

## Environmental Case Report: Ganga River Pollution

Harsh Srivastava<sup>1\*</sup>, Mahika Agarwal<sup>1</sup>, Hitanshi Arora<sup>1</sup>, Dhruv Sharma<sup>1</sup>

### Abstract

*In India, the Ganga River, commonly referred to as the Ganges, has enormous cultural, ecological, and economic significance. Sadly, it is among the most contaminated rivers in the world. Industrial waste, sewage, agricultural runoff, and religious acts are the main drivers of pollution. These contaminants have had detrimental effects on the river, including harm to aquatic life, destruction of the river's ecosystem, and health issues for those who depend on it for drinking water. Despite government initiatives to clean up the river, poor implementation, a lack of public involvement, and lax regulation enforcement, all contribute to the pollution's persistence. Comprehensive action is required to minimise pollution, promote sustainable practises, raise stakeholders' knowledge, and ensure effective monitoring and assessment of pollution control methods. The health of the river must be restored in order to protect the livelihoods and wellbeing of the millions of people who depend on it, which calls for a multidisciplinary strategy combining technological, social, and cultural solutions. Although the pollution of the Ganga River is a serious issue, India has the chance to show that it is committed to environmental sustainability and is capable of handling difficult environmental problems.*

**Keywords:** Ganga river, destruction of the river's ecosystem, lax regulation enforcement, pollution control methods, environmental sustainability

### INTRODUCTION

The Ganga River, also known as the Ganges, is one of the most important rivers in the world, both culturally and spiritually, and as a source of water for millions of people. However, the river is severely polluted, making it one of the most polluted rivers in the world. The Ganga River is polluted due to a variety of factors, including industrial waste, sewage, agricultural runoff, and religious practises.

Pollution not only harms the environment, but it also endangers public health by spreading water-borne diseases, threatening people's livelihoods, and degrading the river's ecosystem. *Despite the government's efforts to reduce pollution and protect the river, the situation has not improved significantly, and the Ganga River remains polluted.* As a result, it is critical to comprehend the causes and consequences of Ganga River pollution and devise comprehensive solutions to the problem. This report will examine the causes and effects of Ganga River pollution, as well as efforts to control it, and will make recommendations to reduce pollution and protect the river's health.

#### \*Author for Correspondence

Harsh Srivastava  
E-mail: [harshsrivastava660@gmail.com](mailto:harshsrivastava660@gmail.com)

Student, University of Petroleum and Energy Studies, School of Law, Knowledge Acres, Kandoli, Dehradun, Uttarakhand, India

Received Date: April 02, 2023  
Accepted Date: April 22, 2023  
Published Date: April 29, 2023

**Citation:** Harsh Srivastava, Mahika Agarwal, Hitanshi Arora, Dhruv Sharma. Environmental Case Report: Ganga River Pollution. National Journal of Environmental Law. 2023; 6(1): 65–76p.

*The Central Pollution Control Board (CPCB) regularly monitors the Ganga River's water quality and publishes a *Water Quality Index (WQI) report*. According to the most recent WQI report, released in March 2021, the Ganga River's water quality has improved slightly in the upper and middle stretches but remains poor in the lower stretches [1].*

The Ganga River is worshipped in Hinduism as a sacred river that is said to have descended from heaven to earth. *Bathing in its waters is thought to be a purifying act that can cleanse one's sins and*

*grant salvation. The river is also linked to several Hindu myths and legends, making it a popular destination for pilgrimage and worship.* Many Hindus consider the Ganga River to be a goddess who can bestow blessings and provide protection. Many religious festivals and rituals take place along the river, including the Kumbh Mela, a massive pilgrimage attended by millions of Hindus. Many people who revere the river are concerned about its polluted condition.

The pollution of the Ganga River has been a source of concern for several decades, prompting numerous cases to be filed in India's Supreme Court. *A Public Interest Litigation (PIL) was filed in the Supreme Court in 1985*, seeking measures to control Ganga River pollution. In response, the court issued several orders directing the government to take action to control river pollution. In 2014, the court revisited the issue of Ganga River pollution and established a special bench to monitor the government's progress in cleaning up the river. The court has been closely monitoring the situation and has directed the government to take necessary measures to address the issue.

