BEFORE THE NATIONAL GREEN TRIBUNAL

PRINCIPAL BENCH, NEW DELHI

ORIGINAL APPLICATION NO. 200 of 2014

(C.W.P. No. 3727 of 1985)

IN THE MATTER OF

M.C. Mehta vs. Union of India & ors.

SUBMISSIONS

Dated 18.09.2023

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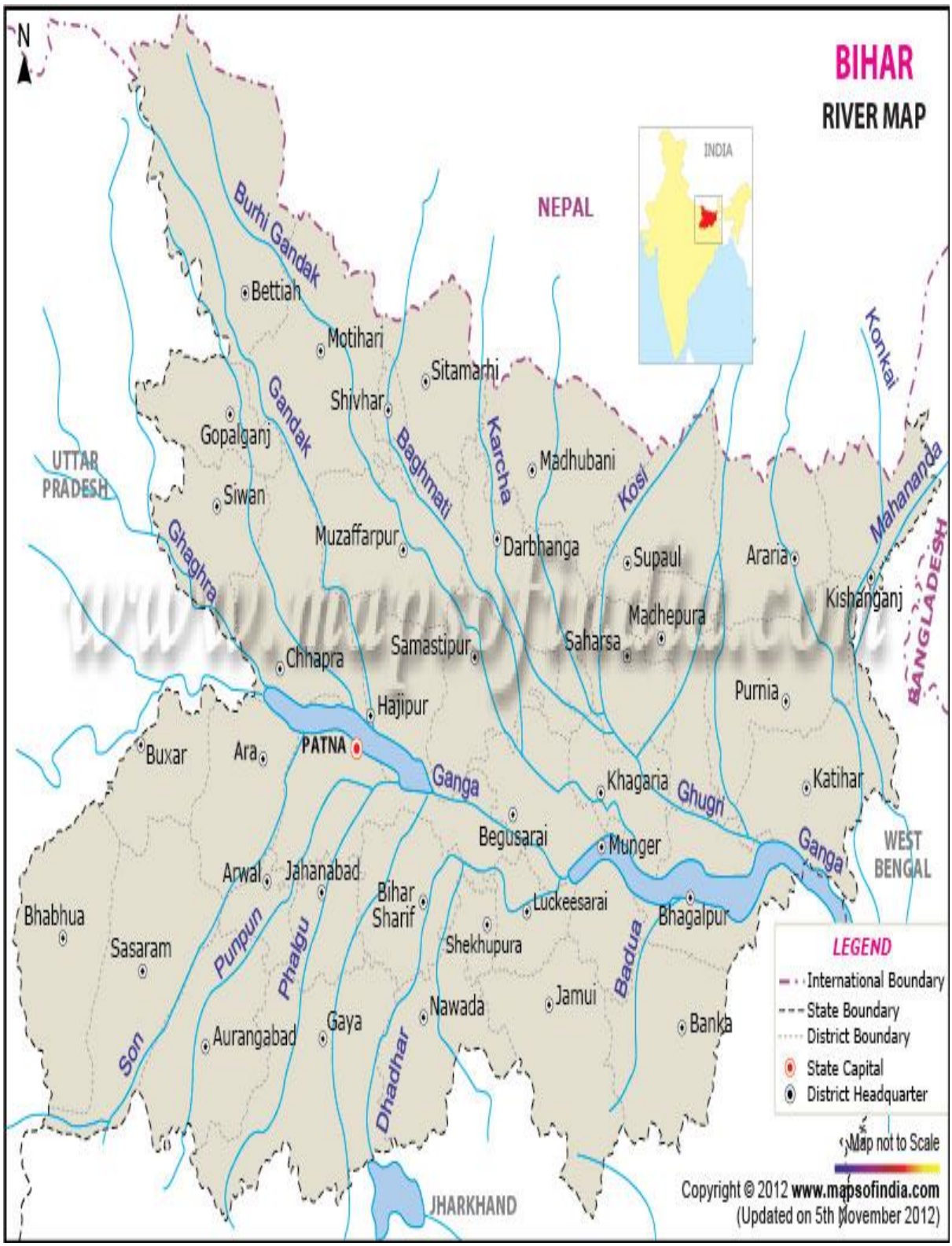
Ganga Basin Map



