HardRock	OverExploited	Critical	Semi-Critical	Safe	Total(non-commandarea)		
1	Araria	9	9	9	0	0	0	0	9	9	0	9
2	Arwal	5	5	5	0	0	0	0	5	5	0	5
3	Aurangabad	11	11	11	0	0	0	0	11	11	0	11
4	Banka	11	11	11	11	0	0	0	11	11	0	11
5	Begusarai	18	18	18	0	0	0	2	16	18	2	16
6	Bhabhua	11	11	10	4	0	0	0	11	11	0	11
7	Bhagalpur	16	16	16	0	0	0	0	16	16	0	16
8	Bhojpur	14	14	14	0	0	0	0	14	14	0	14
9	Buxar	11	11	11	0	0	0	0	11	11	0	11
10	Darbhanga	18	18	18	0	0	0	0	18	18	0	18
11	EastChamparan	27	27	27	0	0	0	0	27	27	0	27
12	Gaya	24	24	22	16	0	0	2	22	24	2	22
13	Gopalganj	14	14	14	0	0	0	0	14	14	0	14
14	Jamui	10	10	6	6	0	0	0	10	10	0	10
15	Jehanabad	7	7	7	0	0	0	1	6	7	1	6
16	Katihar	16	16	16	0	0	0	0	16	16	0	16
17	Khagaria	7	7	7	0	0	0	0	7	7	0	7
18	Kishanganj	7	7	7	0	0	0	0	7	7	0	7
19	Lakhisarai	7	6	6	4	0	0	0	6	6	0	6
20	Madhepura	13	13	13	0	0	0	0	13	13	0	13
21	Madhubani	21	21	21	0	0	0	0	21	21	0	21
22	Munger	9	9	9	7	0	0	0	9	9	0	9
23	Muzaffarpur	16	16	16	0	0	0	1	15	16	1	15
24	Nalanda	20	20	20	0	0	0	3	17	20	3	17
25	Nawada	14	14	13	7	0	0	1	13	14	1	13
26	Patna	23	23	23	0	0	0	2	21	23	2	21
27	Purnia	14	14	14	0	0	0	0	14	14	0	14
28	Rohtas	19	19	19	5	0	0	0	19	19	0	19
29	Saharsa	10	10	10	0	0	0	0	10	10	0	10
30	Samastipur	20	20	20	0	0	0	1	19	20	1	19
31	Saran	20	20	20	0	0	0	0	20	20	0	20

Sl.No.	Nameofthed istrict	NoofassessmentBlocks\ Units	Noofassessmentunits	Noof assessment Sub-units		NumberofAssessmentUnits						
						NonCommandareas					TotalNo.ofAffectedBlocks	TotalNo.of'Safe'Blocks\ Units
				Alluvium	HardRock	OverExploited	Critical	Semi-Critical	Safe	Total(non-commandarea)		
32	Sheihkpura	6	6	6	1	0	0	0	6	6	0	6
33	Sheohar	5	5	5	0	0	0	0	5	5	0	5
34	Sitamarhi	17	17	17	0	0	0	0	17	17	0	17
35	Siwan	19	19	19	0	0	0	0	19	19	0	19
36	Supaul	11	11	11	0	0	0	0	11	11	0	11
37	Vaishali	16	16	16	0	0	0	1	15	16	1	15
38	WChamparan	18	18	18	0	0	0	0	18	18	0	18
	STATETOTAL=	**534**	**533**	**525**	**61**	**0**	**0**	**14**	**519**	**533**	**14**	**519**

Note: In Lakhisari district, Chanan block has been assessed as part of Lakhisari block

Earlier estimation (2011) categorized 11 blocks as 'Semi Critical' out of 534 assessed blocks. In contrast present estimation categorized 14 blocks as '*Semi Critical*' out of 534 assessed administrative units.

High stage of development is due to agricultural activities in Bihar state. The status of categorization for blocks other than 'Safe' in the State as per present estimation is given in **Table 5.6**.

Table5.6Listofblockscategorisedotherthan*'Safe'*inBiharStatebasedon DynamicGroundwaterResourceAssessment(ason31st march,2013)

Sl.	District	Block	SOD%	Category	Categoryaswasin 2011
1.	Begusarai	Naokothi	98.71	Semi-Critical	Semi-Critical
		Bhagwanpur	91.32	Semi-Critical	Safe
2.	Gaya	GayaSadar	89.48	Semi-Critical	Semi-Critical
		Imamganj	96.93	Semi-Critical	Safe
3.	Jehanabad	Kako	83.35	Semi-Critical	Safe
4.	Muzaffarpur	Mushari	97.75	Semi-Critical	Semi-Critical
5.	Nalanda	Nagarnausa	96.01	Semi-Critical	Semi-Critical
		Rajgir	78.24	Semi-Critical	Semi-Critical
		Silao	93.83	Semi-Critical	Safe
6.	Nawada	Meskaur	95.67	Semi-Critical	Semi-Critical
7.	Patna	Sanpatchak	84.29	Semi-Critical	Semi-Critical
		PatnaSadar	95.39	Semi-Critical	Safe
8.	Samastipur	Tajpur	77.58	Semi-Critical	Semi-Critical
9.	Vaishali	Hazipur	96.45	Semi-Critical	Safe

