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## ENVIRONMENTAL EFFECTS OF INDIA DUE TO WATER POLLUTION

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### ABSTRACT

Water pollution is a major global problem. Water pollution is the contamination of water bodies like Lakes, rivers, oceans and ground water. This form of environmental degradation occurs when pollutants are directly or indirectly discharged into water bodies without adequate treatment to remove harmful compounds. Water pollution affects the entire biosphere. Water pollution is a major environmental issue in India. An estimated 580 people in India die of water pollution related illness every day. The largest source of water pollution in India is untreated sewage. A large number of Indian rivers are severely polluted from point and non-point sources. Rivers Yamuna, Ganga, Gomati are amongst the most coliform polluted water bodies in India. Lack of toilets and sanitation facilities causes open defecation in rural and urban pill areas. Water pollution effects the irrigation. A result of irrigation and the effects on natural and social condition in river basins and downstream of an irrigation scheme.

### INTRODUCTION

Over two thirds of Earth's surface is covered by water; less than a third is taken up by land. As earth's population continues to grow, people are putting ever-increasing pressure on the planet's water resources. In a sense, our oceans, rivers, and other inland waters are being "squeezed" by human activities. Water pollution is major global problem water pollution is the leading worldwide causes of deaths and diseases<sup>[1&2]</sup>, and that it accounts for the deaths of more than 14000 people per day<sup>[2]</sup>. An estimated 580 people in India die of water pollution related illness every day<sup>[3]</sup>. Water pollution is a major environmental issue in India. The largest source of water pollution in India is untreated sewage. Other source of pollution include Agriculture runoff and unregulated small scale industry. Most rivers, lakes and surface water in India are polluted. Water is typically referred to as polluted when it is impaired by anthropogenic contaminant and either does not support a human use, such as drinking water, or undergoes a marked shift in its ability to support its constituent biotic communities, such as Fish. Natural phenomena such as volcanoes, algal blooms storms, and earth quakes also causes major changes in water quality and the ecological status of water.

**Water pollution causes and impacts:** Water bodies like lake, river, ocean and ground water get contaminated due to discharge of pollutants in the water bodies without any treatment to remove harmful compounds. Water pollution adversely affects not only aquatic plants and animals but it also affects human being and ecosystem.

Surface water and ground water are the two types of water resources that pollution affects. There are also two different ways in which pollution can occur. These are point source pollution and non point source pollution.

Water pollution is caused due to several reasons. Here are the few major causes of water pollution.

**Sewage and waste water:** Sewage, garbage and liquid waste of households, agricultural lands and factories are discharged into lakes and rivers. This water contains harmful chemicals and toxins which make the water poisonous for aquatic animals and plants.

The discharge of untreated sewage is the single most important source of pollution of surface and ground water in India. There is a large gap between generation and treatment of domestic water in India.

The majority of the government – owned sewage treatment plants remain closed most of the time due to improper design or poor maintenance or lack of reliable electricity supply to operate the plants, together with absentee employees and poor management. The waste water generated in these areas normally percolates into the soil or evaporates. The uncollected wastes accumulate in the urban areas causing the unhygienic conditions and releasing pollutants that leach into surface and ground water<sup>[4]</sup>.

Sewage discharged from cities towns and some villages is the predominant cause of water pollution in India. Investment is needed to bridge the gap between sewage India generates and its treatment capacity of sewage per day. Major cities of India produce 38,354 million liters per day (MLD) of sewage, but the urban sewage treatment capacity is only 11,786 M.L.D<sup>[4]</sup>. A large number of Indian rivers are severely polluted as a domestic sewage.

More than 500 million people live along the Ganges river. An estimated 2,000,000 persons ritually bath daily in the river, partially cremated bodies directly into the Ganges River<sup>[6]</sup>, which is considered holy by Hindus. Ganges river pollution is a major health risk. NRGB was established by the Central Government of India, on 20 February, 2009 under section 3(3) of the Environmental protection of Act, 1986. It also declared Ganges is the 'National River' of India<sup>[8]</sup>.

By an estimate by 2012, Delhi's sacred Yamuna River contained 7,500 coli form bacteria per 100 c.c. of water.

The lack of Toilets and Sanitation facilities causes open defecation in rural and urban pill areas of India, like many developing countries<sup>[7]</sup>. This is a source of surface water pollution.

**Dumping:** Dumping of solid wastes and litters in water bodies causes huge problems. Litters include glass, plastic aluminum, Styrofoam etc. different things take different amount of time to degrade of water.