The Ganga River is polluted due to a variety of factors, including industrial waste, sewage, agricultural runoff, and religious practises. *Untreated wastewater containing heavy metals, chemicals, and organic matter is discharged by industries along the river.* Agriculture contributes to pollution by using fertilisers and pesticides, which leach into and contaminate rivers. Another significant source is untreated sewage from homes and cities.

*Increased waterborne diseases, biodiversity loss, and economic losses are all consequences of Ganga River pollution.* Pollution also has an impact on people's livelihoods who rely on the river for fishing and agriculture. The river's religious and cultural significance is also under threat, and it could have long-term consequences for the ecosystem and public health.

## BACKGROUND

For several decades, pollution of the Ganga River has been a persistent environmental issue. The river is not only a vital source of water for millions of people, but it is also revered in Hinduism. The river's pollution has harmed its ecological health and caused a slew of health problems for those who rely on it for drinking water and a living.

The Ganga is an Asian river that flows through India and Bangladesh. It is one of the most sacred rivers to Hindus and provides a lifeline to a billion Indians who live along its banks. *Kanpur is one of the most populous cities along its path. This city has a population of approximately 29.2 lakh people (2.9 million).* At this point in its journey, Ganga receives a large amount of toxic waste from the city's domestic and industrial sectors, particularly Kanpur's leather tanneries [2].

*The WQI report rates water quality on a scale of 0 to 100, with 0 indicating poor water quality and 51 indicating satisfactory water quality.* The water quality in the upper reaches of the Ganga River has improved from 58 to 63, indicating satisfactory water quality. The water quality has improved from 42 to 45 in the middle stretches, indicating poor water quality. However, in the river's lower reaches, the water quality has dropped from 49 to 44, indicating poor water quality.

The primary causes of poor water quality in the Ganga River's lower reaches are industrial and municipal pollution.

The government has been taking steps to improve the Ganga River's water quality, such as building sewage treatment plants, cleaning riverbanks, and promoting the sustainable use of water resources. However, more concerted efforts are required to address the issue and ensure that the water quality of the Ganga River meets the desired standards.

The government has been taking steps to improve the Ganga River's water quality, such as building sewage treatment plants, cleaning riverbanks, and promoting the sustainable use of water resources.

However, more concerted efforts are required to address the issue and ensure that the water quality of the Ganga River meets the desired standards.

M.C. Mehta filed a mandamus writ petition in 1985 to prevent these leather tanneries from disposing of domestic and industrial waste and effluents in the Ganga River. The Supreme Court divided this writ petition into two parts known as Mehta I and Mehta II.

### **CAUSES OF RIVER POLLUTION**

There are several causes of river pollution, including:

- *Water Pollution*: Is caused by industries discharging effluents into rivers, which contain harmful chemicals and heavy metals.
- *Agricultural Pollution*: Occurs when fertilisers and pesticides used in agriculture run off into rivers, polluting the water.
- *Municipal Sewage*: Untreated sewage from cities is discharged into rivers, polluting the water.
- *Construction Activities*: Along riverbanks can cause soil erosion, which can lead to sedimentation and reduce water quality.
- *Oil Spills*: Oil spills from ships and tankers can pollute the water and harm aquatic life.
- *Mining Activities*: Can cause soil erosion and the discharge of heavy metals and other harmful chemicals into rivers, resulting in water pollution.
- *Climate Change*: Can cause changes in river flows, resulting in changes in water quality and water pollution.
- *Improper Waste*: Disposal can result in the release of harmful substances into rivers, causing water pollution.

These are just a few of the causes of river pollution, and addressing the issue can be complicated and difficult. Effective river pollution prevention and control measures are required, including the promotion of sustainable practises and the implementation of stricter regulations to ensure industries and other stakeholders comply with pollution control measures.

### **IMPACT OF RIVER POLLUTION**

The impacts of river pollution can be significant and can affect both the environment and human health. Some of the impacts of river pollution are:

- *Biodiversity Loss*: River pollution can harm aquatic ecosystems, resulting in biodiversity loss and a negative impact on the food chain.
- *Exposure to Polluted River*: Water can cause a variety of health problems, including skin irritation, gastrointestinal problems, and respiratory problems.
- *Economic Consequences*: River pollution can harm fisheries, agriculture, and tourism, all of which rely on clean water resources.
- *Soil Contamination*: Polluted River water can contaminate soil, resulting in lower crop yields and poor soil quality.
- *Water Scarcity*: River pollution can reduce the availability of clean drinking and agricultural water resources, resulting in water scarcity.
- *Climate Change*: River pollution can exacerbate the effects of climate change, such as decreased river flows and flooding events.
- *River Pollution*: Can have a negative impact on the well-being of communities that rely on it for their livelihoods, cultural practises, and recreational activities.