GANGA RIVER AND ITS TRIBUTARIES (District wise)

S.No	River	Origin/ confluence	Districts
1.	Ganga. R (Tributaries- Ghaghra, Gandak, burhi-Gandak, Kosi, Mahananda, and Karmnasa, sone, Punpun, kiul-Harohar, Badua, Chandan)	Gantotri, Uttarakhand	i. Buxar ii. Bhojpur iii. Saran/ Chhapra iv. Patna v. Vaishali vi. Samastipur vii. Begusarai viii. Lakhisarai ix. Munger x. Khagaria xi. Bhagalpur xii. Katihar
2.	Gandak. R (Narayani) (Tributaries- Bhabsa, Harha, Kakra)	Tibet Confluence- near Patna downstream	West champaran, East champaran, Gopalganj, Muzaffarpur, , Saran, and Vaishali
3.	Bhagmati. R (Tributaries- Lakhandei, Darbhanga Bagmati, old Kamla and Lalbakeya, Hasanpur bagmati)	Nepal Confluence- meets Kosi at Badlaghat	Sitamarhi, Muzaffarpur, Darbhanga and Samastipur
4.	Kosi. R (Tributaries- Fariani Dhar, Dhemana dhar and Bagmati, Kamla balan, Bhutahi balan, trijugi)	Nepal Confluence- Kursela, Katihar	Sapaul, saharsa, Madhepura, Khagaria, Purnia, Bhagalpur, Katihar
5.	Sone. R (Tributaries- Rihand and North Koel, Bansagar dam)	Amarkantak (MP) Confluence- Maner	Rohtas, Aurangabad, Arwal, Bhojpur, Patna, Saran
6.	Karamnasa. R (Tributaries- Dharmawati, Gopai, Durgawati, Chandraprabha, Karunuti, Khajuri)	Kaimur	Kaimur and Buxar
7.	Punpun. R (Tributaries- Morhar, Dordha, Butane, Madar and Dhowa)	Palamu (Jharkhand) Confluence- Fatuha	Chatra (JK), Aurangabad, Gaya, Patna

S.No	River	Origin/ confluence	Districts
8.	Ghaghra/ Saryu. R (Tributaries- Little Gandaki, Sondhi Nala, Jharahi and Daha)	Tibet Confluence- Chhapra	Gopalganj, Saran (chhapra), Siwan.
9.	Burhi Gandak. R (Tributaries- Masan, Balor, Pandai, Sikta, balan, Tilawe, Tiur and Dhanauti, Kohra, Ramrakha, Sirisa, Bagmati)	Chanpatia (Bihar) Confluence- Khagaria	West Champaran, East Champaran, Muzaffarpur, Samstipur, Khagaria and Begusarai.
10.	Kamla. R (Tributaries- Sugarave, Dhauri, Soni, Balan, Trisula)	Nepal	Madhubani
11.	Phalgu. R (Niranjana) (Tributaries- Mohane)	Originates after confluence (Bodh gaya) with Mohana River (Hazaribagh District)	Gaya
12.	Kuil- Harohar. R (Tributaries- Sakari, falgu, Mohane Paimar, Panchane and Harohar)	Khajuri (Jharkhand)	Lakhisarai, Sheikhpura and Jamui
13.	Thora. R	Dhuan Kund at Kaimur Plateau	Rohtas, Bhojpur, Buxar,
14.	Mahananda. R (Tributaries- Donk Balason, Ratwa, Mechi, Eastern Kankai, western Kankai, Parman)	Sikkim Confluence- Nawabganj, Bangladesh	Kishanganj, Purnia, Katihar
15.	Badua (Tributaries- Belharna, Gobra Nala, Chanan, Barne nala, Kamjori)	Chakia Plateau	Muger, Bhagalpur
16.	Chandan. R (Tributaries- Orhni ,Kudar and Chatri)	Deoghar hills	Bhagalpur