Latest status of Ground Water in Bihar as reported CGWB

Sl. No.	District	Block	Sub-Unit	TotalArea	Hilly Area	GW Worthy Area	NetGW Resource	GrossGW Draftforirrigation	GrossGW DraftforDomestic Purposes	GrossGW Draftby Industry	GrossDraft (AllUses)	StageOfGW Development	Category
				(ha)	(ha)	(ha)	(ha-m)	(ha-m)	(ha-m)	(ha-m)	(ha-m)	(%)	
6	Nawada	Meskaur	HardRock	12183	0	12183	1573.01	1206.00	151.79	67.89	1425.68	90.63	Critical
7	Nawada	Nardiganj	Alluvium	10189	0	10189	3840.73	1400.40	159.36	77.99	1637.75	42.64	Safe
8	Nawada	Narhat	Alluvium/Hardrock	7639	0	7639	2504.05	1035.45	140.76	58.81	1235.02	49.32	Safe
9	Nawada	Nawada	Alluvium	17808	0	17808	4262.65	2562.00	410.24	161.37	3133.61	73.51	Semi-Critical
10	Nawada	Pakribarwan	Alluvium	20101	0	20101	4654.91	2259.90	245.12	125.25	2630.27	56.51	Safe
11	Nawada	Rajauli	Alluvium/Hardrock	38019	1812	36207	4277.99	2224.50	226.65	136.47	2587.62	60.49	Safe
12	Nawada	Roh	Alluvium	16402	0	16402	3822.66	2498.40	209.10	135.37	2842.87	74.37	Semi-Critical
13	Nawada	Sirdala	Alluvium/Hardrock	24685	0	24685	3306.55	1775.10	224.82	100.00	2099.92	63.51	Safe
14	Nawada	Warsaliganj	Alluvium	16096	0	16096	7370.10	3966.00	358.57	231.48	4556.05	61.82	Safe
	District	Nawada		248657	2999	245658	58107.82	26098.05	3150.63	1516.04	30764.72	52.94	
1	Patna	Athmalgola	Alluvium	4025	0	4025	1199.20	1145.89	149.74	64.78	1360.41	113.44	OverExploited
2	Patna	Bakhtiarpur	Alluvium	19683	0	19683	6945.08	1340.46	532.00	111.18	1983.64	28.56	Safe
3	Patna	Barh	Alluvium	10959	0	10959	2951.97	1553.39	346.02	101.93	2001.34	67.80	Safe
4	Patna	Belchi	Alluvium	6867	0	6867	1918.40	1310.52	108.92	70.97	1490.41	77.69	Semi-Critical
5	Patna	Bihta	Alluvium	19392	0	19392	4495.44	2352.77	614.66	170.57	3138.01	69.80	Safe
6	Patna	Bikram	Alluvium	14815	0	14815	5413.13	2311.34	353.07	144.05	2808.46	51.88	Safe
7	Patna	Danapur	Alluvium	12446	0	12446	3178.69	1375.72	611.59	129.34	2116.64	66.59	Safe
8	Patna	Daniawan	Alluvium	6510	0	6510	1783.30	860.64	123.60	49.21	1033.45	57.95	Safe
9	Patna	Dhanarua	Alluvium	18555	0	18555	4777.84	2630.82	347.96	148.94	3127.72	65.46	Safe
10	Patna	Dulhinbazar	Alluvium	11068	0	11068	3465.07	1061.13	205.71	63.34	1330.18	38.39	Safe
11	Patna	Fathua	Alluvium	12636	0	12636	3244.14	1571.32	317.56	99.94	1988.82	61.30	Safe
12	Patna	Ghoshwari	Alluvium	13983	0	13983	3514.85	591.69	123.29	35.75	750.73	21.36	Safe
13	Patna	Khusrupur	Alluvium	6139	0	6139	1624.54	910.31	232.05	63.02	1205.38	74.20	Semi-Critical
14	Patna	Maner	Alluvium	17070	0	17070	3372.03	1375.72	574.73	112.19	2062.63	61.17	Safe
15	Patna	Masuarhi	Alluvium	20243	0	20243	5643.03	4027.73	593.97	254.93	4876.63	86.42	Semi-Critical
16	Patna	Mokama	Alluvium	19132	0	19132	4789.80	1309.49	548.94	117.27	1975.70	41.25	Safe
17	Patna	Naubatpur	Alluvium	16774	0	16774	6220.06	3542.59	417.49	207.74	4167.82	67.01	Safe
18	Patna	Paliganj	Alluvium	23775	0	23775	8613.76	2399.44	454.55	146.31	3000.30	34.83	Safe
19	Patna	Pandarak	Alluvium	20489	0	20489	5265.72	1101.88	254.52	67.82	1424.22	27.05	Safe
20	Patna	PatnaSadar	Alluvium	15666	0	15666	4075.88	1258.36	2220.95	346.86	3826.17	93.87	Critical
21	Patna	Phulwarisarif	Alluvium	10647	0	10647	4380.49	3368.18	806.17	247.74	4422.08	100.95	OverExploited
22	Patna	Punpun	Alluvium	12675	0	12675	4419.48	3749.00	227.40	198.82	4175.22	94.47	Critical
23	Patna	Sampatchak	Alluvium	6535	0	6535	1862.97	1424.33	175.92	80.01	1680.26	90.19	Critical
	District	Patna		320084	0	320084	93154.86	42572.72	10340.80	3032.70	55946.22	60.06	
1	Purnia	Amaur	Alluvium	24505	0	24505	9535.74	7058.01	478.30	376.82	7913.13	82.98	Semi-Critical
2	Purnia	Baisa	Alluvium	20732	0	20732	7601.61	3368.82	317.92	184.34	3871.08	50.92	Safe
3	Purnia	Baisi	Alluvium	20463	0	20463	6622.20	4146.66	374.84	226.07	4747.57	71.69	Semi-Critical
4	Purnia	Banmankhi	Alluvium	36884	0	36884	10910.59	4404.81	678.36	265.61	5348.78	49.02	Safe
5	Purnia	Baraharakothi	Alluvium	22971	0	22971	8075.32	2457.70	344.04	140.09	2941.83	36.43	Safe

