झारखण्ड
JSPCB

JHARKHAND STATE POLLUTION CONTROL BOARD

TOWNSHIP ADMINISTRATION BUILDING, HEC COMPLEX, DHURWA, RANCHI 834004
Telephone: 0651-2400850 (Fax)/ 2400851/2400852/2401847/2400979/240013

Ref. No....B.-2327 Ranchi, Dated...10/11/2022

From,

Y.K.Das,
Member Secretary

To,

The Member Secretary,
Central Pollution Control Board
Parivesh Bhawan, East Arjun Nagar,
New Delhi - 110032

Sub:- Submission of the Action Plan for Severally Polluted Areas (Ramgarh, Hazaribagh & Saraikela) located in Jharkhand: Regarding.

Sir,

With regard to the subject stated above, as directed, the **Action Plan for Severally Polluted Areas (Ramgarh, Hazaribagh & Saraikela) located in Jharkhand** has been prepared and enclosed, herewith for your reference and further action, please.

Thanking You

Yours sincerely

Encl.:- A/a

(Y.K.Das)
Member Secretary

Action Plan for Industrial Cluster in Severally Polluted Areas for Hazaribagh, Jharkhand

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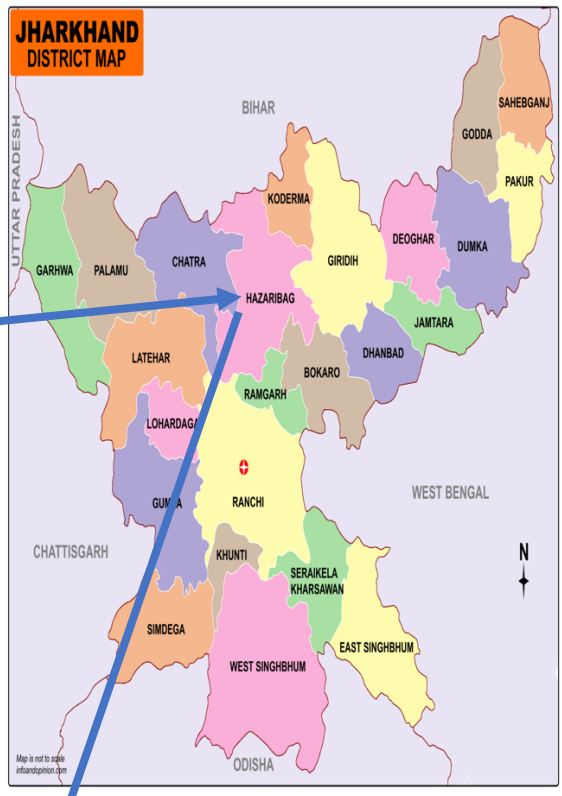

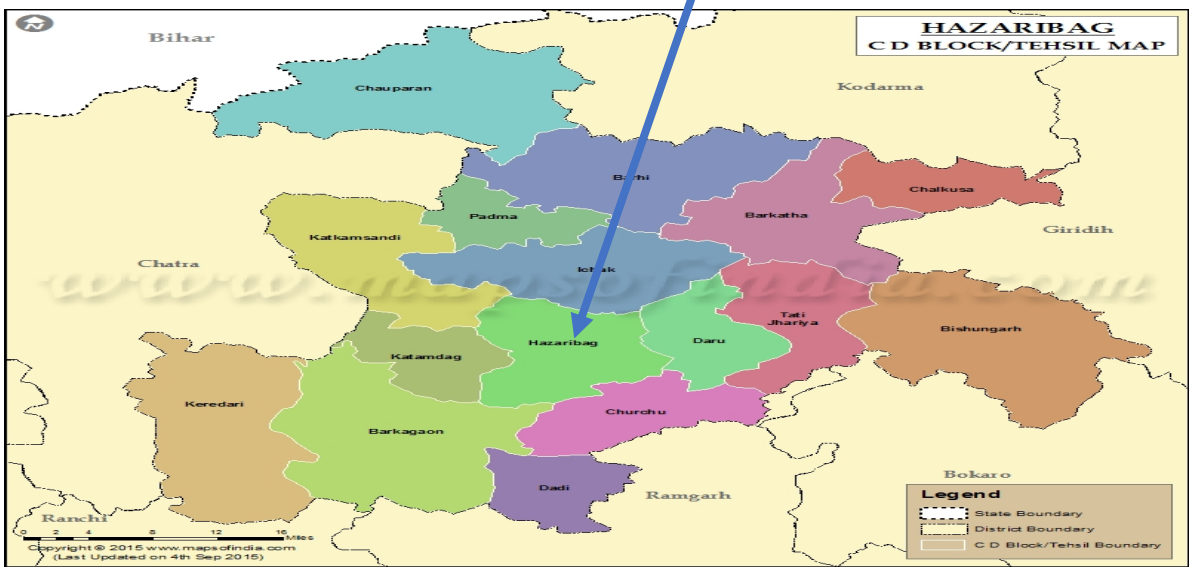

A.Preamble:

In 2009, the Ministry of Environment &Forests(MoEF), Govt. of India in association with Central Pollution Control Board (CPCB), New Delhi and Indian Institute of Technology (IIT), New Delhi have carried out an environmental assessment of industrial clusters across the country named Comprehensive Environmental Pollution Index (CEPI) with the aim of identifying polluted industrial clusters & prioritizing planning needs for intervention to improve the quality of environment in these industrial clusters and the nation as a whole. For this, CPCB has selected 88 industrial clusters in country out of which 43 Nos. of industrial clusters in 16 states.