(source- https://beams.fmiscwrdbihar.gov.in/glance/glancemaster.aspx)

NUMBER OF POLLUTED RIVER STRETCHES IN BIHAR, CPCB REPORT, 2022

S.No	River	Polluted river stretches	BOD	Priority class
1.	Bagmati	Along Sirnia	3.6	V
2.	Burhi Gandak/ Sikrahna	Narkatiaganj to Pakridayal	10.0	IV
3.	Daha	Gopalganj to Siwan	10.0	IV
4.	Dhous	Along Madhuvapur	5.6	V
5.	Gandak	Along Rewaghat	3.8	V
6.	Ganga	Along Buxar, Patna, Fatwah, Bhagalpur	7.9	IV
7.	Gangi	Ara	8.0	IV
8.	Ghaghra	Along Revelganj	3.6	V
9.	Harbora	Along Narkatiaganj	8.0	IV
10.	Kamala	Along Darbhanga	5.0	V
11.	Kohra	Along Manjhaulia	8.0	IV
12.	Lakhandei	Along Sitamarhi	11.0	III
13.	Manusmar	Along Sitamarhi	6.0	V
14.	Parmar	Along Jogbani	3.4	V
15.	Punpun	Along Punpun	10.0	IV
16.	Ramrekha	Harinagar	12.0	III
17.	Sirsiya	Raxaul	30.0	II
18.	Sone	Koelwar	4.0	V

****Number of PRS in 2018 was 6 which increased to 18 in 2022**

LIST OF DRAINS (TOWN WISE IN EACH BASIN)

River	Towns & Number of drains
Ganga	1.Patna A. (Phulwarishariff)- 20 2. Maner- 3 nallas 3. Danapur- 1 nalla 4. Bakhtiyarpur- 1 nalla 5. Barh- 7 nallas 6. Mokama – 4 nallas 7. Munger- 1 nalla 8. Sultanganj- 7 drains 9. Bhagalpur- 15 nallas 10. Buxar- 7 nallas 11. Barahiya- 4 nallas 12. Jamalpur- 4 drains 13. Kahalgaon- 6 nalla 14. Chhapra- 1 drain 15. Sonepur- 7 drain 16. Hajipur- 1 drain 17. Begusarai- 1 nalla 18. Khagaria- 2 drains 19. Naugachhiya- 15 20. Dighwara- 8 drains 21. Teghra- 1 drain 22. Manihari- 3 drains
Punpun	Patna- 1 (Badshah drian) Fatuha- 7 nallas
Ramrekha	Harinagar (Ramnagar) 5 drains
Sirsia	Raxaul 3 drains
Sikrahna	Narjatiaganj 3 drains
Parmar	4 drains namely Khajurbari Drain, Ward No.6, Haji Mohalla Drain, Idgah Chowk Drain, Isalmpur Drain, Ward No.-17.
Sone	Dehri- 2 main drains (total 8 existing drains)
	Arwal- 7 major drains

River	Towns & Number of drains
	Daudnagar
Burhi Gandak	Muzaffarpur- 12 drains Samastipur- 2 major drains Motihari
Kosi	Supaul- 4 drains Saharsa Madhepura
Baghmati	Darbhanga- 9 major drains (falling into Bahmati and kamla rivers)
Gandak	Gopalganj- 2 Bagaha- 9 drains (falling into river Gandak, haraha and gagaha nalla)
Mahananda	Kishanganj
	Lakhisarai Jamui

STP

S.No	Location	Installed Capacity	Work capacity
a)	Beur	35 MLD	20 MLD
b)	Saidpur	45 MLD	25 MLD
c)	Pahari	25 MLD	17 MLD
d)	Karmalichak	4 MLD	02 MLD
e)	Bhagalpur	11 MLD	10 MLD
f)	Chhapra	02 MLD	Not operational

INDUSTRIAL PROFILE OF THE GANGA RIVER BASIN

Industries - Sponge Iron, Oil Refinery, Forging, Fertilisers, Jelly Filled Communication Cables, Watch Factory, Food Processing, Dairy, Bulk Drugs are the major products of industries concentrated in Bihar.

