RIVER LAWS: NEED OF THE HOUR IN INDIA

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ABSTRACT

Rivers constitute essential water resources and environmental assets, providing critical support to biodiversity, agriculture, industry, and human habitation. However, the non-enforcement of statutory laws and legal provisions and verdicts given by Hon'ble Court pertaining to river and similar water source conservation arising from legislative deficiencies, regulatory non-compliance, or administrative inefficiency has led to substantial environmental deterioration. The absence of effective and efficient enforcement mechanisms of river laws has permitted unregulated contamination, unauthorized exploitation of water resources, and unlawful encroachments, culminating in the deterioration of water quality, ecological imbalances, and the depletion of aquatic biodiversity of the river. Additionally, industrial effluent discharge, agricultural chemical waste, and unchecked urban expansion exacerbate these detrimental effects, rendering many water bodies such as river unsuitable for human use and undermining ecological sustainability. Jurisdictional conflicts, economic priorities, and legislative inertia frequently obstruct the effective implementation of environmental statutes and absence of any specific prevention of river water pollution laws makes it worse. Further, systemic corruption, bureaucratic inefficiencies, and competing interests between economic development and ecological conservation exacerbate these challenges. As a result, the continued degradation of river water resources systems escalates climate vulnerabilities, exacerbates water scarcity, and increases public health risks. Mitigating these adverse effects related to river water necessitates the rigorous enactment and enforcement of river water statutes governing river water bodies, the harmonization of overlapping legal provisions, and the facilitation of intergovernmental and collective collaboration. Strengthening regulatory compliance through community participation, technological monitoring, and enactment of effective legislation related to river water is essential to enhancing accountability and fostering sustainable river governance. This paper advocates for the enactment of legal frameworks and the narrow the enforcement gaps as imperative measures to uphold the integrity of these critical natural resources and ensure equitable river water resource management for present and future generations.

Introduction

"Groundwater, the water found beneath the Earth's surface in soil pore spaces and in the fractures of rock formations, is a vital component of the hydrological cycle. It accounts for about 30% of the world's freshwater resources and supports drinking water supply, irrigation, and industrial activities across the globe"[1]. Whereas "unlike surface water, which is readily visible in rivers, lakes, and reservoirs, groundwater exists out of sight, leading to its undervaluation and mismanagement in many regions, Rivers are said to be the means of survival for our civilization. Rivers are considered to be a powerful and precious national asset of India the conservation of the river ecosystem is non-transferable now, the restoration and conservation of rivers must be of the highest priority for sustaining humanity and ecology for the present and future generations"[2]. River conservation is a planned activity connected with various habitat features and outlines how to conserve all the rivers spread across India water is essential for life, supporting ecosystems, agriculture, industry, and human health, however, the availability of fresh water is declining due to factors such as climate change, population growth, and pollution. water conservation involves managing the usage and preservation of water resources to ensure their sustainability"[3]. The need for strict river laws arises from the necessity to prevent uncontrolled river pollution, illegal encroachments, and unsustainable water extraction, all of which contribute to declining water quality and ecosystem destruction. Many countries have legal frameworks governing river water resources, but weak enforcement, jurisdictional conflicts, and policy gaps often render these laws ineffective. Effective legal mechanisms should ensure pollution control, equitable water distribution, conservation of river ecosystems, and sustainable management practices. Additionally, the integration of modern technology, community participation, and intergovernmental cooperation is necessary for efficient river governance. This paper not only advocates for the enactment of legal frameworks but also it advocates the narrow the enforcement gaps as imperative measures to uphold the integrity of these critical natural resources and ensure equitable river water resource management for present and future generations.

[1] S. Gnana Soundari, *Environment Conservation for Prosperous Bharat – Ground Water and Conservation of Rivers*, 9 Int'l J. Novel Rsch. & Dev. (2024), https://ijnrd.org/papers/IJNRD2408371.pdf.
[2] S. Gnana Soundari, *Environment Conservation for Prosperous Bharat – Ground Water and Conservation of Rivers*, 9 Int'l J. Novel Rsch. & Dev. (2024), https://ijnrd.org/papers/IJNRD2408371.pdf.
[3] S. Gnana Soundari, *Environment Conservation for Prosperous Bharat – Ground Water and Conservation of Rivers*, 9 Int'l J. Novel Rsch. & Dev. (2024), https://ijnrd.org/papers/IJNRD2408371.pdf.