The industrial clusters/areas having aggregated CEPI scores of 70 and above were considered critically polluted clusters/areas and those with scores above 60 were classified as Severely Polluted; further detailed investigations were carried out in terms of the extent of environmental damage and formulation of appropriate remedial action plan.

Again in year 2017-2018 CPCB carried out monitoring and found that, number of identified polluted areas in country went upto 100. The said number included 38 Critically Polluted (CEPI Score above 70), 31 Severely Polluted (CEPI Score between 60-70) and reaming 31 as Other Polluted (CEPI Score below 60). In identified 100 polluted areas Maharashtra having 4 Nos. of area namely Ramgarh (CEPI Score 67.64), Hazaribagh (CEPI Score 64.20), and Saraikela (CEPI Score 60.26),

The Board has prepared comprehensive action plan for Hazaribagh CEPI area (Morangi), which help to reduce CEPI score below 60.

B. Hazaribagh

1. **Area details including brief history (background information):**

The district of Hazaribag is situated in the north east part of North Chotanagpur Division. The boundary of this district consists of districts of Gaya (BIHAR) and Koderma in the north, Giridih and Bokaro in the east, Ramgarh in the south and Chatra in the west. The districts of Koderma, Chatra, Ramgarh and Giridih have been bifurcated from this district. The district of Hazaribag is situated in the north east part of North Chotanagpur Division.

The state JHARKHAND came into existence on 15th November 2000 as a 28th State of Union of India after being bifurcated from Bihar State, the Hazaribagh district is one of the 24 district of Jharkhand. The Hazaribagh district is situated on National Highway 33 & 96 km away from state's capital, Ranchi. The Geographical area of Hazaribagh District is 4302 sq. km. The climate is generally dry with average rainfall 1234.5 mm. The temperature varies between 180 to 42.20 . However due to global warming, the temperature goes high up to 440 .The district of Hazaribagh is a part of North Chotanagpur Plateau. This area is full of several plateaus, mountains and valleys, most part of district ara full of forest and stones. Hazaribagh district is surrounded by North- Gaya district of Bihar State and Koderma district, South- Ramgarh and Chatra district, East- Bokaro and Ramgarh district, West- Chatra district.

The district of Hazaribag is a part of Chotanagpur plateau. This area is full of several plateaus, mountains and valleys. There are three natural divisions of this district – Medium Plateau, Lower Plateau and Damodar Valley. The district headquarter is a part of medium plateau, which is situated at the height of about 2,000 ft from the sea level. Except the western part of the medium plateau, the whole area is surrounded by the lower plateau. The height of lower plateau is about 1,300 ft above the sea level.Damodar Valley is in the southern part of this district where Ramgarh town is situated which is about 1,000 ft below the districts headquarter.