**Industrial waste:** Industrial waste contains like asbestos, lead and petrochemicals which are extremely harmful to both people and environment. Industrial waste is discharged into lakes and rivers by using fresh water making the water contaminated.

**Oil pollution:** Sea water gets polluted due to oil spilled from ships and tankers while travelling. These spilled oil does not dissolve in water and forms a thick sludge pollution the water. The specific of analysis of water samples from 1995 to 2008 indicates that the organic and bacterial contamination is severe in water bodies of India. This is mainly due to discharge of domestic waste water in untreated from mostly from the urban centre of India.

**Health impacts of water pollution:** It is a well known fact that clean water is absolutely essential for healthy living. Adequate supply of fresh and clean drinking water is a basic need for all human beings in the earth, yet it has been observed that millions of people worldwide are deprived of this.

In India many areas of ground water and surface water are now contaminated with heavy metals, pops (Persistent Organic Pollutants), and nutrients that have an adverse affect on health. Water-borne diseases and water caused health problems are mostly due to inadequate and incompetent management of water resources.

Water-borne diseases are infectious diseases spread primarily through contaminated water. Through these diseases are spread either directly or through flies (or) flith, water is the chief medium for spread of these diseases. Most intestinal diseases are infectious and are transmitted through faecal waste. Pathogens-which include virus bacteria, protozoa, and parasitic worm are diseases-producing agents found in the faces of infected person. These diseases are more prevalent in areas with poor sanitary condition. These pathogens travel through water sources and interfuses directly through persons handling food and water.

Chemicals in water can be both naturally occurring or introduced by human interference and can have serious health effects.

Fluoride in the water is essential for protection against dental carries and weakening of the bones but excess Fluoride can causes yellowing of the teeth and damage to the spinal cord and other crippling diseases. In India high Fluoride content is found naturally in the waters in Rajasthan and Telangana.

Some house hold plumbing systems contain lead that contaminates the drinking water source lead is hazardous to health as it accumulates in the body and affects the central nervous system.

High concentrations of arsenic in water can have an adverse effect on health i.e. Arsenic water can cause liver and nervous system damage and also skin cancer. These cases are found in drinking water in six districts of West Bengal.

**Preventive measures:** Water borne epidemics and health hazards in the aquatic environment are mainly due to improper management of water resources. Proper Management of water resources has become the need of the hour as this would ultimately lead to a cleaner and healthier environment.

In order to prevent the spread of water borne infectious diseases, people should take adequate precautions. The city water supply should be properly checked and necessary steps taken to disinfect it. Water pipes should be regularly checked for leaks and cracks. At home, the water should be boiled, filtered or other methods and necessary steps taken to ensure that it is free from infection.

#### **The Environmental impacts of irrigation:**

The Environmental impacts of irrigation relate to the changes in quantity and quality of soil and water as a result of irrigation and the effects on natural and social conditions in river basins and downstream of an irrigation scheme.

An irrigation scheme draws water from ground water, rivers, lakes or overland flow and distributes it over an area.

Agriculture is both causes and victim of water pollution. It is a cause through its discharge of pollutants and sediment to surface and ground water through net loss of soil by poor Agricultural practices, and through Salinization and water logging of irrigated land. It is a victim through use of waste water and polluted surface and ground water which contaminate crops and transmit diseases to consumers and farm workers.

Agriculture is the single largest user of fresh water on a global basis and as a major cause of degradation of surface and ground water resources through erosion and chemical run off, has cause to be concerned about the global implication... of water quality. Mainly water pollution affects in India is reduced the production of the crops and contaminated crops. In India 2.19 million have been reported to suffer from water logging in irrigation canal commands also 3.47 million were reported to be seriously salt affects.

The central Pollution Control Board, a Minister of Environment & Forests Government of India entity, has established a national water quality monitoring Networking comprising 1429 Monitoring stations in 29 states and 6 in Union Territories on various rivers and water bodies across the country. Thus effort monitor water quality year round. The Monitoring network covers 293 rivers, 94 lakes, 41 ponds, 8 creeks, 23 canals, 18 drains and 411 wells distributed across India<sup>[5]</sup>. Water samples are analysed for 28 parameters including dissolved oxygen, bacteriological and other internationally established parameters for water quality.

Additionally 9 trace metals parameters and 28 pesticide residue are analysed. Biomonitoring is also carried out on specific location.

#### Conclusion

We can take individual action to help reduce water pollution, for example by using Environmentally friendly detergents, not pouring oil down drains, reducing, pesticides and soon. We can take community action too; litter picks to keep our rivers, lakes, canals and sea little bit cleaner. Working together, we can make pollution less of a problem – and the world a better place.

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