These are only a few of the consequences of river pollution, which can vary depending on the extent and severity of the pollution. River pollution must be addressed in order to protect the environment, human health, and the economy.

## SUSTAINABLE DEVELOPMENT GOALS

17 Sustainable Development Goals (SDGs) were adopted by the *United Nations General Assembly in 2015 as part of the 2030 Agenda for Sustainable Development*. The Sustainable Development Goals (SDGs) are a global call to action to end poverty, protect the environment, and ensure that everyone lives in peace and prosperity (Figure 1) [3].



**Figure 1.** Sustainable Development Goals (SDGs).

Here are a few of the Sustainable Development Goals (SDGs) that are related to river pollution:

- *SDG 6: Clean Water and Sanitation:* This goal seeks to ensure universal access to and sustainable management of water and sanitation. This includes reducing river pollution and ensuring that rivers are clean and safe for human and environmental use.
- *SDG 14: Life Below Water:* This goal aims to conserve and use oceans, seas, and marine resources in a sustainable manner for long-term development. Rivers and their ecosystems are an important part of this, as they support life below water.
- *SDG 15: Life on Land* aims to protect, restore, and promote sustainable use of terrestrial ecosystems, manage forests sustainably, combat desertification, and halt and reverse land degradation and biodiversity loss. This includes preserving and restoring river ecosystems and their surroundings.
- *SDG 12: Responsible Consumption and Production:* This goal aims to ensure that consumption and production patterns are sustainable. This includes lowering the amount of pollution and waste entering rivers and their ecosystems.
- *SDG 13: Climate Action:* This goal calls for immediate action to combat climate change and its consequences. Climate change has the potential to impact river pollution by changing water quality, temperature, and flow, as well as increasing the risk of flooding and erosion.

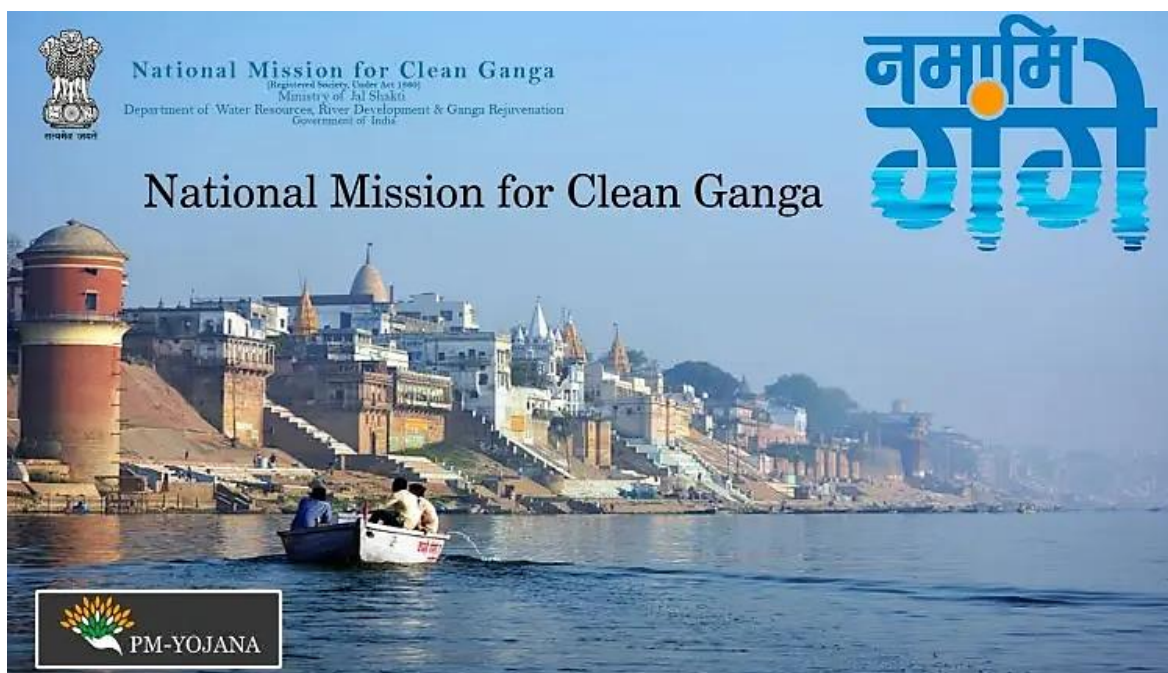
Strong policies, regulations, and enforcement mechanisms are required to achieve these SDGs and address river pollution. Investing in wastewater treatment plants, promoting sustainable agriculture practises, reducing the use of harmful chemicals, and increasing public awareness and engagement are all examples of how this can be accomplished.