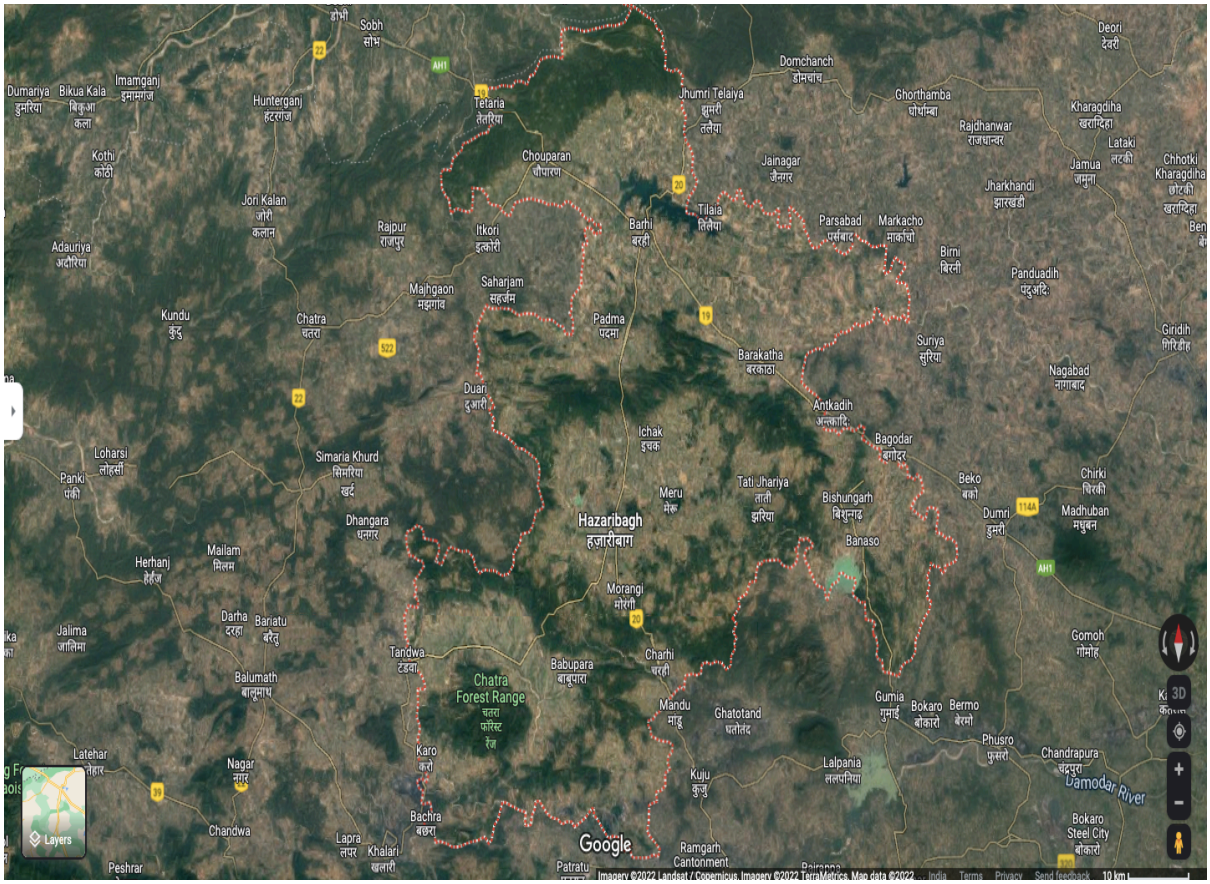

Image -1: Google Map of Hazaribagh District

2. Administrative Setup

The district lies in the North Chotanagpur Division. Hazaribagh district has two sub-division namely Hazaigabh & Barhi and 11 blocks namely Sadar, Hazaribagh, Katkamsandi, Bishnugarh, Barkagaon, Keredari, Ichak, Churchu, Daru, Tati Jhariya, Katkamdag and Dadi..

Hazaribagh comprises of 5 sub-divisional blocks Padma, Barhi, Chauparan, Barkatha and Chalkusha., and is spread over 257 Panchayats.

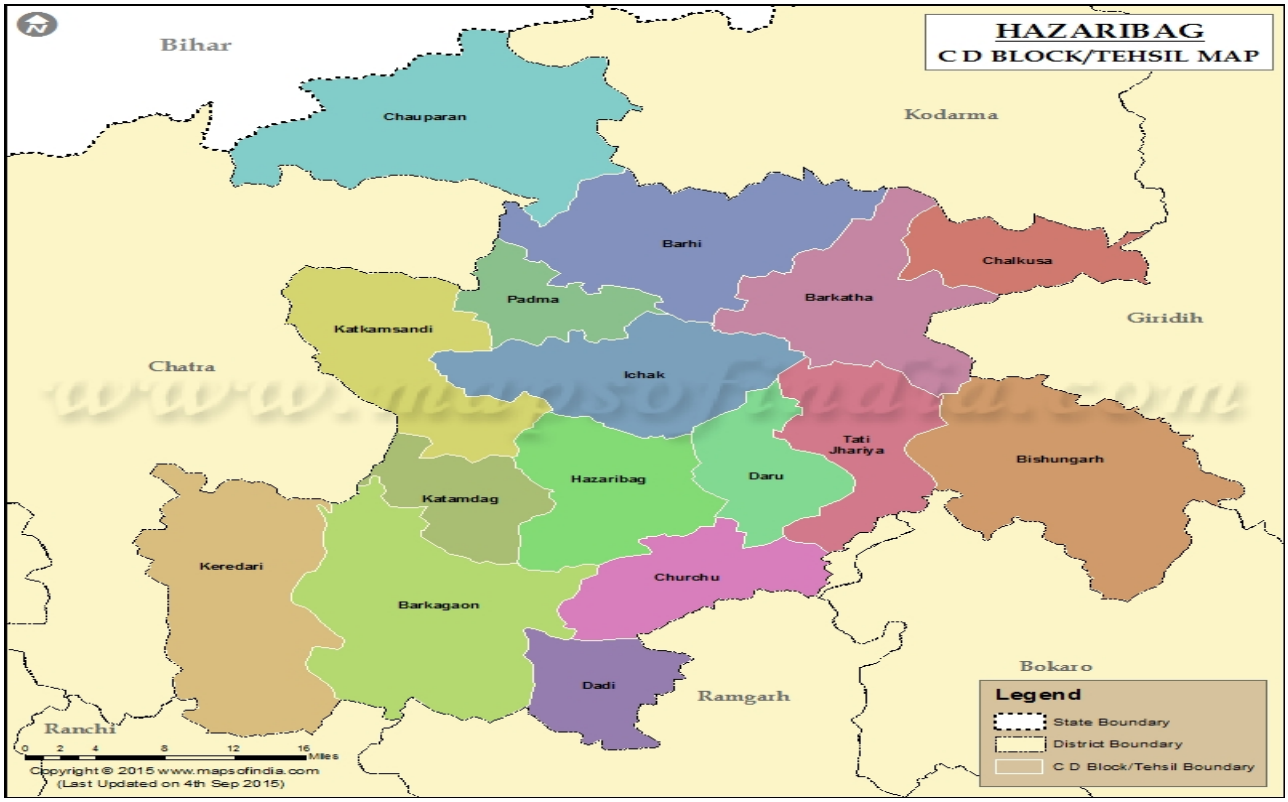

Image -2: Administrative Boundary Map of Saraikela Kharsan District

3. Physiography

The Latitude and Longitude of district is 23.5o -24.40 and 85.1o -85.90 respectively. The average altitude of Hazaribagh is 2012 feet above the sea level. The area forms part of the Chhotanagpur plateau. A broad spectrum of Archaean to Quaternary formations comprising crystalline, sedimentary and metamorphic rocks occur in the area. The unclassified metamorphic, gneissic complex and Proterozoic intrusive rocks suffered strong folding deformation and medium-grade metamorphism. Most of the faults and shear zones in the gneissic and metamorphic and Gondwanas are mainly E-W,NW-SE and NE-SW trending. The crystalines are foliated, lineated and jointed. The foliation is moderate to steeply dipping, with varied trends. The most dominant being E-W. Bedding preserved in Gondwana is horizontal or low dipping.