Sl. No.	District	Block	Sub-Unit	TotalArea	Hilly Area	GW Worthy Area	NetGW Resource	GrossGW Draftfor irrigation	GrossGW Draftfor Domestic Purposes	GrossGW Draftby Industry	GrossDraft (AllUses)	StageOf GW Developme nt	Category
				(ha)	(ha)	(ha)	(ha-m)	(ha-m)	(ha-m)	(ha-m)	(ha-m)	(%)	
6	Nawada	Meskaur	HardRock	12183	0	12183	1573.01	1206.00	151.79	67.89	1425.68	90.63	Critical
7	Nawada	Nardiganj	Alluvium	10189	0	10189	3840.73	1400.40	159.36	77.99	1637.75	42.64	Safe
8	Nawada	Narhat	Alluvium/Hardrock	7639	0	7639	2504.05	1035.45	140.76	58.81	1235.02	49.32	Safe
9	Nawada	Nawada	Alluvium	17808	0	17808	4262.65	2562.00	410.24	161.37	3133.61	73.51	Semi-Critical
10	Nawada	Pakribarwan	Alluvium	20101	0	20101	4654.91	2259.90	245.12	125.25	2630.27	56.51	Safe
11	Nawada	Rajauli	Alluvium/Hardrock	38019	1812	36207	4277.99	2224.50	226.65	136.47	2587.62	60.49	Safe
12	Nawada	Roh	Alluvium	16402	0	16402	3822.66	2498.40	209.10	135.37	2842.87	74.37	Semi-Critical
13	Nawada	Sirdala	Alluvium/Hardrock	24685	0	24685	3306.55	1775.10	224.82	100.00	2099.92	63.51	Safe
14	Nawada	Warsaliganj	Alluvium	16096	0	16096	7370.10	3966.00	358.57	231.48	4556.05	61.82	Safe
	District	Nawada		248657	2999	245658	58107.82	26098.05	3150.63	1516.04	30764.72	52.94	
1	Patna	Athmalgola	Alluvium	4025	0	4025	1199.20	1145.89	149.74	64.78	1360.41	113.44	OverExploited
2	Patna	Bakhtiarpur	Alluvium	19683	0	19683	6945.08	1340.46	532.00	111.18	1983.64	28.56	Safe
3	Patna	Barh	Alluvium	10959	0	10959	2951.97	1553.39	346.02	101.93	2001.34	67.80	Safe
4	Patna	Belchi	Alluvium	6867	0	6867	1918.40	1310.52	108.92	70.97	1490.41	77.69	Semi-Critical
5	Patna	Bihta	Alluvium	19392	0	19392	4495.44	2352.77	614.66	170.57	3138.01	69.80	Safe
6	Patna	Bikram	Alluvium	14815	0	14815	5413.13	2311.34	353.07	144.05	2808.46	51.88	Safe
7	Patna	Danapur	Alluvium	12446	0	12446	3178.69	1375.72	611.59	129.34	2116.64	66.59	Safe
8	Patna	Daniawan	Alluvium	6510	0	6510	1783.30	860.64	123.60	49.21	1033.45	57.95	Safe
9	Patna	Dhanarua	Alluvium	18555	0	18555	4777.84	2630.82	347.96	148.94	3127.72	65.46	Safe
10	Patna	Dulhinbazar	Alluvium	11068	0	11068	3465.07	1061.13	205.71	63.34	1330.18	38.39	Safe
11	Patna	Fathua	Alluvium	12636	0	12636	3244.14	1571.32	317.56	99.94	1988.82	61.30	Safe
12	Patna	Ghoshwari	Alluvium	13983	0	13983	3514.85	591.69	123.29	35.75	750.73	21.36	Safe
13	Patna	Khusrupur	Alluvium	6139	0	6139	1624.54	910.31	232.05	63.02	1205.38	74.20	Semi-Critical
14	Patna	Maner	Alluvium	17070	0	17070	3372.03	1375.72	574.73	112.19	2062.63	61.17	Safe
15	Patna	Masuarhi	Alluvium	20243	0	20243	5643.03	4027.73	593.97	254.93	4876.63	86.42	Semi-Critical
16	Patna	Mokama	Alluvium	19132	0	19132	4789.80	1309.49	548.94	117.27	1975.70	41.25	Safe
17	Patna	Naubatpur	Alluvium	16774	0	16774	6220.06	3542.59	417.49	207.74	4167.82	67.01	Safe
18	Patna	Paliganj	Alluvium	23775	0	23775	8613.76	2399.44	454.55	146.31	3000.30	34.83	Safe
19	Patna	Pandarak	Alluvium	20489	0	20489	5265.72	1101.88	254.52	67.82	1424.22	27.05	Safe
20	Patna	PatnaSadar	Alluvium	15666	0	15666	4075.88	1258.36	2220.95	346.86	3826.17	93.87	Critical
21	Patna	Phulwarisarif	Alluvium	10647	0	10647	4380.49	3368.18	806.17	247.74	4422.08	100.95	OverExploited
22	Patna	Punpun	Alluvium	12675	0	12675	4419.48	3749.00	227.40	198.82	4175.22	94.47	Critical
23	Patna	Sampatchak	Alluvium	6535	0	6535	1862.97	1424.33	175.92	80.01	1680.26	90.19	Critical
	District	Patna		320084	0	320084	93154.86	42572.72	10340.80	3032.70	55946.22	60.06	
1	Purnia	Amaur	Alluvium	24505	0	24505	9535.74	7058.01	478.30	376.82	7913.13	82.98	Semi-Critical
2	Purnia	Baisa	Alluvium	20732	0	20732	7601.61	3368.82	317.92	184.34	3871.08	50.92	Safe
3	Purnia	Baisi	Alluvium	20463	0	20463	6622.20	4146.66	374.84	226.07	4747.57	71.69	Semi-Critical
4	Purnia	Banmankhi	Alluvium	36884	0	36884	10910.59	4404.81	678.36	265.61	5348.78	49.02	Safe
5	Purnia	Baraharakothi	Alluvium	22971	0	22971	8075.32	2457.70	344.04	140.09	2941.83	36.43	Safe