## INDIAN GOVERNMENT ACTION

The Indian government has taken a number of steps to address Ganga River pollution. The government has taken the following major actions:

### The Namami Gange Program

The Namami Gange Program, launched by the Indian government in 2014, aims to clean and revitalise the Ganga River (Figure 2). The programme, which has a budget of more than 20,000 crore rupees (\$2.7 billion), aims to address Ganga River pollution comprehensively [4].



**Figure 2.** Indian government's action to address Ganga River pollution.

The programme includes several initiatives such as the construction of sewage treatment plants, riverfront development, and river ghat cleaning. The following are some of the program's key components:

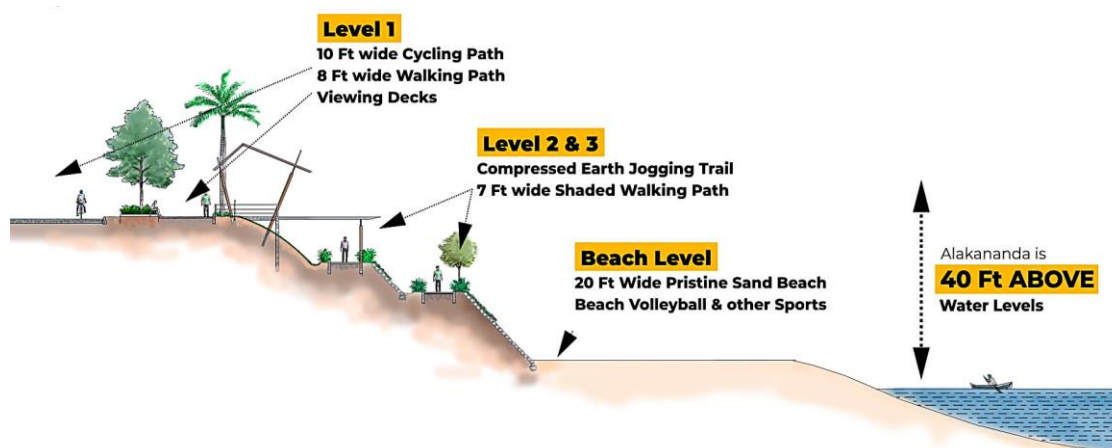
- *Sewage Treatment:* The program's goal is to establish sewage treatment plants to treat sewage generated by cities and towns along the Ganga River. The treated water will then be returned to the river, reducing the amount of untreated sewage that enters it.
- *Riverfront Development:* The program's goal is to develop riverfronts along the Ganga River in order to promote tourism and create economic opportunities for local communities.
- *Industrial Effluent Treatment:* The programme seeks to establish effluent treatment plants to treat effluent discharged by industries along the Ganga.
- *River Surface Cleaning:* The programme aims to remove floating debris and pollutants from the river's surface, such as plastics and polythene bags.
- *Biodiversity Conservation:* The programme aims to conserve the Ganga river's biodiversity by establishing fish sanctuaries, turtle conservation centres, and wetlands.

The Ganga Task Force is monitoring the progress of the Namami Gange Program, which is being implemented in stages. The programme is an important step towards addressing Ganga River pollution, and its successful implementation is critical to achieving the goal of cleaning and rejuvenating the river.

### **The River Regulation Zone**

A River Regulation Zone (RRZ) is a designated area along the banks of a river or one of its tributaries that is subject to specific regulations aimed at protecting and conserving the river ecosystem. A river regulation zone's goal is to control human activities that can pollute, degrade, or erode the river and its surroundings (Figure 3).

The National River Conservation Directorate (NRCD) in India has declared the Ganga and its tributaries to be a River Regulation Zone. The NRCD has established guidelines and regulations for activities permissible within these zones. The respective state pollution control boards and the Central Pollution Control Board are in charge of enforcing these regulations (CPCB).