Unclassified metamorphics are represented by epidiorite, amphibolite, Hornblende schist /gneiss, Quartzite, felspathic/micaceous quartz schist, crystalline limestone, calcsilicate, phyllites and mica schist. Chhotanagpur granite gneiss is represented by biotite granite gneiss, migmatites augen gneiss, hornblende granite gneiss, and epidote granite gneiss The rocks have been profusely intruded by dolerites, metabolites, pegmatites, intrusive granite etc. Rocks of Gondwana Super Group present in

Hazaribagh and Ramgarh district are represented by boulder bed, sandstone, shale and coal seams. Broadly, the Geological formation found in the Hazaribagh District may be grouped into two chief divisions:

1. Pre-Cambrian comprising a great variety of Gneisses, Schists and Granites and occupying the greater portion of the District.
2. The Gondwana division having three important Coal Fields, namely, South Karanpura, North Karanpura and Ramgarh.

The district is a part of Pre-Cambrian Formation whose age goes back to 3500 Million Years of the early history of the earth. However, the belts of Coal Bearing Gondwana Formations evolved in a continental environment in Late carboniferous to Early Cretaceous Time. (290-150 Million Years). Both Exogenous and Endogenous processes act as agents in carving out landforms. The former includes destructive processes of weathering and erosion by several external agents. The Gondwana Basins were initiated in the late Carboniferous and developed down faulted half garden with a very thick pile of sediments.

4. Drainage System:

The district is drained by two major rivers, the Damodar and the Barakar with a few minor tributaries like Konar, Siwane, Keso, Barsot, Chandwara etc. These rivers are annual and rain fed. The general flow direction is South East to East. It is structurally controlled in the coalfield area and in general has sub-dendritic pattern due to geomorphic controls. Detail drainage pattern is shown in the map given below.

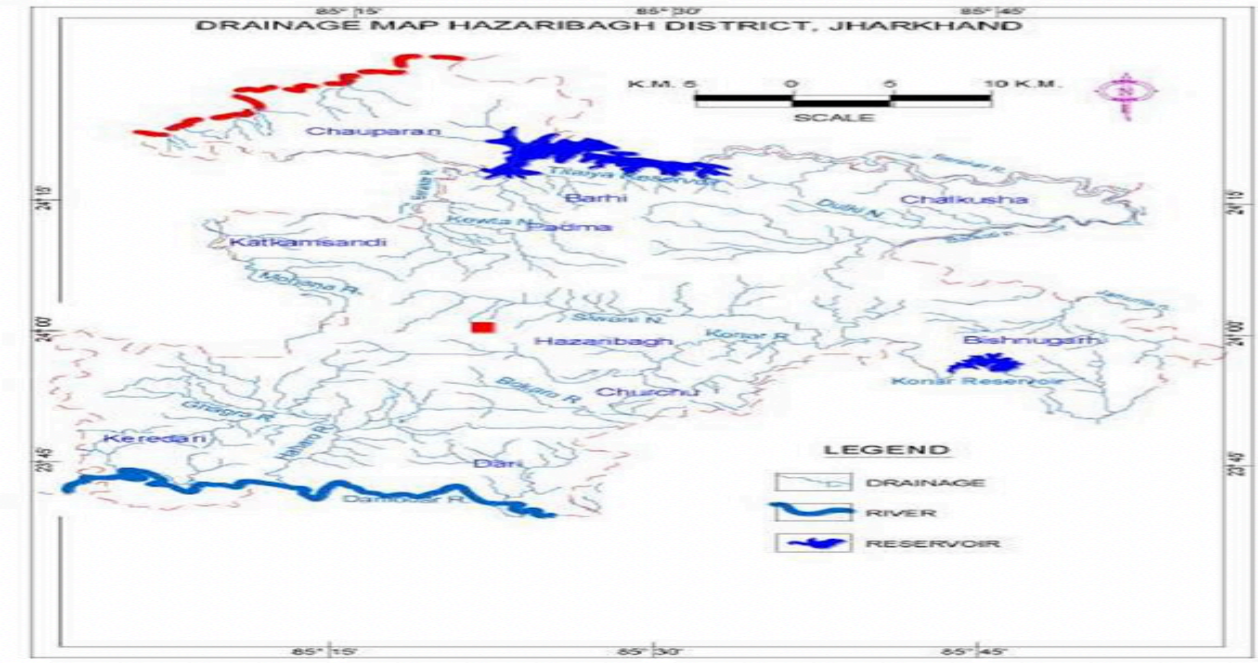

Image -3: Map showing different blocks of Hazaribagh along with major Drainage System

5. Demographics

According to the 2011 census Hazaribagh, a district of Jharkhand has been released by Directorate of Census Operations in Jharkhand. Enumeration of key persons was also done by census officials in Hazaribagh District of Jharkhand. In 2011, Hazaribagh had population of 1,734,005 of which male and female were 891,179 and 842,826 respectively. There was change of 25.75 percent in the population compared to population as per 2001. In the previous census of India 2001, Hazaribagh District recorded increase of 26.13 percent to its population compared to 1991.

