



## RIVER POLLUTION IN INDIA - GS III MAINS

**Q.** River pollution has a potential to impact the water security of the nation. Discuss the factors contributing to the rising river pollution in India. (15 marks, 250 words)

**News:** *Ganga water unsafe even for bathing, says Bihar govt report on river pollution*

### What's in the news?

- The report, based on sample checks at 98 points of the rivers, including Ganga, Sone, Kosi, Bagmati, etc, in 27 districts showed excessive presence of faecal coliform bacteria in water.

### Key takeaways:

- Almost all major rivers passing through Bihar are unsafe even for bathing, revealed the annual survey report on health of rivers recently tabled by the Bihar State Pollution Control Board (BSPCB) in the state legislature.
- Water sample of the Sirasia river at Raxaul yielded a presence of around 2,40,000 most probable numbers (MPN)/100ml.
- The **World Health Organisation (WHO)** norms stipulate that river water with more than **1000MPN/100ml** faecal coliform bacteria should not be used even for irrigating crops, as uncooked agricultural produce could make people vulnerable to various kinds of diseases.

### River Pollution:

#### Importance of Rivers in India:

- Irrigation source for **agriculture**.
- **Cradle of civilization**.
- Drinking water source for the **domestic population**.
- Useful potential material for **industries**.
- Habitat for flora and fauna as several wildlife sanctuaries and national parks were situated on the banks of the river.
- Economic development of the nation - sectors such as inland fisheries mostly dependent on river water.
- Offers livelihood support to farmers and fishermen and several others dependent on the same.
- Contributes to the sustenance of the human and environmental system.

### Causes for River Pollution:

#### 1. Garbage dumping:

- **High population density** around the river banks and the reckless dumping of non-biodegradable waste, especially plastics, is further adding to water pollution.



- Despite warning and strict fines imposed by local administrations on those found dumping garbage into rivers and their estuaries, this uncivilised practice continues unabated.

## 2. Release of chemicals and effluents:

- **Industrialisation** along the river belt is polluting the water with chemicals and other industrial effluents.
- While large corporations adopt advanced techniques to treat effluents, smaller firms often have no such considerations and violate environment safety standards.

## 3. Agricultural run-off:

- Rampant use of **fertilisers and pesticides** used in field percolate to rivers.
- Inability to educate farmers about consequences of indiscriminate use has led to the poor state of rivers.

## 4. Rapid urbanisation and Industrialisation:

- Unrestricted flow of sewage and industrial effluents have compounded the problem of polluted rivers.

## 5. Superstitious beliefs:

- **Cremation grounds** in rural India are located on the banks of rivers like Varanasi.
- Unfortunately, lots of Indians families that cannot afford cremation consign mortal remains of loved ones to rivers. These human cadavers cause severe water pollution.
- Superstitions like **bathing in Ganga** help in getting rid of all sins and lack of efforts to remove such superstition has polluted rivers.

## 6. Sand dredging and mafias:

- High-quality sand from river beds is needed for India's booming **construction industry**. This has led to rising pollution in Indian rivers.
- Dredging operators - usually the unlicensed ones - deploy kerosene and diesel-fueled cheap watercraft manned by cheap labour for sand dredging.

## 7. Lack of e-flow:

- **Minimum ecological flow** is not maintained due to reservoirs and dams' construction on rivers, thus hampering the self-cleaning ability of rivers.

## 8. Washing & Sewage:

- Laundering clothes on river banks is a common sight in India. Modern detergents are made of chemicals that contaminate river waters.
- **Defecating** around river banks is yet another horrible practice in rural parts of the country that contributes to rising pollution of rivers in India.

## 9. Governance issues:

- The failure of many national programmes run by the Centre for river conservation, preservation of wetlands and water quality monitoring can be attributed to corruption, ineffective law implementation and failure of bureaucracy.

## Impacts of River Pollution:

### 1. Water security of the Nation:

- As nearly half our population depends on river water for their consumption and daily use, the river pollution has a potential to impact the water security of the nation.



## 2. Food security:

- Fish from polluted rivers is found to be high in mercury, lead and cadmium and hence, unfit for human consumption.
- Also, edible fish is contaminated with Salmonella, Shigella and other harmful microbes found in human faeces. Thus, such fish is unfit for human consumption.

## 3. Impacts food production:

- While agriculture is impacted adversely by rising pollution of rivers, it is also one of the reasons for contaminating waters.
- Polluted water does not allow seeds to germinate and cause stunted growth, denying farmers of a bumper harvest.

## 4. Health issues:

- According to Niti Aayog, a whopping 200,000 people lose their lives every year due to various problems caused by consuming contaminated water.
- The health hazards associated with infected water range from cancer to gastrointestinal disorders that occur due to deadly microbes that are creeping into the rivers.

## 5. Impact on flora & fauna:

- Chemical, effluents and sewage that pollute Indian rivers is causing several species of aquatic life to go extinct or move away to safer havens.
- River contamination threatens biospheres and nature conservation areas. Migratory birds shun these rivers, and hence, they can face extinction.

## 6. Loss of livelihood:

- Fishermen and fish farms that once flourished on banks of various Indian rivers are finding it increasingly difficult to find sufficient catch of edible fish.

## 7. Loss of Export Revenue:

- Freshwater fish varieties including the famous Hilsa, Rohu, Katla and prawns from Indian rivers once had a high demand in foreign countries, especially in the Middle East.
- Sadly, river water pollution has caused these varieties of prized fish to get contaminated with disease-causing microbes and chemicals.
- Consequently, several countries have banned imports of freshwater fish from India, including farmed varieties.

## Government Initiatives:

### 1. National Water Mission (2010):

- It ensures **integrated water resource management** leading to water conservation, less wastage, equitable distribution forming better policies.

### 2. National Water Policy (2012):

- It proposes a framework for creation of a system of laws and institutions and for a plan of action with a **unified national perspective**.

### 3. National Mission for Clean Ganga (NMCG):

- It provides a **five-tier structure** at national, state and district level to take measures for prevention, control and abatement of environmental pollution in river Ganga.
- It aims to ensure continuous adequate flow of water so as to rejuvenate the river, Ganga.



#### 4. Namami Gange Project:

- It integrates the efforts to clean and protect the Ganga River in a comprehensive manner.
- It aims to accomplish the **twin objectives of effective abatement of pollution and conservation and rejuvenation of National River Ganga.**
- The Vision for Ganga Rejuvenation includes restoring the Aviral Dhara (Continuous Flow) and Nirmal Dhara (Unpolluted Flow).

#### WAY FORWARD:

##### 1. Industries:

- **Reducing the effluent concentration** of the waste input by:
- **Wastewater treatment**
- Industrial in-plant process control
- Eliminating effluent constituents by pretreatment prior to discharge to sewer systems or by different product manufacturing for an industry.

##### 2. River flow:

- **Reducing the upstream concentration** by upstream point and non – point source controls.

##### 3. Reducing the effluent volume by:

- Reduction of direct industrial discharge volumes into the municipal sewer system.
- Reduction in infiltration into municipal sewer systems.
- Reduction of waste volumes through process modifications in industries.



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