Latest status of Ground Water in Bihar as reported CGWB						
Sl. No.	District	Blocks	Safe	Category Station		
				Semi Critical	Critical	Over Exploited
1	Araria	9	9/9	-	-	-
2	Arwal	6	6/6	-	-	-
3	Aurangabad	11	11/11	-	-	-
4	Banka	11	11/11	-	-	-
5	Begusarai	18	15/18	-	-	-
		Bhagwanpur	-	-	Critical	-
		Khudawanpur	-	Semi Critical	-	-
		Nawkothi	-	-	Critical	-
6	Bhabhua	11	11/11	-	-	-
7	Bhagalpur	16	16/16	-	-	-
8	Bhojpur	14	8/14	-	-	-
		Arrah	-	Semi Critical	-	-
		Behea	-	-	Critical	-
		Jagdishpur	-	Semi Critical	-	-
		Koilbar	-	-	Critical	-
		Piro	-	Semi Critical	-	-
		Shahpur	-	Semi Critical	-	-
9	Buxar	11	9/11	-	-	-
		Chaungai	-	Semi Critical	-	-
		Siamri	-	Semi Critical	-	-
10	Darbhanga	18	18/18	-	-	-
11	East Champaran	27	26/27	-	-	-
		Madhuban	-	Semi Critical	-	-
12	Gaya	24	15/24	-	-	-
		Belaganj	-	Semi Critical	-	-
		Bodhgaya	-	Semi Critical	-	-
		Dumaria	-	-	Critical	-
		Gaya Sadar	-	Semi Critical	-	-
		Imamganj	-	-	-	Over Exploited
		Khizirsarai	-	Semi Critical	-	-
		Donch	-	Semi Critical	-	-
		Manpur	-	-	-	Over Exploited
		Tekari	-	Semi Critical	-	-
13	Gopalganj	14	5/14	-	-	-
		Barauli	-	Semi Critical	-	-
		Bijaipur	-	-	-	Over Exploited
		Bhore	-	Semi Critical	-	-