The initial provisional data suggest a density of 403 in 2011 compared to 334 of 2001. Total area under Hazaribagh district is of about 4,302 sq.km. Average literacy rate of Hazaribagh in 2011 were 70.48 compared to 57.75 of 2001. If things are looked out at gender wise, male and female literacy were 81.15 and 59.25 respectively. For 2001 census, same figures stood at 71.83 and 42.87 in Hazaribagh District. Total literate in Hazaribagh District were 1,029,415 of which male and female were 607,854 and 421,580 respectively. In 2001, Hazaribagh District had 675,463 in its total region.

With regards to Sex Ratio in Hazaribagh, it stood at 946 per 1000 male compared to 2001 census figure of 987. The average national sex ratio in India is 940 as per latest reports of Census 2011 Directorate. In census enumeration, data regarding child under 0-6 age were also collected for all districts including Hazaribagh. There

were total 273,427 children under age of 0-6 against 267,969 of 2001 census. Of total 273,427 male and female were 142,129 and 131,298 respectively. Child Sex Ratio as per census 2011 was 924 compared to 972 of census 2001. In 2011, Children under 0-6 formed 15.77 percent of Hazaribagh District compared to 18.64 percent of 2001. There was net change of -2.87 percent in this compared to previous census of India.

Hazaribagh District population constituted 5.26 percent of total Jharkhand population. In 2001 census, this figure for Hazaribagh District was at 5.26 percent of Jharkhand population.

Name of Block	Total Population	No. of GP	No. of Revenue Villages	% of Literacy		
				% of Male Literate	% of Female Literate	% of Total Literacy
Sadar Hazaribagh	237994	25	95	59.9	40	64.2
Barkatha	73192	12	72	70.6	29.4	29.8

Table 1: Population Distribution of Hazaribagh Block (Year 2011)

6. Climate:

The climate of the area is moderate to extreme and characterized by hot summer and cold winter. Rainfall in this area is also very moderate. The summer season starts from March and continued to June until rain comes and temperature ranges from 270 to 460 ^{0}C. May and June are the two months when hot wind blows throughout the day. Monsoon spans from July to September with maximum rains generally in August. Normal rainfall varies from 100cm to 120cm. humidity reaches highest during monsoon, which varies between 70% to 80%, but in summer, it goes down to 25%. Winter starts at November and continues to February with its acme in January mostly. Temperature varies from 250 ^{0}C to 100 ^{0}C normally. In some day it goes down to 4 ^{0}C -50 ^{0}C with a cold wave from north. The underground water resources of the area are poor and surface waters mainly from ponds are not available in summer. Dug wells are generally shallow and trap the shallow local underground pools, which become dry in summer. Rainfall is the main source of ground water recharge but most part of it passes

away as surface runoff. Water retention capacity of soil or regolith is poor in this area as soil thickness is minimum at many place. The following varieties of plants are present such as Mango, Neem, Kul (Ber), Jam Sal, Bot, Shimul, Bel, Gamar, Babool etc. The crops in this area mainly depend on good monsoon. Rice is the principal crop followed by wheat, maize etc. Ravi and kharif crops are grown in very limited areas where water supply in winter is present. Potato and other vegetables grow along the channel floors where the thickness of soil is much more and contain water or moisture.

7. **Forest**

Hazaribagh District is well endowed with forest in an area of 2088 Sq.km, which is 34.81% out of total area. Forests are an important natural resource for an area. They have a moderating influence against floods and rain and thus they protect the soil against erosion. They also provide basic raw material to a number of important industries, namely furniture, match box, paper, rayon construction, railway slippers, wooden poles, etc. Moreover, the environmental benefits of the forests are not far to seek. Due to favourable environmental condition, this district is rich plant diversity, such as Timber Yielding Plants, Ornamental Plants, Medicinal Plants, Home Construction Plants etc. Among several others, the most commonly observable plants are – Sal, Sagwan, Gamhar, Khair, Karanj, Harre, Bahera, Mahua Babul, Sada Basak, Bel, Muktajuri, Neem etc.

Hazaribagh Wildlife Sanctuary is located in the district. Tigers, cheetal sambar, wild boar, nilgai, sloth bear and kakar can be spotted here.

8. **Morangi Industrial Area**

The industries present in Ramgarh Industrial Area are as follows:

Sl. no.	Red	Orange	Green
1.	21	-	-

Table:4- Industries Category Wise information

The details pertaining to the 17 Category Industries present in Adityapur Industrial Area are as follows:

17 Category Industries		
Sl. No.	**In-operation**	**Closed**
1.	M/s J.C. I. Cement(p) Ltd.	
2.	M/s Tata Steel Long Products Limited.	

Table:5- Industries Category Wise information

9. Air Quality Monitoring carried out by Jharkhand State pollution (JSPCB):

JSPCB has carried out ambient air quality monitoring under NAMP at various location at Ramgarh are as below:

Sl. No.	Location	Station Code	Latitude	Longitude
1.	Top of Sadar Thana Building, Hazaribagh	-	$23^0$99'48'' N	$85^0$21'19.44''E
2.	Top of R.O. Building, Hazaribagh	-	$24^0$46'26'' N	$85^0$21'0.22''E

Table:6- Air Quality Monitoring Stations

10. Water Quality Monitoring carried out by Jharkhand State pollution (JSPCB):

JSPCB has carried out ambient air quality monitoring under NWMP at various location at Ramgarh are as below:

Sl. No.	Location	Station Code	Latitude	Longitude
1.	River Konar, At Bhishnugarh, Hazaribagh (Near at Konar Dam)	2388	24.324314	85.522031
2.	Konar Dam at Bishnugarh, Hazaribag, Near Intak well of DVC	2389	23.925367	85.765203
3.	Meetha Jheel, At-Hazaribag	2402	24.009951	85.363562
4.	River Konar, At- Koderma Near Tilaiya Dam	2390	23.780586	85.876131

Table:07- Water Quality Monitoring Stations

C. EFFORTS TAKEN FOR POLLUTION REDUCTION:

1. Water Environment

- Encouraging use of waste water obtained from domestic activities i.e. sullage is treated & recycle for toilet flushing & gardening, reducing fresh water requirement by 60%.