What May Cause the River Degradation

River Water contamination poses a significant threat to public health, with unsafe water contributing to a higher annual mortality rate than it may arise by armed conflicts and any other forms of violence. It is evident that less than 1% of the Earth's freshwater resources are readily available for human use and drinking purposes, it is imperative to implement protective measures to preserve these limited supplies of water. This need of hour is further catches attention with projections indicating that global freshwater demand will increase by approximately one-third by the year 2050. River Water is particularly susceptible to contamination due to its chemical properties, which enable it to dissolve a vast array of substances in consequence, pollutants originating from agricultural, municipal, and industrial sources can readily infiltrate River water supplies, resulting in widespread environmental degradation and public health risks. Addressing the causes of water pollution and implementing preventative measures are essential to ensuring compliance with environmental regulations and safeguarding River quality for future generations. The primary causes of river water contamination stem from three principal sources: industrial operations, agricultural activities, and residential developments along riverbanks. Historically, industrial facilities and urban centers have been established in proximity to rivers due to their utility in transportation and the historically common practice of waste disposal into waterways. Similarly, agricultural enterprises have predominantly been situated near rivers, as fluvial areas provide highly fertile soil enriched by nutrient deposits resulting from periodic river overflows. These factors have contributed to significant environmental concerns, necessitating regulatory oversight to mitigate pollution and protect water quality and also prevent river degradation. There are various sources river pollution such as.

Industrial Waste Discharge - The rapid expansion of India's industrial sector has led to the establishment of various manufacturing units, including textile, chemical, pharmaceutical, and paper industries, along riverbanks to use water access. However, many of these industries discharge untreated or insufficiently treated industrial effluents and pollutants into water bodies such as river, in violation of environmental regulations. These effluents and discharge contain hazardous substances such as heavy metals (lead, mercury, cadmium), acidic compounds, and synthetic dyes, which result in significant deterioration of water quality and pose a threat to aquatic ecosystems. Despite the existence of legal frameworks governing industrial waste disposal, inadequate enforcement and regulatory oversight have contributed to the continued

contamination of rivers. "Industries: The unimpeded flow of sewage and industrial effluents into rivers has compromised their purity, all of this industrial waste is toxic to the life forms that consume this water"[4].

Sewage and Domestic Waste - India produces millions of liters of sewage daily, a substantial portion of which is released into rivers without adequate treatment, in contravention of environmental and public health regulations. The absence or insufficiency of sewage treatment infrastructure in both urban and rural areas has led to the direct discharge of domestic waste, including detergents, organic matter, and human excreta, into natural water bodies. This untreated waste contributes to severe water contamination, facilitating the transmission of waterborne diseases such as cholera, dysentery, and typhoid, thereby posing a significant risk to public health and safety. "India produces 20,000 million liters of sewage per day (MLD), of which 30% is treated in sewage treatment plants (STP) and the rest of the sewage is discharged untreated into natural waters. A survey of sewage treatment plants in India was conducted by the Central Pollution Control Board (CPCB)"[5]. "According to this survey, most wastewater treatment plants are not operating at design efficiency. About 30,000 MLD of pollutants enter Indian rivers, 10,000 million liters from industrial plants alone"[6]

Agricultural Waste - The use of chemical fertilizers, pesticides, and herbicides in agriculture and farming results in the discharge of hazardous substances into rivers through surface runoff. Precipitation events facilitate the transport of these contaminants from farmlands into adjacent water bodies, leading to eutrophication which is a condition known as an overabundance of nutrients that promotes excessive algal proliferation. This process significantly reduces dissolved oxygen levels, causing the mortality of fish and other aquatic or water species. Furthermore, organic waste generated from livestock operations serves as an additional source of river pollution, exacerbating environmental degradation and potentially violating water quality regulations and significantly cause river degradation.

Plastic and Solid Waste Dumping - The mismanagement and unlawful disposal of plastic waste, including which is not limited to bags, bottles, and packaging materials, constitute a

[4] Sahdev Sahu, *River Water Pollution, Sources, and Human Health Effect in India*, 12 Sustainability Agri Food & Env't Rsch. (Special Issue: Climate Change) (2023).
[5] Sahdev Sahu, *River Water Pollution, Sources, and Human Health Effect in India*, 12 Sustainability Agri Food & Env't Rsch. (Special Issue: Climate Change) (2023).
[6] R. Kamble & D. Patil, *Artificial Floating Island: Solution to River Water Pollution in India. Case Study: Rivers in Pune City*, in Proceedings of the 41st Int'l Conf. on Env't, Biomedical & Biotechnology 136 (2012).

significant environmental concern in India by raising the pollution level significantly. In various urban and rural areas, solid waste is improperly discarded into rivers, resulting in the obstruction of waterways and the degradation of aquatic ecosystems. Due to its non-biodegradable nature, plastic waste persists in water bodies for extended periods, causing long-term environmental harm. And also, such pollution disrupts the natural hydrological flow of rivers, thereby heightening the risk of flooding and posing a threat to public safety and compliance with environmental regulations. "

