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RIVER POLLUTION IN INDIA

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Abstract

River pollution has been one of the main topics in the environmental issue of India. This study was conducted to find out the pollution situation of rivers and the health problem of the surrounding residents. The results clearly determine that the water quality of rivers may not be in a position to sustain the aquatic life and not suitable for using domestic purpose. The study also provides evidence that local communities are suffering from a variety of health problems including skin, diarrhea, dysentery, respiratory illnesses, anaemia and complications in childbirth. Yellow fever, cholera, dengue, malaria and other epidemic diseases are also available in this area. Furthermore, the people are suffering by the odour pollution and respiratory problems.

Keywords: River, pollution, quality, life, etc

1. INTRODUCTION

1.1 General

Water is life. Without water, man's existence on the earth would be endangered and he would be driven close to destruction. All biological organisms depend on water to carry out complex biochemical processes which aid in the sustenance of life on earth. Over 70% of the earth's surface materials consists of water and separately from the air man breathes, water is one of the most important fundamentals to man. Early civilizations flourished along the Nile, Tigris and Euphrates in ancient Mesopotamia, Indus in India, and Huang He in China due to their location near water sources (Ayoade, 1988:5). Though water covers about 70 percent of the earth's surface, only 2.53 percent is fresh water while the remaining is salt water (UNESCO, 2003:8). The World Water Council also records that of the 3 percent of fresh water, only 0.3 percent is found in rivers and lakes, the rest being frozen (World Water Council, 2005). This suggests that man has a relatively low amount of fresh water resources with which he can carry out his activities.

1.2 Need of study

Though water covers about 70 percent of the earth's surface, only 2.53 percent is fresh water while the remaining is salt water. It is our responsibility to save the water and avoid the water pollution.

1.3 Objectives of Study

1. To study the causes of river pollution in India.
2. To study the effect of river pollution on human health.
3. To study the preventive measures to avoid the pollution of rivers.

2. RIVERS OF INDIA

India is a blessed nation when water sources come into question which is obtainable in the form of many rivers and lakes. It has 14 major, 55 minor and numerous small rivers. India is often referred as the "Land of Rivers". In fact river banks first hosted human civilizations in India as elsewhere in the world. Rivers in India play important social and economic roles.

Some important rivers of India are: Brahmaputra, Cauvery (Kaveri), Chambal, Ganga (Ganges), Godavari, Gomati, Hindon, Indus, Jhelum, Kali, Krishna, Narmada, Periyar, Ravi, Sutlej, Yamuna.



Figure 1: Rivers of India

3. Causes of River Pollution in India

a) Urbanisation

In urban areas, water is tapped for domestic and industrial use from rivers, streams, lakes, ponds, wells, etc. Nearly 80% of the water supplied for domestic use passes out as wastewater. In most cases, this wastewater is let out untreated and causes large scale pollution of the surface water. A partition of it percolates into the ground

and contaminates the ground water. Class I cities (cities with population above one lakh) generate as much as 16,662 Mid (Million litres per day) of wastewater. About 70% of the population of class I cities is provided with sewerage facility. The Ganga river basin contributes about one-third of the total wastewater of India.

b) Industries

Most Indian rivers and other sources of fresh water are polluted by industrial wastes or effluents. All these industrial wastes are poisonous to life forms that devour this water. The total wastewater generated from all main industrial sources is 83,048 Mid which includes 66,700 Mid of cooling water generated from thermal power plants.

c) Agricultural Runoff and Improper Agricultural Practices

Traces of fertilizers and pesticides are wasted into the nearest water-bodies at the onset of the monsoons or whenever there are heavy showers. This is the situation in Punjab and Haryana. In Haryana, the 40 km long drain No. 8 pours 250,000 kg/day of chlorides into the Yamuna to lift the chloride concentration in the river from 32 mg per litre just upstream of the drain convergence to 150 mg per litre just downstream of it. And most of these chlorides are from agricultural arrival flows.

d) Religious and Social Practices

Religious assurance and social practices also add to pollution of our river waters. Carcasses of farm animals and other animals are disposed in the rivers. Dead bodies are cremated on the river banks. Partially burnt bodies are also flung into the river. All this is done as a matter of religious assurance and in keeping with antique rituals. These practices pollute the river water and harmfully affect the water quality.

4. River Pollution in Western Uttar Pradesh

Western UP has many big and small rivers. Ganga, Yamuna, Hindon, Kali (East & West) and Krishni are the important rivers that sustain the region's lives. But over the history little decades, these rivers are continuously being polluted.

4.1 Hindon River

The River Hindon formerly known as *Harnandi* originates from Saharanpur district and after covering six districts finally meets the Yamuna River near Noida. It is a dead river today. a lot of of the villagers use the river water for drinking purposes. Owing to high concentration of contaminants like heavy metals and pesticides, the rural community residing on its banks is facing serious health problems.