- Encouraging rain water collection & using same for non-consumptive purpose.
- Mandating both Rain water harvesting & Sullage Recycle for new large complexes.
- Educating Industries about water conservation by conducting water audits & Implementing the recycle & Reuse method of water.
- Optimize use of water through recycling.
- Avoiding the discharge of untreated effluents entering the surface water bodies.
- Modifying sewage treatment plants.
- Discouraging mass bathing in the holy river in order to reduce pollution.
- Prohibition of immersing chemicals painted idols in water bodies.
- The eco-friendly and economical treatment & recycle of industrial effluent, sewage sullage also provides a solution to increasing problems of pollution & water scarcity.
- Awareness program shall be continued for the community residing alongside the River Swarnrekha & Karkhai to prevent & protect the river pollution.

2. Air Environment

- RMC has satisfactory road infrastructure, however, to execute ongoing projects like lying of sewerage and storm water drainage, some of the roads has been excavated and undergoing repair. All efforts will be made by the NMC to prevent dust pollution in the vicinity of those roads. Besides, NMC, as per its routine, constructs new pakka road and maintains the existing pakka road to prevent dust pollution likely to arise from such roads in windy weather.
- PUC check-up in RMC area to made mandatory in coordination with Regional Transport Officer (RTO).
- Comprehensive Air Quality Monitoring of Ramgarh Region in coordination with MPCB

3. Land Environment

- RMC has adequate infrastructure to process municipal solid waste generated in its jurisdiction but improvement needs to be done towards operation. Besides, it has acquired adequate land to deal with future requirements. RMC produces compost

through its compost processing plant which enhances the essential nutrient content in soil.

- Awareness program shall be launched in relatively comprehensive way for the community to practice segregation at source so as to minimize quantity of waste likely to consume the place in the sanitary landfill.

4. Green Belt Development:

- Conservation of green belts.
- Improvements of Footpaths.
- Developments of Tree plantation on the road side in order to increase beauty.
- Periodic manicure of tree planted on roads.
- Prohibition of Spiting, peeing & throwing waste on the roads.
- Improvement of Traffic island & junctions.
- Awareness to citizens to keep city clean through slogans, messages, media etc.
- Maintenance of public utility buildings and Monuments.
- Increase in number of parks & play grounds for public use.
- Total use of open land for green belt development
- Arranging the seminar/awareness programme at school & collage levels.

5. Municipal Solid Waste Management

- Segregation of solid wastes into biodegradable and non-biodegradable components in order to undertake composting efficiently.
- Creating more awareness in public for minimizing wastes, non-usage of polythene bags, plastic bags.
- Prohibition on throwing wastes on roadside or in public places.
- Increase in number of mobile garbage collection vehicles, normally cundas places.
- Modernizing method of trash collection.
- Increasing the awareness programme in local people for effective segregation at the source.
- Upgrading the existing MSW Treatment Facilities and Enhance the proposed site for MSW Treatment Technically.

D. Action To Be Taken

(i) Control of Industrial Emissions

Sl. No.	Action Points	Time line for Implementation	Concerned Stakeholder
a. Long Term Action Plan			
1.	Conversion of natural draft brick kilns to induced draft using zigzag technique in a phased manner.	Implemented	Jharkhand State Pollution Control Board.
2.	Installation of appropriate air pollution control devices in units/industries.	Implemented and ongoing process	Jharkhand State Pollution Control Board.
3.	Regular inspection of all the industries to check the compliance of emission norms.	Ongoing Process	Jharkhand State Pollution Control Board.
4.	Only cleaner fuel consumption is mandatory to establish new industries i.e. Natural Gas (PNG/CNG), Liquefied Petroleum Gas, Bio-Gas Propane, Butane, etc.	Implemented and ongoing process	Jharkhand State Pollution Control Board.

5.	Regular Monitoring of DG sets in industrial area and action against violations.	Ongoing Process	Jharkhand State Pollution Control Board.
6.	Manual ambient Air Quality Monitoring during Diwali period in residential and commercial area for Air Quality Management.	Regularly Implemented	Jharkhand State Pollution Control Board.
7.	Action against the red category industries for installation of OCEMS and not transferring data to CPCB and JSPCB	Ongoing Process	Jharkhand State Pollution Control Board.
8.	Directions to all the Industries which are observed to be not in operation or closed or temporarily closed to remain close till further orders from JSPCB.	Ongoing Process	Jharkhand State Pollution Control Board./ District Administration
b. Short Term Action Plan			
1	Identification of brick kilns and their regular monitoring including use of designated fuel, and closure of unauthorized units	Implemented and ongoing process	Jharkhand State Pollution Control Board.
2.	Monitoring of industrial emission including real time online monitoring through OCEMS (Online Continuous Emission Monitoring System) and live camera feed and to take action against non-complying industrial units	Implemented and ongoing process	Jharkhand State Pollution Control Board.
	Installation of web cams and OCEMS in 17 Category of Polluting Industries.	Implemented and ongoing process	Jharkhand State Pollution Control Board.