Mining Activities - Unlawful and unregulated mining, particularly those which are conducted in riverbeds, have resulted in significant contamination of water bodies such as river. The widely practice of sand mining in India disrupts aquatic ecosystems and contributes to an increased concentration of suspended sediments, rendering the water turbid and unsuitable for human consumption. Furthermore, effluents from coal and mineral extraction sites contain hazardous heavy metals, which infiltrate river systems through surface runoff, leading to the contamination of potable water sources and posing a substantial threat to aquatic biodiversity. Such activities may constitute violations of environmental protection laws and water quality regulations.

Deforestation and Soil Erosion - Largescale deforestation within river catchment areas which has resulted in large scale soil erosion. In the absence of adequate vegetation to stabilize the soil, heavy rainfall facilitates the displacement of significant pollutants into river systems, thereby increasing water pollution and adversely impacting aquatic ecosystems. Raised level concentrations of suspended particulates hinder sunlight penetration, which in turn disrupts the photosynthetic processes of aquatic flora and contributes to reduced dissolved oxygen levels. These environmental disturbances negatively affect fish populations and pose substantial risks to communities reliant on river water for potable use and agricultural irrigation, potentially contravening environmental conservation and water resource management regulations. "Forest provides a protective cover and prevents soil erosion from occurring. Plant roots also hold soil onto the ground and preventing it from washing away into our streams, lakes and rivers. Presently there are various causes of deforestation in our society like agriculture, infrastructure, forest management, mining etc. but there, a most important cause of deforestation, is river bank erosion. Deforestation happened at river boundary portion in different ways as like flood and Tsunami and land slide, erosion of soil etc. In the Himalayan belt most of the river highly effect on the forest area beside the basin by its heavy water force. Some time it happened due to over

loaded situation at rainy seasons. Continues side erosion of river creates soil erosion which effect on the plant"[7].

Oil Spills and Shipping Activities - The utilization of India's inland waterways for transportation and commercial operations has led to a rise in pollution level due to the discharge of oil and petroleum products from vessels and riverside industries. The release of such pollutants results in the formation of a surface film on the water, which hinders oxygen exchange and causing detrimental effects on aquatic organisms. And also, oil spills from cargo ships in major ports and industrial river zones which increase in the river contamination levels, which renders the water unsuitable for human and animal consumption because of rise in pollution level. These activities may constitute violations of environmental protection laws, water quality standards, and marine pollution regulations, may rise in river pollution. "Spillage of oil through vessels and leakage through pipelines is one of the components responsible for river water pollution. Excess fertilizers are washed into the nearby water body and join the river course. It has been estimated"[8] that in 1984, "5 million tones of fertilizers, 55 000 tonnes of pesticides, and 125000 tonnes of synthetic detergents were used in India. Roughly about 25% of all these can be expected to ultimately end up in the rivers every year"[9]

Unregulated Urbanization and Encroachments - Unregulated and rapid urban expansion has resulted in extensive encroachment along riverbanks shortened the breath of rivers, diminishing the natural filtration capacity of river ecosystems. Unauthorized construction, improper solid waste disposal, and the discharge of untreated wastewater from informal settlements contribute significantly to the degradation of water quality. The alteration of natural river courses due to urbanization. "The river being the most important source of water is used by humans in every possible way. People bathe, washcloths and utensils, and chattels are cleaned in the river. Open defecation is practiced widely in rural and some urban regions,

[7] Tanmoy Mondal & Biplab Tripathy, *River Bank Erosion and Environmental Degradation*, 7 Int'l J. Rsch. 302 (2020), https://www.researchgate.net/publication/343797515_River_Bank_Erosion_and_Environmental_Degradation.
[8] Tanmoy Mondal & Biplab Tripathy, *River Bank Erosion and Environmental Degradation*, 7 Int'l J. Rsch. 302 (2020), https://www.researchgate.net/publication/343797515_River_Bank_Erosion_and_Environmental_Degradation
[9] R. Kamble & D. Patil, *Artificial Floating Island: Solution to River Water Pollution in India. Case Study: Rivers in Pune City*, in Proceedings of the 41st Int'l Conf. on Env't, Biomedical & Biotechnology 136 (2012).

during the rainy season it causes pollution, as it is washed into the river. According to UNICEF, about 626 million people or nearly 51% of the population in India still defecate in the open"[10]

Laws and Legal Framework for River Protection in India

There are no specific laws and legal framework related protection of river in India and the condition of river is said to be worst because there is lack of approach by the appropriate authorities, and there is no stringent legislation specific legislation for the protection of rivers. There are laws but they common laws which governs contamination of river water and other such issues, some of these laws are as following. Whereas The Water (Prevention and Control of Pollution) Act 1974 constitutes India's first comprehensive legislation effort to address environmental concerns related to water, its primary purpose is to prevent, control, and abate water pollution, and to secure the maintenance or restoration of water bodies as principal sources of water.