Energy- Thermal power and hydel power plants

Fibers - silk (particularly from the Bhagalpur region in the East, producers of a distinct quality of silk, namely, tussar or tussah); and jute, transported to factories located mostly near Calcutta for easy export of the finished material.

Forest Products - hard wood timber, saal and sakhua from the north; also cane for weaving, particularly from the swamps in West Champaran district of North Bihar.

Leather Industry- According to a recent survey conducted by Central Leather Research Institute (CLRI), Chennai, Bihar annually produces 2.64 million bovine hides and 5.09 million bovine skins. The state is known for best quality goat skins, cow hides and buffalo's calf skins. Goat skins are smaller in size and the best material to produce glazed kid leather products, which are mostly exported. There are seven main markets for hides and skins in the state- Patna, Ara, Aurangabad, Munger, Muzaffarpur, Katihar (Pabai) and Purnea.

Agriculture- The principal commercial products of Bihar inn crops are rice, wheat, lentils, maize (corn), sugar cane and for fruits, it is mangoes, bananas, jack-fruit, and litchis.
(source:https://dcmsme.gov.in/old/dips/state_wise_profile_16-17/Bihar%20 %20State%20Profile.pdf)
The *Bihar Industrial Area Development Authority* (BIADA) is a statutory body constituted under the Bihar Industrial Area Development Act, of 1974. Its objective is to promote and develop industrial areas in the state of Bihar.
There are 74 Industrial Areas (IA) / Industrial Estates (IE) / Large Industrial Estates (LIE) / Growth Centres (GC) / Mega Industrial Parks (MIP) in Bihar under the aegis of 9 Cluster Offices spread over 31 Districts.

Some of the industrial estates are:

a) M/s Barauni Oil Refinery
b) M/s Indian Tobacco Company Ltd.
c) Industrial Growth Centre Begusarai
d) Industrial Area Barauni Begusarai,
e) Industrial Area Nawada,
f) Industrial Area Gaya
g) Industrial Area Patliputra Patna,
h) Industrial Area Fatuha Patna,
i) Industrial Area Muzaffarpur,

j) Industrial Estate Muzaffarpur,
k) Industrial Area Growth Centre, Giddha, Ara
l) The Bihar State Milk Cooperative Federation (COMFED)

Industries on tributaries/ River	Industry
Harbaura (Sikrahna)	2 GPI
Ramrekha	2 GPI (sugar mills)
Punpun	4 GPI (paper mills)