	Strict enforcement against illegal use of such fuels, including fuels which do not have specifications laid down or are included in the acceptable fuels as mandated by Jharkhand State Pollution Control Board.	Ongoing Process	Jharkhand State Pollution Control Board.
	Night patrolling during winter season in industrial areas to ensure no illegal fuel burning takes place.	Ongoing Process	Regional transport Officer, Nashik

(ii) Control of Industrial Effluent Discharge

Sl. No.	Action Points	Time line for Implementation	Concerned Stakeholder
1.	Compliance of industries located in catchment area with respect to effluent discharge standards and its disposal as per consent conditions	Ongoing Process	Jharkhand State Pollution Control Board.
2.	Inventorization of the industries in the catchment area of Rivers covering assessment on aspects relating to Status of Consents under Water & Air Acts and Authorization, Effluent Generation, ETP capacities and final mode of effluent discharges	Ongoing Process	Jharkhand State Pollution Control Board.
3.	Actions against the Identified industries in operation without Consents under Water & Air Acts/Authorization under the H& OW (M & TM) Rules, 2016 as amended	Ongoing Process	Jharkhand State Pollution Control Board.

4.	Action against the industries not installed ETPs or ETPs exist but not operating or ETP outlet or treated effluent is not complying to the effluent discharge standards or norms	Ongoing Process	Jharkhand State Pollution Control Board.
5.	Action against the red category industries for installation of OCEMS and not transferring data to CPCB and JSPCB	Ongoing Process	Jharkhand State Pollution Control Board.
6.	Small scale/tiny and service providing units located in urban or semi-urban limits like Dairies, Auto Service Stations to have minimum provision of O & G traps	1 year	Local Authorities/ Municipal Corporation
7.	Estimation of industrial effluent generation and the existing CETP capacity and to arrive gap between the industrial effluent generation and the existing treatment capacity	1 year	State Government, District/Local Administration
8.	Channelization of industrial effluents to CETPs for ensuring treatment to comply with the discharge standards. Identification of suitable site within industrial areas, Execution and Commissioning of Adequate Capacity CETPs.	1 year	State Government, District/Local Administration

(iii)Control of air pollution from construction and demolition activities

Sl. No.	Action Points	Time line for Implementation	Concerned Stakeholder

1.	Enforcement of Construction & Demolition Rules 2016. Fine should be imposed on defaulting units.	Regular Activity	Urban Development Dept./ Development Authorities
2.	Control measures for fugitive emissions from material handling, conveying and screening operations through water sprinkling, curtains, barriers and dust suppression units;	Regular Activity	Urban Development Dept./ Development Authorities
3.	Ensure carriage of construction material in closed/covered vessels	Regular Activity	Regional Transport Dept./ Development Authorities
4.	Builders should leave 33% area for green belt in residential colonies. Plantation should be done as per Office order No.	Within a reasonable timeframe	Urban Development Dept./ Development Authorities/ Housing Companies
5.	Construction and Building required Environmental Clearance in case of the projects covered under, EIA Notification dated 14.09.2006 have to installed Anti-Smog Gun during construction phase.	Implemented and ongoing process	SEIAA/RMC/JSPCB
6.	All construction areas must be covered to avoid dispersion of particulate matter.	Ongoing Process	RMC/ Development Authorities

(iv) Other Steps to Control Air Pollution

Sl. No.	Action Points	Time line for Implementation	Concerned Stakeholder
a. Long Term Action Plan			

1.	Dead Bodies of Animals should be disposed through proper treatment facility like rendering plant etc.	01 Year	RMC
2.	Installation of Online Monitoring Devices on Air & Water polluting units for regular compliance.	01 Year	Jharkhand State Pollution Control Board.
b. Short Term Action Plan			
1.	Use of retrofitted emissions control Equipment in the DG sets installed by societies, colonies, industries, commercial buildings, shopping malls etc. with a minimum specified PM capturing efficiency of at least 70%, type approved by one of the five CPCB recognized labs	02 Year	CPCB/ Jharkhand State Pollution Control Board.
2.	Establish an Air Quality Management Division at SPCB/PCC Head Quarters to oversee air quality management activities in the State and interact with CPCB	Ongoing process	Jharkhand State Pollution Control Board.
3.	Restrict on CTE to new Tyre pyrolysis plants throughout the State	Implemented and ongoing process	Jharkhand State Pollution Control Board.
4.	Engage with concerned authorities on continual basis for maximizing coverage of LPG/PNG for domestic and commercial cooking with target of 100% coverage	2 Years	District Food & Supply Controller
5.	Monitoring of DG sets and action against violations. Fine should be imposed on defaulters.	1 Year	District Administration/ Jharkhand State Pollution Control Board.