The Water (Prevention and Control of Pollution) Act 1974

The Act confers and delegates authority upon designated bodies namely, the Central Pollution Control Board (CPCB) and the State Pollution Control Boards (SPCBs), as established by the Central and respective State Governments to regulate the pollution of these water bodies. Furthermore, for the purposes of this Act, the term "pollution," shall include "such contamination of water or such alteration of the physical, chemical or biological properties of water or such discharge of any sewage or trade effluent or of any other liquid, gaseous or solid substance into water (whether directly or indirectly) as may, or is likely to, create a nuisance or render such water harmful or injurious to public health or safety, or to domestic, commercial, industrial, agricultural or other legitimate uses, or to the life and health of animals or plants or of acquatic organisms"[11]

Various powers and functions allotted to central pollution control board and the state pollution control board under section Section 16[12] and Section 17[13] of the Act.

[10] R. Kamble & D. Patil, *Artificial Floating Island: Solution to River Water Pollution in India. Case Study: Rivers in Pune City*, in Proceedings of the 41st Int'l Conf. on Env't, Biomedical & Biotechnology 136 (2012).
[11] The Water (Prevention and Control of Pollution) Act, No. 6 of 1974, § 2(e) (India).
[12] The Water (Prevention and Control of Pollution) Act, No. 6 of 1974, § 16 (India).
[13] The Water (Prevention and Control of Pollution) Act, No. 6 of 1974, § 17 (India).

State Government via state board also vested various power and function to protect the contamination of the stream such as to obtain information from any person (who is or may cause the contamination in the stream)[14], power to take sample[15], prohibition of the use of stream or well for disposal of polluting matter[16], restriction on new outlet and new discharge[17], and refusal and withdrawal of consent granted to industry[18].

The Water (Prevention and Control of Pollution) Cess Act 1977

The discharge of industrial waste into rivers constitutes a significant source of water pollution, leading to elevated contamination levels in the water. In response, this Act mandates the imposition and collection of a cess on the consumption and pollution of water by industries and local authorities as per their contribution in the water. The primary objective of this act was to enhance the financial resources available to the Central and State Pollution Control Boards for the effective prevention and control of water pollution. Pursuant to this Act, the Water (Prevention and Control of Pollution) Cess Rules, 1978, were enacted to establish standards and guidelines concerning the specification and placement of meters, which every water consumer is obligated to install and to complete the procedural implementation aspect of this Act. Supreme Court in the recently observed that "The issuance of the River Conservation Zone (RCZ)/River Regulation Zone (RRZ) Notification is pending for last nine years, since 2015. The first draft River Regulation Zone (RRZ) was issued in 2011".[19] And also observed that "several rivers, across the country, are critically impacted and threatened and are on the brink of disappearance due to the unregulated and unchecked illegal constructions and encroachments on and along their riverbeds, floodplains and catchments, which inter alia, causes water pollution, obstructs and eliminates ground water recharge, reduces the vital ecological flows necessary to maintain and preserve the river ecosystem, destroys the riverine biodiversity (and the entire food-web/food-chain therein)"[20]

National River Conservation Plan

National River Conservation Plan Established in 1995, the National River Conservation Plan

[14] The Water (Prevention and Control of Pollution) Act, No. 6 of 1974, § 20 (India).
[15] The Water (Prevention and Control of Pollution) Act, No. 6 of 1974, § 21 (India).
[16] The Water (Prevention and Control of Pollution) Act, No. 6 of 1974, § 24 (India).
[17] The Water (Prevention and Control of Pollution) Act, No. 6 of 1974, § 25 (India).
[18] The Water (Prevention and Control of Pollution) Act, No. 6 of 1974, § 27 (India).
[19] W.P. (C) No. 621 of 2024 (India).
[20] W.P. (C) No. 621 of 2024 (India).