**Figure 3.** A river regulation zone's goal to control pollution.

The following activities are prohibited within the River Regulation Zone:

- *Construction Activities:* Buildings, bridges, dams, and other structures that can pollute or degrade the river are prohibited.
- *Mining Activities:* are prohibited within the River Regulation Zone, with the exception of sand and gravel mining.
- *Effluent Discharge:* It is strictly prohibited to discharge effluents from industries or sewage treatment plants into the river or its tributaries.
- *Solid Waste Disposal:* It is illegal to dump solid waste within the River Regulation Zone.
- *Agricultural Activities:* Within the River Regulation Zone, agricultural activities that involve the use of fertilisers or pesticides that can pollute the river are regulated.

The River Regulation Zone is an important safeguard for the river ecosystem. The effective implementation of these regulations is critical to reaching the goal of cleaning and revitalising India's rivers [5].

### Closure Polluting Industries

The closure of polluting industries is a critical step towards pollution control and reduction in India (Figure 4). The government has prioritised the closure of industries that discharge untreated effluents into rivers in order to improve the water quality of rivers such as the Ganga.

*The Central Pollution Control Board (CPCB) and State Pollution Control Boards (SPCB):* are in charge of monitoring river pollution levels and enforcing polluting industry closures. The CPCB has directed SPCBs to identify and prosecute polluting industries located along the Ganga and its tributaries.

*The Water (Prevention and Control of Pollution) Act of 1974 and the Air (Prevention and Control of Pollution) Act of 1981:* govern the closure of industries that fail to meet pollution control standards. The SPCBs and CPCBs issue show-cause notices to industries that violate the norms, and if the industries do not comply, their units are shut down [6].

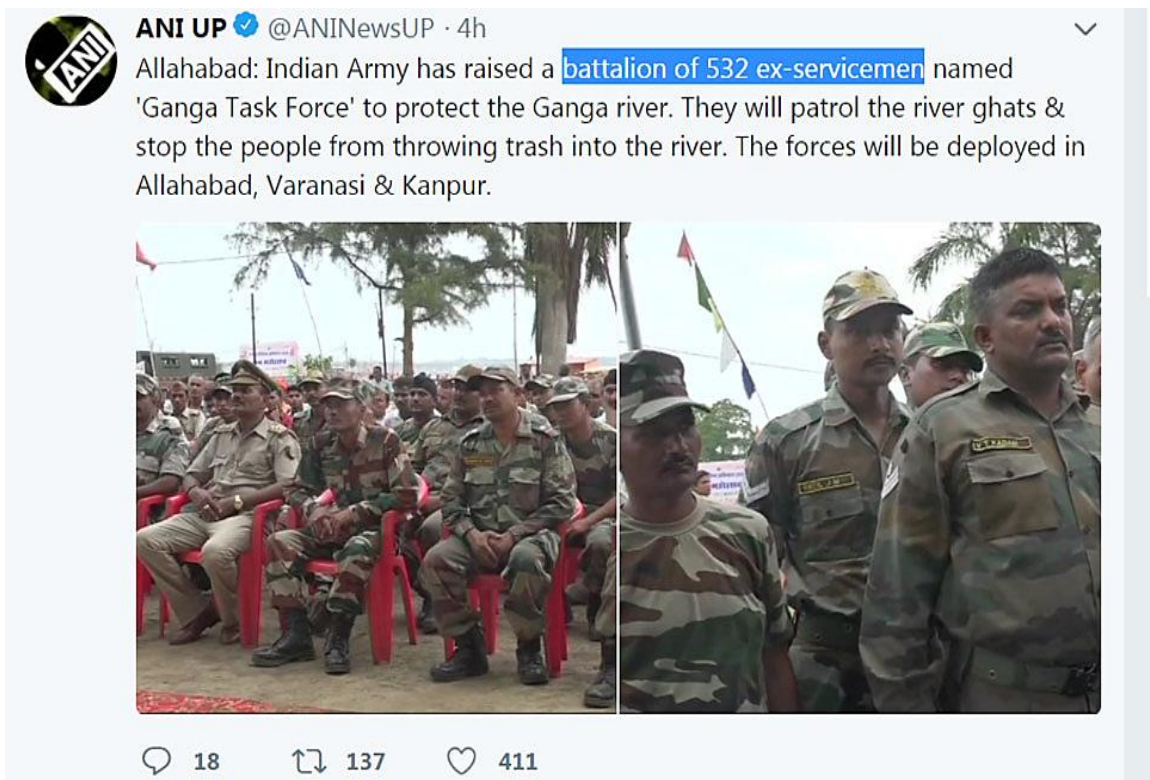
*Industrial Associations and Some State Governments:* have challenged the closure of industries, citing economic loss and employment concerns. However, the government has taken steps to alleviate these fears by providing alternative employment opportunities as well as financial assistance to affected workers and industries.

