

River Pollution Problems and Conservation Measures in India

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ABSTRACT

India has always had a tradition of venerating rivers. Most rivers in India are worshipped and named after Gods or Goddesses or saints. Ironically these rivers suffer from severe pollution. Urbanization, Industrialization, excessive withdrawal of water, agricultural runoff, improper agricultural practices and various religious and social practices contribute river pollution in India. This article presents a rich legacy of some of our powerful rivers, suffering on several socio economic fronts and Govt. plans and initiatives targeted at the common mission of clean up of the rivers.

Key words : River pollution, Conservation

Introduction

Given that they have given rise to and supported human civilizations for thousands of years, rivers are the givers of life. Living off the vast glacier-fed rivers of Asia, more than half of the world's population is sustained. The glacial snowmelt of the Tibetan plateau feeds the Yangtze, Mekong, and Salween rivers. The melting glaciers on our side are responsible for the flow of the Ganga, the Indus, and the Brahmaputra. Even though the powerful Indus, which gives our country its name and identity, is under treaty, we in India worship our rivers. Considered an antecedent river, the Indus was present long before the Himalayas were formed. The river became more and more entrenched as the surrounding mountains rose. However, Indus can soon run out. Scientists found in 2008 that the Himalayan glaciers were receding more quickly than predicted. As a result, about a billion people in South Asia might end up without access to clean water. The Tibetan plateau is home to over 15,000 glaciers, most of

which are in China, India, and Nepal. Here at the top of the earth, the ice does not appear to be affected by global warming. A study that was published in Geophysical Research Letters, however, revealed different results. In order to do research on the Naimona Nyl glacier, Lonnie Thompson of Ohio State University and her team traveled to the central Himalayas in 2006. They were prepared for some melting to occur. But what they discovered as they examined samples of glacial ice astounded them. Glaciers are often dated by searching for two pulses of radioactivity buried in the ice. These are the remnants of the atomic bomb tests conducted in the 1950s and 1960s by the US and the USSR. The glacier mass and melt rates are shown by these readings. There was no sign of the atomic bomb blasts at the Naimona Nyl glacier because so much of the top ice sheet had melted. What will specialists measure now that there is no ice? According to some scientists, about half of the Himalayan glaciers are either completely gone or have changed. Snowmelt in France is only as good as monsoon seasons. What

happens if Monsoon fails? There is presently a monsoon shortage in our region. Our glacier fed rivers have always existed. However, where will the water come from if they also start to become seasonal? How will we feed the world's half? Projects including irrigation actually make the issue worse rather than better. The Amu and Syr Darya rivers in Central Asia formerly flowed into the Aral Sea. Soviet irrigation initiatives, however, dry out the ecosystem. Rivers no longer flow these days. Once one of the world's largest lakes, the Arabian Sea dried up. Today, almost the entire 68,000 square kilometer lake is a desert. A network of water channels has been established in Pakistan next door by dams and barrages. The water levels do not rise before a flood occurs. Nearly 70% of Punjab, Pakistan, experiences a rainy drought. Our worlds are not all that dissimilar. Some regions of northern India also experienced a similar fate this year. Flood plains were reclaimed by the Yamuna as it overflowed its banks. Nearer to home, the earliest rivers in peninsular India originate from the Sahyadris. From its sources in the districts of Satara and Pune, the Krishna Basin transports valuable water to the Bay of Bengal. Sixty countries have been attempting to commemorate the earth's waterways on September 4th, World Rivers Day, since 2005. The "Rights of Rivers" is the theme for this year. Rivers should be recognized as national treasures by the whole globe. Preventing the disposal of waste and sewage into our rivers is a major goal. The amount of untreated sewage in India is close to 80%. The majority of it ends up in our rivers, other bodies of water, and the ocean. Pune, for example, discharges over 160 crore litres of sewage into the Mula-Mutha each day. The massive beautifying initiatives along the shore merely make matters worse. To recover land for commercial and recreational use, millions of tonnes of rubble and concrete will be pumped into the riverbanks. According to experts, in order to recover 1545 acres, 38% of the river banks will be encroached upon. Where will the displaced water go in the event of flash floods like the one that occurred in Delhi?. Rivers are now again being treated with the respect they deserve. We are planning riverside development while the US, Europe, and China are creating sponge towns to allow the riparian ecosystems to recover on their own. It will not benefit us to chop down trees and bury living riparian ecosystems under concrete. Additionally, throwing sewage into our waterways won't. Shall we wait till the rivers

run dry, as in China or Russia.

River Pollution and Govt Initiatives

A river is deemed hazardous and polluting if its BOD level is more than a moderate 8, as it cannot sustain vital aquatic life. Our rivers hardly ever have any water in them. What we observe is the flow of sewage and effluent that is released from the city's industry and urban areas. We need to focus all of our efforts on treating this sewage. It's unfortunate that we don't preserve the beauty we were endowed with. By discharging trash into the rivers and releasing raw water into them, we are poisoning them. Because decades of untreated sewage discharge have contaminated the water, citizens must pay attention to these precious green zones. According to the water management regulations, sewage treatment plants must be included in newly constructed areas. These plants frequently go neglected and eventually die. This makes sewage worse. Though the public is aware that rivers are heavily polluted yet, they are not taking much steps to address the issue. To guarantee that pollution is stopped, a system of rewards and sanctions is required. A Carefull implementation of citizen redressal system is essential for the transparent and responsible management.