MAJOR THERMAL/ HYDEL POWER STATIONS

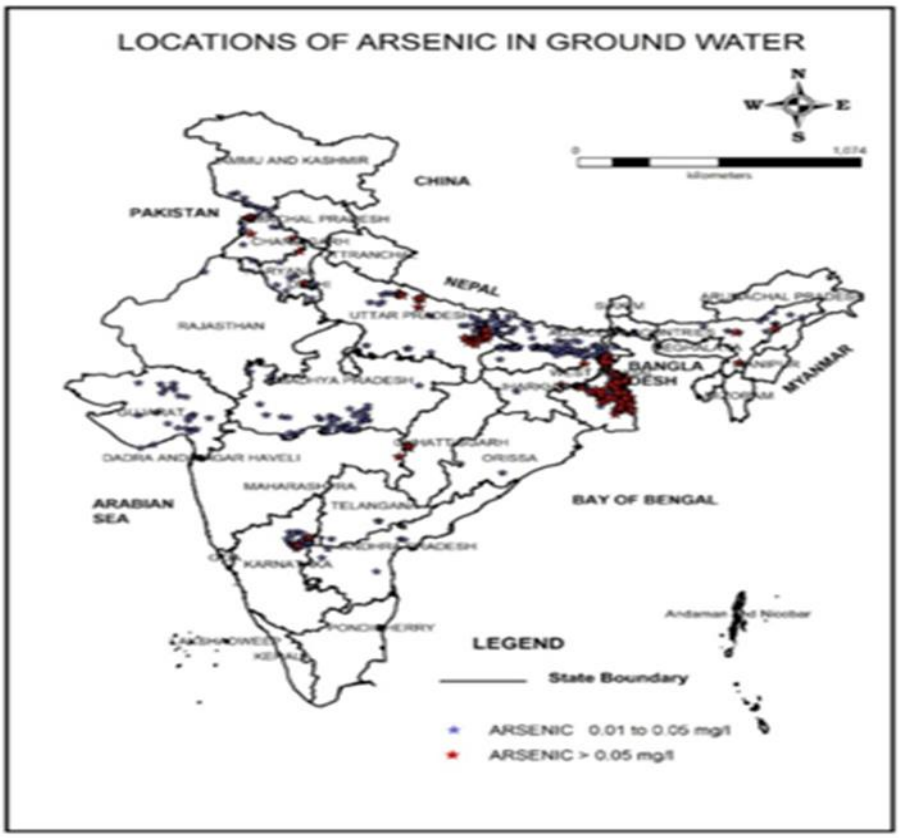
i. Barauni Thermal Power Station,
ii. Muzaffarpur Thermal Power Station,
iii. Kosi Hydel Power Project,
iv. Kahalgaon Super Thermal Power Project (NTPC)
v. M/s Barh Super Thermal Power Plant (NTPC)

STATUS OF GROUNDWATER CONTAMINATION IN BIHAR

Arsenic and Fluoride contamination

Way back in 1980, the Government was aware that eight districts of West Bengal and two districts of Chhattisgarh are severely affected with arsenic contamination in Ground water. Later, in 2002 the arsenic contamination was reported in Bhojpur and Patna districts of Bihar. The further investigations carried out during 2003-2004 and found that Groundwater of Bhojpur, Buxar, Paschimi Champaran, Purba Champaran, Sitamarchi, Madhubani, Supaul, Araria, Kishanganj Purnea & Katihar Districts of Bihar is contaminated with Arsenic, above the permissible limit. During 2004, the Sahibganj district of Jharkhand State also found Arsenic contaminated Groundwater.

(source- CPCB Groundwater Quality Series February, 2007, : Gwqs/ 09/2006-2007, https://cpcb.nic.in/openpdffile.php?id=UHVibGljYXRpb25GaWxlLzc3NF8xNTQ0NDI3NjQ3X0dXUVMtMS5wZGY=)



(Source- https://pmksy-mowr.nic.in/arsenic/)

As per the data available with Central Ground Water Board, Arsenic >10 µg/L(ppb) is found in ground water samples spreading over 153 Districts in parts of 21 States/UTs of India. However, most affected areas are middle, lower and deltaic parts of Ganga basin.

States Wise Number of Partly Affected Districts with different Contaminants in Ground Water, 2021:

State	Iron	Flouride	Nitrate	Arsenic	Lead
Bihar	19 districts	13 districts	10 districts	22 districts	
Jharkhand	6 districts	12 districts	11 districts	2 districts	1 district

(source- Ministry of Jal Shakti, Contamination of Ground Water Due to Arsenic and Fluoride,2021, https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1706657)

Bhojpur, Bhagalpur and Buxar are critically affected Arsenic contamination in Bihar. The number of Gall bladder cancer patients are rising in the State.

Reported Articles on Groundwater contamination in Bihar

I. Massive groundwater contamination in 31 of 38 districts in Bihar- Economic Survey

Mar 02, 2022, 10:46 AM IST

"The high concentration of arsenic, fluoride, and iron in groundwater in rural areas in 31 of 38 districts is posing a major health hazard. There is chemical contamination in groundwater in 30,272 rural wards. A total of 4,742 rural wards in 14 districts situated along the Ganga are particularly affected by arsenic contamination," the report said.

