

A REVIEW ON THE STUDY OF THE POLLUTION IN THE GANGA AND CONSERVATION OF GANGA IN MODERN INDIA

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Abstract

Pollution levels in the Ganga contribute 9-12 percent of the overall disease burden in Uttar Pradesh (U.P.), according to a World Bank Funded Study (State of Environment Report-U.P.). The amount of coliform bacteria exceeds 2 lakh MPN compared to the national water quality standard of 5000. The overall health damage due to water contamination was estimated in the study to be about 6.4 million daily (Disability Adjusted Life Year). The total municipal sewage produced in the defined 25 towns in 1985 was 1340 million liters per day, according to the CPCB survey report (mld). In addition to this sewage, 260 ml of industrial waste water, 6 million tons of fertilizers and 9,000 tons of pesticides used within the basin in agriculture, significant amounts of solid waste, including thousands of animal carcasses and human carcasses, have been released into the river on a regular basis. Out of this, under the first step of GAP, works corresponding to just 873 mld (65%) were taken up. Under the 2nd stage of GAP, which is already in progress, the remaining sewage was to be taken up. The GAP and NRCP programmes have been optimistic, according to the Water Resources Planning Commission's report (May 2009). Monitoring of water quality by renowned independent institutions shows some change in water quality over the pre-GAP era. The study of water quality of samples collected at 16 stations on the Ganga River between 1986 and 2008 shows improvement in the levels of dissolved oxygen (DO) at 4 sites, namely up and down Allahabad and Varanasi streams. The decrease in biological oxygen demand (BOD) values is shown by all 16 stations except Patna downstream and Rajmahal. The level of BOD shows a substantial decrease in Allahabad and Varanasi, indicating an increase in the quality of water over the pre-GAP period. However, the BOD amount does not meet the requirement for bathing water at 7 of those 16 places. The situation for DO, for which the bathing standard is not reached at only one place, is much better. On the other hand, only the bathing norm is met in terms of total coliform count at one venue. The count exceeds the

bathing level by several times. The Action Plan was mainly concerned with the interception and diversion of 873 mln of targeted urban sewage for treatment.

Keywords: Basin, Dissolved oxygen, Ganga, GAP, Solid waste, Water resources.

I. INTRODUCTION

The Ganga River is a sacred and historic river in India and Bangladesh. The Ganges calls for the Bhagirathi and Alaknanda rivers to join Devprayag. At the foot of the Gangotri Glacier, at Gaumukh, the Bhagirathi flows at an elevation of 3892 m. (12,769 ft.). In Hindu culture, the Bhagirathi is considered the true source, and the Alaknanda is longer. In the western Himalayas in the Indian state of Uttarakhand, it has a total length of 2,525 km river rises and flows south and east through the Gangetic Plain of North India and goes to Bay of Bengal through Bangladesh, it is India's longest river and by water discharge is the second largest river in the world. With over 400 million people and a population density of around 1,000 inhabitants per square mile (390 /km²), the Ganges basin is the most densely populated river basin in the world. The Ganga was ranked in 2007 among the world's five most polluted rivers. The Ganga Action Plan, a river clean-up environmental project, has been a big failure to date, a lack of good environmental planning, Indian practices and values, and a lack of religious authorities' support. Kumbh Mela is one of the most common sources of Ganga river pollution in India[1].

Causes of Pollution:

It provides drinking water and agricultural irrigation to about 40 percent of India's population in 11 states. After 27 years and Rs. 1000 crore investment on the Ganga River, the situation is serious. In modern times, 30 polluted nalas flows in the Ganga River from Varanasi town within seven kilometers are considered to be heavily polluted[2]. The river flows through 29 cities in which the population of cities living above 10 lakh lives. A significant proportion of the solid and liquid waste in the Ganga River is damp, such as domestic use (bathing, washing and public defecation), sewage waste, unburnt dead bodies in the Ganga River[3]. In Ganga, Patna and Varanasi towns are more responsible for water pollution, and 80% of sewage waste is responsible for Ganga water pollution.