Govt. Plans and Programmes

The River Front Development (RFD) or rejuvenation projects have been promoted in a big way by the central and state governments across the country in the name of rejuvenating and beautifying the rivers. Some of the prominent sites for projects are Varanasi, Bhagalpur, Jaipur, Ahmedabad, Vadodara, Hyderabad, Jammu, Kota, Bilaspur, Patna Guwahati and Pune. The programme entailing the removal of trees from the banks of the river, and the construction of needless concrete embankments, is another threat to the rich biodiversity and riparian ecology. In 1985, India launched Ganga Action Plan (GAP), the largest ever river clean up operation in the country. GAP phase II in 1991 included in cleaning operations for the tributaries of the Ganga- the Yamuna, Gomti and Damodar. In 1995, the National River Conservation Plan (NRCP) was launched. Under this all the rivers in india were included for clean up operations. In most of these plans attempts are made to clean drains and divert sewage to treatment plants, before letting the effluents flow into rivers. The plan covering 18 rivers in

46 towns in 10 states include main activities such as treating the pollution load from the sewer system of towns in 10 states and cities, setting up sewage treatment plants, electric crematoria and low cost sanitation facilities, river front development, afforestation and solid waste management. The biggest draw back of these clean up programmes was that they failed to allocate responsibilities regarding who would pay for running treatment facilities in the long run. With the power supply being erratic, most of these facilities are under utilized. The problem of river pollution due to agricultural run-off has not been addressed in this programme. Further in order to strengthen the NRCP a new initiative called the National Ganga River Basin Authority (NGRBA) was formed in 2009. (Currently the National Mission for Clean Ganga, NMCG, has launched the Namami Gange Programme which is the flagship programme of the GOI)

Case Studies and Remedial Measures

The Pune rivers current state of disrepair is mostly the result of egregious administrative mismanagement. (Dr. Gurudas Nilkar, GIPE, Pune; Centre for Sustainable Development). The rivers of the city are no longer what they once were. Waterways are already all but dead. Longtime ago city dwellers frequently remember clean and elegant waterways. All these memories have vanished by now. Finding a section of river where one can breathe freely is becoming harder. The high levels of pollution in the rivers are concerning. The Central Pollution Control Board (CPCB) stated in its most recent assessment on the nation's rivers that Maharashtra state has the greatest number of polluted river segments—55—among all the states. The list had six sections along the Pawana River, eight sections along the Mula, Mutha, and Mula-Mutha confluence, all of which pass through Pune City. The contaminated river stretches are located by the analysis of the Biochemical Oxygen Demand (BOD). This indicator has a range of 20.0 to 30.0 mg per liter of river water. This is because of the fact that more than eighty percent of the water allocated per person by PMC is returned to rivers together with additional household contaminants, untreated home sewage, industrial effluent and the process of the RFD projects. The agencies that oversee sewage, PMC, irrigation departments and water supply are not apparently coordinated with one another and has escalated the problem further. At the PMC end, accountability is

essentially virtually nonexistent. Polluted stretches for restoration of water quality, CPCB, 2022 – mentioned in the report that Mula and Mutha rivers are one of the most polluted rivers with BOD level more than 50. It is said that mismanagement of sewage is the single biggest contributing factor to the state of urban area rivers. It is therefore important to provide incentives for large societies to reuse and treat their waste water. By doing this, we can guarantee that our rivers remain clean, and little strain is placed on the PMC infrastructure. Environmental education ought to be a major component of college curricula and a part of school curricula. A network of organisations and individuals who work towards conservation and safeguarding the country rivers formed a platform called Indian River forum. The forum is apparently calling for a suspension of the RFD projects. But the issue is though the RFD aims to revitalize the river front areas, in reality these projects are less about river restoration and more about the encroachment of flood plains and riverbeds characterized by heavily concretized by embankments and other structures like barrages, and also reclaiming flood plains and riverbeds for real estate development. The Pune RFD projects follow reportedly the same trajectory. Truck loads of cement, rubble and other material are seen dumped on the Mula-Mutha river bank which is against the spirit of climate mitigation. It is observed further that more than 20 % of flood plains already encroached breaching both 25-year and 100 year flood lines across city, construction of embankments and barrages on the prohibitive zones under the RFD project would further constrict the rivers reducing their carrying capacity leading to an increase in the flood risk. Under this Project there is no space for absorbing the possible floods. The rivers seriously needs rejuvenation but the way the projects are done is virtually drying up the rivers. The authorities vision seems to be to convert the rivers into stagnant pools of water and concretize banks and additional vegetation. This is not the vision we think a river should be. We have a alternative vision of more nature-based rejuvenation programme for the rivers.

Conclusion

Every river in India, the Ganga, Yamuna, Cauvery or Krishna, has its own share of problems due to pollution. Waters from the Ganga and Yamuna are

drawn for irrigation through the network of the canals as soon as these rivers reach the plains. This reduces the amount of water that flows into downstream. The water flowing downstream in rivers is water from small nallahs and streams that carry with them sewage and industrial effluents. The Govt has launched various river clean-up programmes. In spite of data from scientifically competent studies conducted by the CPCB, the Government has not been able to tackle this issue. Sewage and municipal effluents account for 75% of the pollution load in rivers while the remaining 25% is from industrial effluents and non-point pollution sources.

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