Table 1: Heavy Metals in Hindon River

Place	Metal	Permissible limit mg/l	Content exceeding the permissible limit
Sharakthal (Saharanpur)	Lead	0.01	17 times
Budhana (Muzaffarnagar)	Chromium	0.01	12 times
Mohannagar (Ghaziabad)	Lead	0.01	14 times

Source : A study report of Janhit Foundation

4.2 Kali River (East)

Kali originates from a village called Antwada in Khatauli Block of Muzaffarnagar district in Western UP. The people from these villages utilize the water of this river for irrigation and livestock rearing. The unprocessed effluents of chemical plants, sugar mills, distilleries and slaughterhouses have made Kali River (East) almost lifeless. The water has turned black with hardly any oxygen left in it.

Table 3: Heavy Metals in Kali River (East)

Place	Metal	Permissible limit mg/l	Content exceeding the permissible limit
Ajhota	Manganese	0.01	18 times
Kudla	Chromium	0.10	14 times
Jalalpur	Cadmium	0.003	33 times
Behchola	Nickel	0.02	6 times
Ulhaspur	Jasta	5.0	24 times
Kudla	Iron	0.3	33 times
Dedwa	Copper	0.05	20 times

Source: The study report of Central Ground Water Board (Govt. of India)

4.3 How River Pollution Affects Our Lives: The Case Of Jaibheem Nagar

Jaibheem Nagar, a slum area in Meerut city is situated on the bank of Kali River (East) near the medical college. The water quality of the river is so bad that it has even let to the contamination of underlying ground water. As a result of which, women and children particularly young girls have to coat a irritating journey of 2-2.5 kms everyday to obtain clean drinking water for their families. Preliminary analysis of drinking water samples by Janhit Foundation revealed excessive contamination of the river water. The test found heavy metals like mercury, chromium, cadmium and lead in water samples. These metals can cause many serious health problems. Due to this contamination in drinking

water the residents of the slum suffer from epidermal, gastrointestinal, neurological disorders and cardiac ailments. Pregnant women and children are the worst affected. The residents have abandoned a number of hand pumps since the water coming out of them is severely contaminated.



Figure 2: Pollution of ground water

Table 3: Results of Heavy Metals Study in Jaibheem Nagar

Source	Metal	Permissible limit mg/l	Content exceeding the permissible limit
Pond water	Lead	0-05	5 times
Pond water	Mercury	0-001	12 times
Pond water	Cadmium	0-01	6 times
Pond water	Chromium	0-05	3 times
Kalu's private hand pump	Iron	0-3	77 times
Kalu's private hand pump	Cadmium	0-01	3 times
Ramdhari's private hand pump	Iron	0-3	13 times
India Mark II hand pump	Iron	0-3	5 times
Goraknath's private hand pump	Lead	0-05	3 times
Goraknath's private hand pump	Mercury	0-001	3 times
Rambhul's Private pump	Iron	0.3	66 times

Source: The study report of Janhit Foundation

5. How to Control the River Pollution

Controlling river pollution is in our own interest. As nation of India we have legal duty to protect our environment. Similarly, the government also has a duty

to protect the environment for the welfare of its citizens. There are many ways we can protect the river from pollution. Some immediate ways to control pollution are:

- Industries should set up machineries to remove contaminants from their effluents and wastewater. One way to do so is installation of Effluent Treatment Plant (ETP). This way we can control pollution at the source itself.
- The towns and cities should also have services to clean the sewage effluent. All towns and cities must have Sewage Treatment Plants (STPs) that clean up the sewage.
- Farmers should give up chemicals and pesticides in farming and should instead adopt organic methods of Farming thus reducing chemical pollution of rivers.
- We should bring to an end our religious practices that pollute river water.
- Proper drainage and sewage systems should be adopted that will not allow the polluted water to mix with river water.
- Ban on *Dhobi Ghats* alongside the river.

5.1 How Should I Contribute To Make The Rivers Clean?

As pointed out above, it is our duty to protect our environment. An individual effort may not be sufficient to clean our rivers, but when all of us contribute towards this goal it becomes a big effort. Thus it can help in maintenance up our rivers. There are many ways you can contribute towards a clean river in your area:

- Promoting communities participation in local river cleaning up
- Organizing awareness programs and meetings on the river pollution and its threats
- allotment of literature on the causes and ill effects of river pollution
- Talking to our family and friends for spreading awareness on the importance of good water quality and clean rivers.

6. CONCLUSION

Water pollution have the capabilities to interrupt life on our planet to a great level. congress has passed laws to try to combat water pollution thus acknowledging the fact that water pollution is, indeed, a serious issue. But the government alone cannot solve the entire problem. It is eventually up to us, to be informed, responsible and involved when it comes to the problems we face with our water. We must become familiar with our limited water resources and learn about ways for disposing harmful household wastes so they don't end up in sewage treatment plants that can't handle them or landfills not design to receive hazardous material. We should avoid the wastage from industrial commercial etc should not dispose in rivers.

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