6.	Street vendors are to be controlled strictly in respect of removing their wastes and debris before leaving the site of operation	2 months	

(v) Suspension of road dust and other fugitive emissions control

Sl. No.	Action Points	Time line for Implementation	Concerned Stakeholder
a. Long Term Action Plan			
1.	Regular/ mechanized cleaning of roads of Faridabad to control dust emitting from the roads and road shoulders.	Ongoing Process	RMC/ District Administration
2.	All the canals/nallah's side roads should be brick lined. Proper plantation also carried out.	03 Year	District Administration/ Forest Department
b. Short Term Action Plan			
1.	Prepare plan for creation of green buffers along the traffic corridors. Plantation of specific types of species of plants which are helpful in pollution control.	01 Year	Forest Department/MCF & Development Authorities
2.	Maintain potholes free roads for free-flow of traffic	Ongoing process	RMC/ Development Authorities
3.	Greening of open areas, gardens, community places, schools and housing societies	1 Year	RMC/ Development Authorities /

			Forest Department
4.	Blacktopping of metalled road including pavement of road shoulders	8 months	RMC/ Development Authorities
5.	Use of treated effluent of STPs in sprinkling on roads, agriculture and for irrigation purpose.	6 months	RMC/ Development Authorities
6.	Water spraying on road through portable tankers on regular basis.	Regular	RMC/ Development Authorities

(vi) Control of emissions from biomass/crop residue/garbage/municipal solid waste burning.

Sl. No.	Action Points	Time line for Implementation	Concerned Stakeholder
1.	Launch extensive drive against open burning of bio-mass, crop residue, garbage, leaves, etc.	Implemented and ongoing process.	RMC/ District Administration
2.	Regular check and control of burning of municipal solid wastes and use of fire extinguisher for control of fire in municipal solid waste and bio mass.	Implemented and ongoing process.	District Administration/ RMC/ Panchayati Raj
3.	Proper collection of horticulture waste (bio-mass) and its disposal following composting-cum-gardening approach	Implemented and ongoing process.	RMC/ District Administration

4.	Ensure ban on burning of agriculture waste and crop residues and its implementation	Implemented and ongoing process.	Agriculture Department
5.	Door to Door collection of segregated waste by agency and then its disposal directly in plant without dumping it on land.	Implemented and ongoing process.	RMC/ District Administration
6.	Establishment of composting pits in Parks/ residential societies etc. for management of biodegradable waste.	1 Year	RMC/ Development Authorities

(vii) **Control of Water Pollution**.

Sl. No.	Action Points	Time line for Implementation	Concerned Stakeholder
a. Long Term Action Plan			
1.0	**Industrial Source**		
1.1	Proposed Action Plan for effective control of Water Pollution: Regular effluent sample collection and analysis of Pollution Control System in Red, Orange & Green category Industries to be done to ensure strict compliance of prescribed effluent norms.	Frequency Red category- 6 months Orange category - 6 months Green category -12 months (By JSPCB) or By Individual Industries as follows.	Jharkhand State Pollution Control Board/ Individual Industry
1.2	Installation of energy meter, on line PH meter, automatic chemical dozing system, on line effluent quality &	Ongoing	Individual Industries

	flow measurement (OCEMS) and installation of independent laboratory to monitor critical parameters like MLSS, SVI etc. and other inlet and outlet parameters of ETP for Large & Medium Industries		(Large Category)
1.3	Upgradation of ETP in existing water polluting units is to be done on case to case basis. Under the upgradation plan, suitable tertiary treatment methods are to be installed in a time bound manner in order to ensure that treated water is recycled / reused to the maximum extend.	01 Year	Individual Industries
2.0	**Ground Water Pollution**		
2.1	Regular monitoring of Over Head Tanks supplying drinking water in the region and Rainy wells shall be carried out. Also, intensive surveys will be done to ensure that practice of reverse boring is not prevalent in there region.	Ongoing process	Jal Nigam/ State Ground Water Authority
3.0	**Domestic Waste Water (Sewage)**		
3.1	Domestic sewage contributes to about 80% of Water. The status of Sewage Pollution Control is as follows:	Ongoing	Urban Development Dept./ Jharkhand State Pollution Control Board.

3.2	STPs are Operational	Ongoing	Urban Development Dept./ RMC
3.3	Combined Inspection of STPs by JSPCB and Urban Development Department	Ongoing Process	Urban Development Dept./ Local Authority / Jharkhand State Pollution Control Board.
3.4	Upcoming High Rise Buildings, Commercial Project, Educational Institution, Multiplex, Town ship & Building Projects are major source of sewage generation and Municipal Solid Waste. Such projects must ensure setting up of STPs, recirculation of treated water for flushing/gardening regarding purpose & ensure compliance of the conditions of the Environment Clearance and NOC from PCB.	Ongoing Process	Project proponent Local Authority & Jharkhand State Pollution Control Board.
b. Long Term Action Plan			
1.0	**Industrial Source**		
1.1	Adoption of Cleaner Technology to reduce quantity of waste water, Promote recycle after treatment for sector like Paper, Tannery. Strategies regarding cleaner technologies in Paper industries are to be conducted in a time bound manner. In the Waste Paper based units, stress is being laid for setting up of tertiary treatment	1 Year	Jharkhand State Pollution Control Board/ Individual Industry

	facilities in order to ensure maximum recycling of treated waste water. Also recycling of the process water is being done as part of cleaner technologies		
1.1	Widening and Covering of major open Nalas carrying domestic sewage.		ULBs/ Local Administration
2.0	**Municipal Sewage Management**		
2.1	To undertake measurement of flow of all the drains presently contributing pollution load in rivers and to formulate detailed project report (DPR) for each drain and corresponding town and submission of DPR.	2 Years	State Government, UDD, Water Resource Dept., District Administration and Local bodies
2.2	Proper design, execution of STPs with full utilization capacity	2 Years	State Government, UDD, Water Resource Dept., District Administration and Local bodies
2.3	Ensuring dairy/automobile service stations and Hotels / Restaurants particularly located on roadside should have a treatment system and levy of fine in case found Violations	1 Year	Local authorities