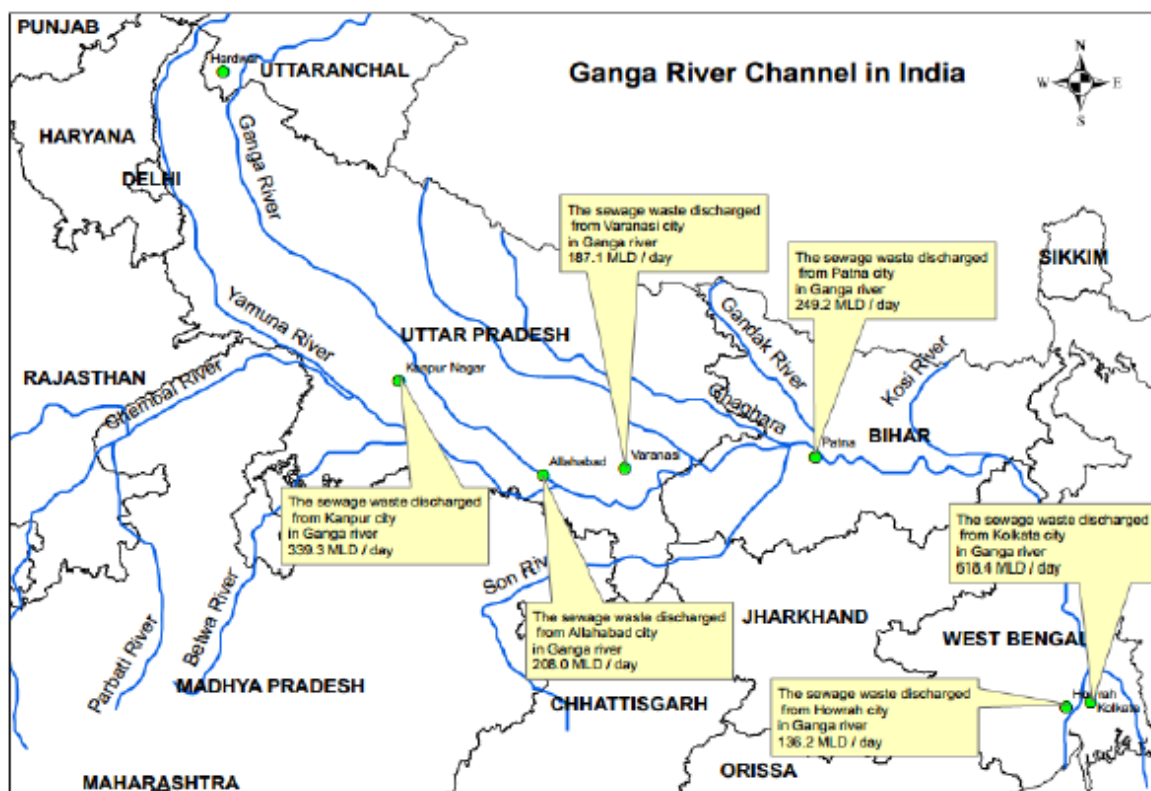


Figure 1: Flow channel of Ganga in India

Countless factories, such as chemical plants, textile mills, paper mills, fertilizer plants and hospital waste, are located on the bank of the Ganga River from Uttarakhand to West Bengal. These factories are 20% responsible for water contamination in the Ganga River and run off solid waste and liquid waste[4]. The water quality, its chemical properties and the life of the river are very harmful.

To every person in India, festivals are very important and heartfelt. A lot of people come to Ganga Snans during festival seasons to cleanse themselves. It is a tradition of India after the death of the people who dump their ash in the Ganga River because they believe that Ganga gives mukti from the human world. Khumbha Mela is a very large world festival, and in Allahabad, Hardwar in India, billions of people come to Ganga Snans[5]. For spiritualistic purposes, they throw certain materials like food, waste or leaves in the Ganges.