		Hathwa	-	Semi Critical	-	-
		Kateyan	-	Semi Critical	-	-
		Manjha	-	Semi Critical	-	-
		Panchdeori	-	Semi Critical	-	-
		Thawe	-	-	-	Over Exploited
		Uchkagaon	-	-	-	Over Exploited
14	Jamui	10	10/10	-	-	-
15	Jehanabad	7	0/7	-	-	-
		Ghosi	-	-	Critical	-
		Hulasganj	-	Semi Critical	-	-
		Jehanabad	-	-	Critical	-
		Kako	-	-	Critical	-
		Modanganj	-	Semi Critical	-	-
		Makhdumpur	-	Semi Critical	-	-
		RatniFaridpur	-	-	-	Over Exploited
16	Katihar	16	8/16	-	-	-
		Azamnagar	-	Semi Critical	-	-
		Balrampur	-	Semi Critical	-	-
		Barsoi	-	Semi Critical	-	-
		Dandkhora	-	-	Critical	-
		Dedwa	-	Semi Critical	-	-
		Kursela	-	Semi Critical	-	-
		Mansahi	-	Semi Critical	-	-
		Samili	-	Semi Critical	-	-
17	Khagaria	7	7/7	-	-	-
18	Kishanganj	7	7/7	-	-	-
19	Lakhisarai	7	7/7	-	-	-
20	Madhepura	13	7/13	-	-	-
		Bihariganj	-	Semi Critical	-	-
		Gamaharia	-	Semi Critical	-	-
		Gwalpara	-	Semi Critical	-	-
		Shankarpur	-	Semi Critical	-	-
		Singheswar	-	Semi Critical	-	-
		UdaKishanganj	-	Semi Critical	-	-
21	Madhubani	21	21/21	-	-	-
22	Munger	9	9/9	-	-	-
23	Muzaffarpur	16	10/16	-	-	-
		Bochaha	-	Semi Critical	-	-
		Kurhani	-	Semi Critical	-	-
		Minapur	-	Semi Critical	-	-
		Moraul (Dhoili)	-	Semi Critical	-	-
		Mushari	-	-	-	Over Exploited
		Sakra	-	-	-	Over Exploited

24	Nalanda	20	9/20	-	-	-
		Asthawan	-	-	Critical	-
		Ben	-	Semi Critical	-	-
		Bind	-	-	Critical	-
		Giriak	-	-	-	Over Exploited
		Harnaut	-	Semi Critical	-	-
		Islampur	-	Semi Critical	-	-
		KaraiParsurai	-	-	Critical	-
		Noorsarai	-	Semi Critical	-	-
		Pawapuri	-	Semi Critical	-	-
		Rahui	-	Semi Critical	-	-
		Rajgir	-	-	Critical	-
25	Nawada	14	11/14	-	-	-
		Meskaur	-	-	Critical	-
		Nawada	-	Semi Critical	-	-
		Roh	-	Semi Critical	-	-
26	Patna	23	15/23	-	-	-
		Athmalgola	-	-	-	Over Exploited
		Belchi	-	Semi Critical	-	-
		Khusrupur	-	Semi Critical	-	-
		Masuarih	-	Semi Critical	-	-
		Patna Sadar	-	-	Critical	-
		Phulwarisharif	-	-	-	Over Exploited
		Punpur	-	-	Critical	-
		Sampatchak	-	-	Critical	-
27	Purnia	14	11/14	-	-	-
		Amaur	-	Semi Critical	-	-
		Baisi	-	Semi Critical	-	-
		Dagaura	-	Semi Critical	-	-
28	Rohtas	19	19/19	-	-	-
29	Saharsa	10	10/10	-	-	-
30	Samastipur	20	19/20	-	-	-
		Ujiarpur	-	Semi Critical	-	-
31	Saran	20	16/20	-	-	-
		Garkha	-	Semi Critical	-	-
		Lahladpur	-	Semi Critical	-	-
		Manjhi	-	Semi Critical	-	-
		Nagra	-	-	Critical	-
32	Saikhpura	6	6/6	-	-	-
33	Sheohar	5	5/5	-	-	-
34	Sitamarhi	17	16/17	-	-	-
		Bajpatti	-	Semi Critical	-	-
35	Siwan	19	13/19	-	-	-
		Basantpur	-	Semi Critical	-	-