### Ganga Task Force

The Ganga Task Force is a special force formed by the Indian government in 2019 to combat pollution in the Ganga River. Personnel from the Indian Armed Forces, the National Cadet Corps, and the National Service Scheme make up the force (Figure 5).



**Figure 4.** Closure of polluting Industries.



**Figure 5.** Ganga Task force.

The Ganga Task Force has been tasked with cleaning the Ganga and its tributaries, with a focus on removing solid waste, cleaning the riverbed, and preventing waste from being dumped into the river. The force is also tasked with educating local communities about the importance of preserving the river ecosystem and promoting sustainable development.

The Ganga Task Force works in collaboration with the National Mission for Clean Ganga (NMCG), the nodal agency in charge of cleaning and revitalising the Ganga River. The task force collaborates closely with state and local governments to implement pollution control measures and carry out cleaning activities [7].

Tons of solid waste have been removed from the Ganga River and its tributaries by the Ganga Task Force. The force has also carried out several public awareness campaigns to educate local communities about the importance of protecting the river ecosystem. The Indian government has given the Ganga Task Force its support and funds to continue its operations.

The Ganga Task Force is an important step towards addressing the Ganga river's pollution problem. The task force has made significant progress in cleaning up the river and raising awareness about the importance of conservation. Continued government and community support will be required to sustain these efforts and achieve a cleaner and healthier river ecosystem.

### **RIGHT TO A CLEAN ENVIRONMENT**

The "*right to a clean environment*" is not explicitly mentioned in the Indian Constitution. However, under *Article 21 of the Indian Constitution*, which guarantees the right to life and personal liberty, the Supreme Court of India has recognised the right to a clean environment as part of the right to life [8].

The Supreme Court has ruled in several landmark cases that the right to life includes *the right to a healthy, pollution-free environment*. The court also ruled that it is the state's responsibility to protect and improve the environment for the benefit of the people.

*Subhash Kumar v. State of Bihar (1991)* was a landmark case in Indian environmental law. The case dealt with the illegal mining of limestone in the Musabani forest area in Bihar. The Supreme Court issued directions to stop the mining activity and to restore the environment in the area. The court also held that the right to a healthy environment is a fundamental right under Article 21 of the Constitution of India. The judgment established the principle that every citizen has a right to a clean environment and that it is the duty of the state to protect and preserve the environment [9].

*M.C. Mehta v. Union of India (1988)* is regarded as a watershed moment in Indian environmental law. The court was asked to intervene in order to address the problem of pollution in the Ganges. This case is also known as *Ganga Pollution Case*. The Supreme Court issued orders to reduce pollution in the Ganges River, including the closure of polluting industries, tannery regulation, the construction of sewage treatment plants, and the establishment of a *Ganga Monitoring Committee* [10]. The case established the "*polluter pays*" principle and emphasised the importance of protecting natural resources such as rivers. It also resulted in the establishment of the *National Ganga River Basin Authority (NGRBA)*, which is in charge of Ganges conservation and rejuvenation.

The case of *Vellore Citizens' Welfare Forum v. Union of India (1996)* was a watershed moment in Indian environmental law. The case concerned industrial pollution in the Cauvery River and its environs. The Supreme Court directed that industrial pollution in the river be controlled and that a liability regime for polluting industries be established. The court ordered the closure of polluting industries as well as the implementation of pollution control measures, such as the construction of a common effluent treatment plant [11]. The case also established the principle of "*absolute liability*" for polluting industries, making them strictly liable for any harm caused by their activities, whether negligent or not.