Effects of Pollution:

Day after day, the Ganga river pollution increased and marine life was going to be lost from this pollution in the near future and this contaminated water disturbs the river's ecosystem. And in their life cycle, irrigation and hydroelectric dams give life a challenge. Some dams are being built in the basin of the Ganges[6]. A large amount of water is obtained from dams and this is a threat to wild life in the Ganga River. Around 1200 hectares of forest will be flooded by the Kotli Bhel dam at Devprayag. Wildlife in India has warned that it would be difficult for wild animals to cope with the changed situation. Important associations between the

occurrence of water-borne/enteric disease and the use of the river for bathing, laundry, washing, feeding, cleaning utensils, and brushing teeth were shown by a Ganges water study in 2006. Important associations with enteric disease outcomes were also demonstrated by exposure factors such as washing clothing, bathing and lack of sewerage, household toilets, children defecating outside, inadequate hygiene, low income and low education levels. Water in the Ganges has been linked with dysentery, cholera, hepatitis, and extreme diarrhea, which continues to be one of India's leading causes of child death.

GAP (Ganga Action Plan):

A program initiated by Rajiv Gandhi in April 1986 to reduce the pollution load on the river was the Ganga Action Plan, or GAP. Under GAP I, in three states of the U.P., Bihar and West Bengal, emission control schemes were implemented in 25 Class-I cities. With an expenditure of Rs. 452 crore, GAP I was declared complete on 31.03.2000[7].

Since GAP I tackled only part of Ganga's pollution load, between 1993 and 1996 GAP II was introduced in stages, 59 towns along the main stem of the Ganga River in five states of Uttarakhand, U.P., Jharkhand, Bihar and West Bengal were covered by the Plan and included the following Ganges, Yamuna, Gomti, Damodar and Mahananda tributaries.

National River Ganga Basin Authority (NRGBA):

The National River Ganga Basin Authority (NRGBA) was created under Section 3(3) of the Environment Protection Act, 1986, by the Central Government of India on 20 February 2009[8]. It also declared the Ganges as India's "National River" The chair comprises the Prime Minister of India and the Chief Ministers of the Ganges flowing through the states.

II. CONCLUSION

- CPCB in Lucknow and Kanpur organized the training cum Awareness Program on Saltless Preservation of Hides/Skins, which was attended by members of UPPCB slaughterhouses, tannery & allied units and officers[9]s. The program was based on ongoing efforts to adopt a basin-wise approach to reducing dissolved solids from leather manufacturing industries in waste water, in particular by invoking less salt preservation of hides/skins.
- A Techno-Economic Feasibility for the establishment of the Common Recovery Plant & Common Effluent Treatment Plant for Muzaffar nagar, Moradabad and Meerut Clusters for Pulp & Paper Industries has been launched by CPCB. To identify the point source and its impact on the river, CPCB also conducted a reconnaissance survey from Gomukh to Uluberia (West Bengal). This reconnaissance survey is being conducted in collaboration with Shri Rajinder Singh, Member, NGRBA

In the matter of Prevention and Control of Emissions from agro-based Pulp & Paper Sector Mills, CPCB gave guidance to UPPCB and Uttarakhand PCB. As a result, directions in U.P. were given to 31 industries, 25 digesters sealed at Uttarakhand, 8 industries were guided and 4 stopped chemical pulping. In the month of September 2010, the CPCB undertook

monitoring of 26 industrial units on the Ganga River between Kannauj and Varanasi. Of these 7 were found closed during inspection, 2 met the prescribed discharge requirements, 9 required minor changes, 4 guidelines for closure were issued (under section 5 of the Environment Protection Act 1986), 3 guidelines for corrective measures were issued (under section 5 of the Environment Protection Act 1986) and 1 was issued Show Cause notice for closure (under section 5 of Environment Protection Act 1986).

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