		Daraunda	-	Semi Critical	-	-
		Guthani	-	Semi Critical	-	-
		Sussainganj	-	Semi Critical	-	-
		Jeradei	-	Semi Critical	-	-
		Siswan	-	Semi Critical	-	-
36	Supaul	11	11/11	-	-	-
37	Vaishali	16	8/16	-	-	-
		Bhagwanpur	-	Semi Critical	-	-
		Chehra Kala	-	Semi Critical	-	-
		Hazipur	-	Semi Critical	-	-
		Jandaha	-	Semi Critical	-	-
		Lalganj	-	Semi Critical	-	-
		Patepur	-	-	-	Over Exploited
		Premraj/Desri	-	Semi Critical	-	-
		Rajapakar	-	Semi Critical	-	-
38	West Champaran	18	18/18	-	-	-
	Total	**535**	**433**	**72**	**18**	**12**

Annexure-4

Department of Environment, Forest and Climate Change
Physical & Financial Target of Agriculture Road Map 2017-18 to 2021-22

Sl.	Type of Land	Item	Area	Year 2017-18			Year 2018-19			Year 2019-20			Year 2020-21			Year 2021-22			Year 2017-22 ConsolidatedTarget		
			Unit	Area	No. of Plants (in Lakh)	Fin. Target (Rs. in Lakh)	Area	No. of Plants (in Lakh)	Fin. Target (Rs. in Lakh)	Area	No. of Plants (in Lakh)	Fin. Target (Rs. in Lakh)	Area	No. of Plants (in Lakh)	Fin. Target (Rs. in Lakh)	Area	No. of Plants (in Lakh)	Fin. Target (Rs. in Lakh)	Area	No. of Plants (in Lakh)	Fin. Target (Rs. in Lakh)
1	Forest land	Rehabilitation of Degraded Forest *	Ha	20000	186.4	24201	20000	186.4	24004	20000	163.9	21565	20000	163.9	21565	20000	146.4	19080	100000	847	110415
2	Plantation on govt. land outside the forest	River embankment	K.M	350	3.5	2499	300	3	2142	300	3	2142	300	3	2142	250	2.5	1785	1500	15	10710
		Canal embankment	K.M	1300	13	10595	1300	13	10595	1200	12	9780	1200	12	9780	1000	10	8150	6000	60	48900
		RCD roads	K.M	1000	10	3950	1000	10	3950	800	8	3160	600	6	2370	400	4	1580	3800	38	15010
3	Degraded, Wasteland & Urban Land	Urban & Institution Plantation	Ha	2050	4.1	1932.16	2050	4.1	1932.16	1975	3.95	1601.38	1975	3.95	1601.38	1950	3.9	1491.12	10000	20	8558.2
		Park Development	Park	43	&	3500	32	&	2500	22	&	2000	12	&	1500	11	&	1000	120	&	10500
4	Wet Land area	Wet Land conservation & Dev.	Wet Land area Dev.	&	&	1500	&	&	1500		&	1000	&	&	1000	&	&	500	&	&	5500
5	Farmers Land	Agro-forestry	Ha	113000	169.5	4068	67000	100.5	2412	60000	90	2160	60000	90	2160	53333	80	1920	353333	530	12720
		Total			386.5	52245.16		317	49035.16		280.85	43408.38		278.85	42118.38		246.8	35506.12		1510	222313.2
6	Development of Nursery			&	234.5	4374.4	&	229.5	4250.8	&	229.5	4250.8	&	229.5	4250.8	&	219.5	4092.4	&	1142.5	21219.2
		Gross Total				56619.56			53285.96			47659.18			46369.18			39598.52			243532.4

*Soil and Moisture conservation, Weeds control, development of grassland and Bamboo plantation