The case of *A.P. Pollution Control Board v. Prof. M.V. Nayudu (1999)* was a landmark in Indian environmental law. The case concerned pollution in the Andhra Pradesh River Musi caused by industries in and around Hyderabad. The Supreme Court ordered the closure of polluting industries as

well as the implementation of pollution control measures, such as the construction of a common effluent treatment plant. The court also held that the "polluter pays" principle applies in so far as the polluter must bear the cost of restoring the environment to its original state. The decision emphasised the importance of pollution prevention and control in order to protect the environment and public health [12].

*Narmada Bachao Andolan v. Union of India (2000)* was a significant case in Indian environmental law. The case dealt with the construction of the Sardar Sarovar Dam on the river Narmada and the displacement of people living in the area. The Supreme Court directed the construction of the dam subject to certain conditions, including the rehabilitation of displaced persons. The court also ordered the creation of an independent expert committee to oversee the environmental and social impact of the dam. The judgment highlighted the *importance of balancing development with environmental and social concerns*, and the need to ensure that development projects are sustainable and equitable [13].

As a result, while the right to a clean environment is not explicitly mentioned in the Indian Constitution, it is considered a component of the right to life under Article 21 and is regarded as an important fundamental right by the Indian judiciary.

### **IS GETTING CLEAR AND HEALTHY ENVIRONMENT A HUMAN RIGHT?**

While there is no specific SDG related to "getting clear and healthy", the right to health is recognised as a fundamental human right. "The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being, without distinction of race, religion, political belief, economic or social condition", according to the World Health Organization (Figure 6).



**Figure 6.** SDG related to "getting clear and healthy", recognised as a fundamental human right.

This means that no one should be denied access to health-care services, including preventive care, treatment, and rehabilitation. It also implies that governments have an obligation to create conditions that promote healthy living, such as safe food and water, as well as a healthy environment.

Therefore, it is crucial to acknowledge that achieving clarity and well-being can be an integral aspect of the right to health, and that governments and societies should work to ensure that everyone has access to the resources and conditions required for good health.

---

## ENVIRONMENT IMPACT ASSESSMENT

Environmental Impact Assessment (EIA) is a process that evaluates the potential environmental consequences of a project or activity before it is implemented. The *Environmental Impact Assessment Notification, 2006* governs the EIA process in India, outlining the procedures for conducting an EIA and obtaining environmental clearance for projects.

In terms of *River pollution*, projects that may have an impact on the river, such as industrial or infrastructure projects, must undergo an EIA. The *EIA contains a detailed assessment of the potential impacts on the river and its ecosystem, including water quality, aquatic life, and downstream communities*. The EIA also considers mitigation or reduction measures, such as the use of pollution control technologies, waste management practises, and rehabilitation of affected areas.

The EIA report is reviewed and approved by the *Ministry of Environment, Forests, and Climate Change*. Before granting environmental clearance for the project, the ministry may require modifications or additional studies. The EIA process is an important tool for ensuring that development projects are carried out in an environmentally sustainable manner, with the least possible impact on rivers and other natural resources [14].

Furthermore, *the National Green Tribunal (NGT)* has been actively monitoring and enforcing Ganga River environmental regulations. For example, in 2020, *the NGT ordered the closure of 126 polluting industrial units on the banks of the Ganga River in Uttar Pradesh, and fined them INR 10 lakh*. The NGT has also directed the authorities to take various measures to improve the health of the river, such as removing encroachments and preventing waste from being dumped into it [15].

Overall, the government and various environmental organisations have been working to *improve the Ganga River's health and mitigate the negative impact of development projects* on the river ecosystem through various regulations and enforcement measures.

According to a *2006 assessment of Ganges pollution, the most polluted section of the river in Varanasi* had biological oxygen demand levels averaging over *40 mg/l* and faecal coliform counts up to *100,000,000 MPN (most probable number) per 100 ml* over the previous *12 years* of river water monitoring. Acute gastrointestinal disease was included in the total incidence rate of *water-borne/enteric diseases*, which was estimated to be about *66%*.

The Ganges is classified in category D, "extreme pollution", in a systematic classification of river waters by *Uttarakhand Environment Protection and Pollution Control Board's (UEPPCB)* into the following categories: *A: "safe for drinking", B: "safe for bathing", C: "safe for agricultural", and D: Coliform bacteria levels* in the Ganges have also been measured and were found to be *5,500*, which is too high even for drinking and bathing, let alone for agricultural usage [16].