It said that drinking water sources in 3,791 rural wards in 11 districts are affected by fluoride contamination. There is presence of excess iron in nine Kosi basin districts, and a few areas in other districts.

The consumption of contaminated water causes skin, liver, kidney and other water-borne diseases.

The affected districts include Begusarai, Bhagalpur, Bhojpur, Buxar, Darbhanga, Katihar, Khagaria, Lakhisarai, Munger, Samastipur, Saran, Sitamarhi, Patna, Vaishali, Aurangabad, Banka, Bhagalpur, Gaya, Jamui, Kaimur, Munger, Nalanda, Rohtas, Sheikhpura, Nawada and Araria.

(Source-https://economictimes.indiatimes.com/news/india/massive-groundwater contamination -in-31-of-38-districts-in-bihar-economic survey /articles how /89938395 .cms? from= mdr)

II. Human Rights Commission seeks report from Bihar Govt on water contamination

06 Mar 2022, 01:02 PM IST

The National Human Rights Commission (NHRC) has taken suo motu cognizance of a report referring to the bad quality of water in Bihar. According to the Bihar Economic Survey 2021-22, in 31 of the 38 districts of the state, arsenic, fluoride, and excessive iron were found in the groundwater. The report pointed out that the groundwater in 30,272 rural wards is chemically contaminated, NHRC said.

KEY POLLUTION ISSUES

1. Groundwater contamination with Arsenic, Fluoride, Nitrate, Iron and Lead. Its causing lot of health issues (including cancer/ Gallbladder cancer) amongst people residing in the Gangetic belt.
2. Sewage being discharges into the river and tributaries- Sewage that includes domestic wastes, hospital wastes, industrial areas etc. Sewerage of rural and urban areas. STP for all major towns in the Ganga basin are required and the operation of the same must be monitored on regular basis. TC/ FC is reportedly very high in the main Ganga River (after Patna)
3. Illegal sand and stone mining- by use of heavy machinery results in damage to the river ecology, depletion of ground water, ecological damage to the aquatic species and migratory birds, erosion of river bank and flood plains, damage to infrastructural projects, loss of royalty and cess etc)
4. Flood plain encroachment and operation of brick kilns on the floodplains of River Ganga.
5. Conservation of aquatic species- Gangetic Dolphins, gharial, otters, turtles and several aquatic and terrestrial birds. Bank feature alteration due to land-use changes such as agriculture, construction activities and sand mining has disrupted the lateral connectivity of the river in the floodplain. Sandbar cultivation in the states of Bihar and Jharkhand has rendered the habitat unsuitable for use as nesting sites by turtles and island-nesting birds. These existing threats are furher heightened by the impacts of climate change and altered water quality, questioning the survival of the aquatic species. (source- https://nmcg.nic.in/pdf/Status%20report%2010%2005%202018_WII%20(1).pdf)
6. Industrial pollution- discharge of effluents in the tributaries of Ganga River and in the main stem itself. Detailed status report regarding quality assessment of effluents from all industrial area may be provided. Similarly, information on CETP performance report and timeline for establishment new CETP may also be furnished.
7. Plantation on both sides of the river
8. Biomedical waste disposal system- many big towns and cities like Patna, buxar, Bhagalpur etc have numerous health clinics and hospitals.
9. Hazardous waste disposal (Status from all Industries/ Industrial estates/ thermal power plants/ dairy/ leather units etc in the 38 districts of Bihar).

10. Municipal Solid waste disposal and legacy waste remediation.

11. Shifting of River Ganga from its original/ old course (noticed in districts like Patna)

The Synopsis is submitted accordingly for the kind perusal of the Hon'ble National Green Tribunal, Principal Bench, New Delhi.

New Delhi

Dated 18.09.2023

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