Annexure-5

Urban Development and Housing Department, Report of BiharPolluted River Stretches in the State of Bihar and Status of Municipal Solid Waste Management (MSW)																		
S.No	Action Point	Characterization of Municipal Waste (Quantity)					Terms	Total No. of Wards	No. of Wards with Door to Door Collection	Gap in Door to Door Collection	No. of Wards started Segregation at source	Gap in Segregation at Source	No. of Sites in which Composting Started	Action Taken	Project completion date as per plan	Amentment in timeline, If any	Total Cost in Lakh
		Biodegradable Others	Recyclables	Non Biodegradables	Inert Waste	Total											
I	**Ganga River: (Category-V)**																
1	Patna Municipal Corporation					900	Ongoing	75	75	0	0	75	0	SWM DPR has been approved from MoHUA, Govt. of India and 50% central share fund also has been released on dated 11th April, 2019.	Target of Project Execution to be completed by June, 2020	-	19908.67
2	Chhapra Municipal Corporation	47.4	19	19	9.5	94.9	Ongoing	45	45	0	0	45	1		Target of Project Execution to be completed by June, 2020	-	1937.5
3	Munger Municipal Corporation	42.7	17.1	17.1	8.5	85.4	Ongoing	45	45	0	40	5	1 (Also through Windrow and Bio Composter in 10 wards)		Target of Project Execution to be completed by March, 2020	-	1953.69
4	Begusarai Municipal Corporation	72	28.8	28.8	14.4	144	Ongoing	45	45	0	10	35	1		Target of Project Execution to be completed by June, 2020	-	3142.57
5	Barh Municipal Council					4.76	Ongoing	27	27	0	0	27	0		Target of Project Execution to be completed by June, 2020	-	643.73
6	Hajipur Municipal Council					76.79	Ongoing	39	39	0	0	39	0		Target of Project Execution to be completed by June, 2020	-	1363.7
7	Mokama Municipal Council	13.3	5.3	5.3	2.7	26.6	Ongoing	28	28	0	0	28	0		Target of Project Execution to be completed by June, 2020	-	583.27
8	Bakhiyarpur Municipal Council	10.9	4.4	4.4	2.2	21.9	Ongoing	27	27	0	0	27	0		Target of Project Execution to be completed by June, 2020	-	509.55
9	Buxar Municipal Council	28.8	11.5	11.5	5.8	57.6	Ongoing	34	34	0	0	34	0		Target of Project Execution to be completed by June, 2020	-	1130.16
10	Khagariya Municipal Council	11.23	4.5	4.5	2.25	22.48	Ongoing	26	26	0	0	26	0		Target of Project Execution to be completed by June, 2020	-	496.5
11	Jamalpur Municipal Council	27.3	10.9	10.9	5.5	54.6	Ongoing	36	36	0	0	36	0		Target of Project Execution to be completed by June, 2020	-	1094.86
12	Sultanganj Municipal Council					24.07	Ongoing	25	25	0	0	25	0		Target of Project Execution to be completed by June, 2020	-	535.71
13	Teghra Nagar Panchayat	12.8	5.1	5.1	2.6	25.6	Ongoing	25	25	0	0	25	0		Target of Project Execution to be completed by June, 2020	-	527.23
14	Maner Nagar Panchayat	9.1	3.6	3.6	1.8	18.1	Ongoing	19	19	0	0	19	0		Target of Project Execution to be completed by June, 2020	-	400.17
15	Barahiya Nagar Panchayat	9.81	3.92	3.92	1.96	19.61	Ongoing	24	15	9	15	9	0		Target of Project Execution to be completed by June, 2020	-	431.07
16	Manihari Nagar Panchayat					12.12	Ongoing	15	15	0	5	10	0		Target of Project Execution to be completed by June, 2020	-	274.47
17	Sonepur Nagar Panchayat	8.6	3.4	3.4	1.7	17.1	Ongoing	21	21	0	0	21	0		Target of Project Execution to be completed by June, 2020	-	389.17
18	Naugachhiya Nagar Panchayat	12.79	5.12	5.12	2.56	25.59	Ongoing	23	23	0	10	13	1		Target of Project Execution to be completed by June, 2020	-	479.31
19	Danapur Nagar Parishad	47.4	19	19	9.5	94.9	Ongoing	40	40	0	0	40	0		Target of Project Execution to be completed by June, 2020	-	1877.76
20	Kahalgaon Nagar Panchayat	7.7	3.1	3.1	1.5	15.4	Ongoing	17	17	0	2	15	1		Target of Project Execution to be completed by June, 2020	-	365.39
21	Dighwara Nagar Panchayat	7.22	2.89	2.89	1.44	14.44	Ongoing	18	18	0	18	0	1 (Mechanical Composting)		Target of Project Execution to be completed by June, 2020	-	299.97
22	Bhagalpur Municipal Corporation					234	Ongoing	51	51	0	0	51	0		Target of Project Execution to be completed by June, 2020	-	3862.36
	Total	369.05	147.63	147.63	73.91	1989.96	0	705	696	9	100	605	4				
II	**Punpun River:- (Category-V)**																