More than *400 tanneries in Kanpur's leather sector*, which employs about *50,000 people*, use chemicals such *hazardous chromium compounds*. Consequently, even after a common treatment plant was created in *1995*, chromium levels in the Ganges have not diminished. That is currently over *70 times* the suggested upper limit.

According to 2012 research by the *Indian Council of Medical Research's National Cancer Registry Program (NCRP)*, "people living near its banks in *Uttar Pradesh, Bihar, and Bengal* are more prone to cancer than anyplace else in the country".

In 2020, a study revealed that in terms of hazardous heavy metals, the level of cleanliness had greatly improved in recent years. *The Indo-US Science and Technology Forum funded this study (IUSSTF)*.

## AFTER COVID REPORT

The *Central Pollution Control Board (CPCB)* asserts that the decrease in industrial activity and human activity during the COVID-19 shutdown has resulted in some portions of the Ganga River's water quality improving.

For instance, according to the CPCB assessment, the Ganga River in Varanasi had much better water quality during the lockdown than it had during the same time previous year. The *biological oxygen demand (BOD)* reduced, suggesting less organic pollution, while the level of *dissolved oxygen (DO)*, which is crucial for aquatic life, increased in the river water. Yet, if human activity and industrial processes pick up, these benefits might not endure for very long.

It is worth noting that the Ganga River is a complex system, and pollution levels can vary significantly across different stretches and seasons. Therefore, continuous monitoring and enforcement of pollution control measures are essential to improve the water quality of the river and protect its ecosystem.

## CONCLUSION

In conclusion, the Ganga River's pollution is still a serious environmental issue that has to be addressed right away. Organic and inorganic pollutants have severely contaminated the river, which is primarily due to untreated sewage, industrial effluents, agricultural runoff, and the disposal of solid waste.

Although the COVID-19 pandemic temporarily reduced the amount of pollution in some areas of the Ganga River, it is important to remember that these gains might not endure for very long. To address the root causes of pollution and achieve the ecological health restoration of the Ganga River, sustainable solutions are required.

The Namami Gange programme is one of many efforts and projects the Indian government has put in place to clean up the Ganga River. But more work needs to be done to enforce pollution control laws, upgrade wastewater treatment plants, encourage sustainable farming methods, and lessen industrial pollution.

Raising public awareness of the Ganga River's significance and the effects of pollution on the environment and human health is equally crucial. Government, public society, and local communities may take coordinated action to safeguard and restore the ecological health of the Ganga River for future generations.

## REFERENCES

1. Central Pollution Control Board, Government of India. [Online]. <http://cpcb.nic.in/>
2. Edward Parker. The Ganges: River of life, religion, and pollution. [Online]. Geographical. <https://geographical.co.uk/culture/the-ganges-river-of-life-religion-and-pollution>
3. Global Goals. Goal 17: Partnerships for the Goals. [Online]. <https://www.globalgoals.org/goals/17-partnerships-for-the-goals/>
4. National Mission for Clean Ganga, Annual Reports, [https://nmcg.nic.in/Annual\\_Reports.aspx](https://nmcg.nic.in/Annual_Reports.aspx)
5. GKToday. River Regulation Zones (RRZs). [Online]. <https://www.gktoday.in/topic/river-regulation-zones-rrzs/>
6. Water (Prevention and Control of Pollution) Act, 1974 & Air (Prevention and Control of Pollution) Act. 1981.
7. NextIAS. (2019 Apr 17). Ganga Task Force. [Online]. <https://blog.nextias.com/ganga-task-force>
8. Article 21 of the Indian Constitution.
9. Subhash Kumar v. State of Bihar, AIR 1991 SC 420.
10. M.C. Mehta v. Union of India, (1988) 1 SCC 471.
11. Vellore Citizens' Welfare Forum v. Union of India, AIR 1996 SC 2715.
12. A.P. Pollution Control Board v. Prof. M.V. Nayudu, (1999) 2 SCC 718.

13. Narmada Bachao Andolan v. Union of India, (2000) 10 SCC 664.
14. Environmental Impact Assessment Notification, 2006, S.O. 1533 (E), Gazette of India, Ministry of Environment and Forests. 2006 Jul 14.
15. National Green Tribunal Act, 2010, No. 19, Acts of Parliament. 2010.
16. Uttarakhand Environment Protection and Pollution Control Board. Uttarakhand Environment Protection and Pollution Control Board Act, 2002, No. 4, Acts of Uttarakhand. 2002.