2	Fatuha Nagar Parishad					27	Ongoing	27	27	0	0	27	0	SWM DPR has been approved from MoHUA, Govt. of India and 50% central share fund also has been released on dated 11th April, 2019.	Target of Project Execution to be completed by June, 2020	-	483.42
III	Ramrekha River:- (Category-V)																
1.	Hunnagar (Ramnagar) Nagar Panchayat						Proposed project	23	23	0	0	23	0	SWM DPR is in under preparation and to be prepared by March, 2020	Target of Project Execution to be completed by June, 2020.	-	-
IV	Sikrahna River:- (Category-V)																
2	Narkatiaganj Nagar Parishad						Ongoing	25	25	0	0	25	0	SWM DPR has been approved from MoHUA, Govt. of India	Target of Project Execution to be completed by June, 2020		482.04
V	Parmar River:- (Category-V)																
1	Jogbani Nagar Panchayat						Proposed project	19	19	0	0	19	0	SWM DPR is in under preparation and to be prepared by March, 2020	Target of Project Execution to be completed by June, 2020.	-	-
VI	Sirsia River:- (Category-III)																
1	Raxual Nagar Parishad						Ongoing	25	25	0	0	25	0	DPR submitted to MoHUA, Govt. of India dated 19.11.2018.	Target of Project Execution to be completed by March, 2020	-	532.93

Annexure-6

STATE LEVEL WATER TESTING LABORATORY (SLWTL)

PHED, GOVT. OF BIHAR, CHHAJJUBAGH, PATNA-800001

Technical Consultancy by: Scientific Research Laboratory, 90, Lake East (4thRoad), Santoshpur, Jadavpur, Kolkata-700075

TEST CERTIFICATE

Report No: SLWTL/2019/GW - 26931 - 26934

Name of the Organisation: Departmental

Date of Sampling: 26.12.2019

River Name: Ram Rekha

Source of Sample: Drinking Water

Date of Reporting: 03.01.2020

Sample Collected By: SLWTL

Sample Received on: 27.12.2019

PHYSICO-CHEMICAL & BACTERIOLOGICAL TEST REPORT

Sl No	District Name	Block Name	Panchayet Name	Village Name	Habitation Name	Location Details	Physico - Chemical and Bacteriological Parameters														
							pH	Turb.	EC	TDS	TH	Ca	Mg	Cl	Alka.	Fe	NO_3	SO_4	F	As	Mn	T.Coli
						Unit	-	*NTU*	*µmho/cm*	*mg/l*	*mg/l*	*mg/l*	*mg/l*	*mg/l*	*mg/l*	*mg/l*	*mg/l*	*mg/l*	*mg/l*	*mg/l*	*mg/l*	*MPN/100ml*
						*Desirable Limit**	*6.5-8.5*	*1.00*	-	*500*	*200*	*75.00*	*30.00*	*250.00*	*200*	*1.00*	*45.00*	*200.00*	*1.00*	*0.010*	*0.10*	-
						Permissible Limit in absence of alternate source*	*NR*	*5.00*	-	*2000*	*600*	*200.00*	*100.00*	*1000.00*	*600*	*NR*	*NR*	*400.00*	*1.50*	*NR*	*0.30*	**
1	West Champaran	Ramnagar	Nagar Panchayat	Chhat Ghat	Ward No-08	Sundar Chawk	6.94	2.0	612	524	316	67.52	25.62	64.35	278	0.54	2.68	24.36	0.34	BDL	BDL	Absent
2	West Champaran	Ramnagar	Nagar Panchayat	Thana Campus	Thana Campus	Thana Campus	7.10	1.0	487	345	296	34.68	12.34	38.24	274	0.35	1.68	14.26	0.26	BDL	BDL	Absent
3	West Champaran	Ramnagar	Nagar Panchayat	Chhat Ghat	Ward No-08	Bhagat Singh Chawk	7.20	1.0	534	368	236	42.65	18.46	51.39	204	0.39	2.46	19.64	0.31	BDL	BDL	Absent
4	West Champaran	Ramnagar	Nagar Panchayat	Nagar Panchayat	Ward No-08	Anganwari	6.89	1.0	600	422	368	61.90	19.64	24.35	314	0.34	2.34	23.30	0.64	BDL	BDL	Absent

Note * (i) Drinking Water Specification Second Revision -IS:10500:2012., (ii) All the testing methods are taken from APHA 22nd Edition 2012., (iii) BDL means Below Detection Limit., (iv) NR means no relaxation. (v) ** Shall not be detectable in any 100 ml sample

Copy forwarded for kind information to:

(i) Consultant Water Quality Cell , PHED, Govt. of Bihar, (ii) Director, Water Quality Cell, PHED, Govt. of Bihar, (iii) Engineer-in-Chief cum Special Secretary, PHED, Govt. of Bihar

The results are reported based on the materials received. Sample will be destroyed after 15 days from the date of issue of the certificate unless otherwise specified. Sample will be preserved according to standard method. The test report shall not be reproduced except in full, without the written permission of Laboratory.

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Signature of the Lab Incharge