is a generally centrally funded program aimed at mitigating river pollution and conservation of river. Both the National River Conservation Plan and the National Ganga River Basin Authority implement legal and regulatory measures for river conservation and pollution control. The objective of the National River Conservation Plan is to formulate and implement pollution abatement programs to enhance the water quality of the nation's significant rivers, which serve as primary sources of fresh water. The National River Conservation Plan encompassed river restoration and pollution mitigation initiatives in 46 municipalities along polluted stretches of 18 rivers across 10 states. In December 1996, the Ganga Action Plan Phase-II was integrated with the National River Conservation Plan. In accordance to this financial framework, an approval was granted in January 2001 for seven additional towns in Tamil Nadu, with a sanctioned project cost of Rs. 575.30 crore. In a meeting of the National River Conservation Authority convened in March 2001 under the chairmanship of the Prime Minister of India, it was resolved to adopt an integrated approach to river conservation programs. It was further decided that all forthcoming projects would be financed on a cost-sharing basis, with the Central Government bearing 70% of the expenditure and the respective State Governments contributing 30%. Additionally, it was mandated that the public share of the costs shall constitute no less than 10% of the State's contribution.

But There is no strict application of these program that and in absence of specific laws and legal framework creates the irregularities in the application of existing common environmental laws and national plans which are made for the protection of the rivers which increases the pollution and degradation of the rivers and also Hon'ble Supreme Court has stated that "We must record here with a great deal of emphasis that it is the paramount duty of the State not only to protect the ponds/lakes/water bodies in the State but also to ensure that ponds/lakes/water bodies, which have been illegally filled in, are restored. It is the Constitutional duty of the State to do so. The Committee appointed by the Secretary, Ministry of Environment, will make a note of this obligation on the part of the State"[21] and emphasis to prevent the degradation of rivers. Similarly, supreme court has given various guidelines and direction in the multiple cases to prevent degradation of river "In Ashok Kumar Sinha v Union of India, the Court directed the Union and Bihar governments to respond to concerns about the dumping of plastic waste in the Ganga. The dumping of plastic is causing serious environment degradation and also impacting aquatic life in the river banks and the water bodies in the

[21] 2024 LiveLaw (SC) 488.

country, the Court noted. The bench of Justices Hrishikesh Roy and S.V. Bhatti also ordered the removal and stoppage of further construction of illegal encroachments around the river, In November 2024, air pollution in the National Capital Region worsened so seriously that the Air Quality Index of the city spiked to 1500 – 'hazardous', making Delhi the most polluted city in the world. A bench of Justices A.S. Oka and A.G. Masih started monitoring the matter through the continuing mandamus case M.C. Mehta (1984). The bench closely monitored the designation of Graded Response Action Plan stages in the city, while also directing schools to be shut for children from all classes during Stage IV. During the hearings, the Court also started looking into solid waste management in the city, as smoke from untreated waste emerged as a major contributor to air pollution. Twice it summoned the Chief Secretary of Delhi, threatening the NCR government with contempt for non-compliance to the Solid Waste Management Rules"[22]. And article 21 which include right to wholesomeness of environment and article 48A and 51A(g) of the Indian Constitution also mandates on the state to prevent the water contamination and prevention of the degradation of the rivers.

Judicial Interventions Regarding the River protection

- In India, rivers are more than just bodies of water; they are vital components of the country's cultural, religious, and economic fabric. From the powerful Brahmaputra to the revered Ganges, these rivers have supported civilizations for many years. However, these water sources are under unprecedented strain due to the fast pace of urbanization, industrialization, and population increase. Over the years, India's legal environment regarding river pollution has changed drastically, whereas Indian judiciary playing crucial roles in river degradation, principles, and enforcement systems to safeguard these essential resources. The foundational legal basis for river conservation in India was formed by the series of cases started by environmental lawyer M.C. Mehta. In the Ganga Pollution Case, also known as *M.C. Mehta v. Union of India (1987)*[23], the Supreme Court addressed the serious pollution that Kanpur's tanneries were causing. The Court's ruling, which mandated that tanneries either establish effluent treatment systems or shut down completely, was revolutionary. By ordering municipalities along the Ganga to build sewage treatment plants and keep municipal garbage out of the river,

[22] Supreme Court Observer, *Supreme Court Review 2024: Speaking Green, Acting Grey on Key Environmental Issues* (2024), https://www.scobserver.in/journal/supreme-court-review-2024-speaking-green-acting-grey-on-key-environmental-issues/ (last visited Mar. 30, 2025).
[23] M.C. Mehta v. Union of India, (1987) 1 SCR 819 (India).

the Court established the idea that local governments have an obligation to safeguard their local water resources in the subsequent year's Kanpur tanneries case. By establishing that citizens could use public interest litigation to enforce their right to clean water, *Subhash Kumar v. State of Bihar*[24] which involved pollution of the Bokaro River by industrial discharge from the Tata Iron and Steel Company, made significant progress toward the recognition of environmental rights within India's constitutional framework. The ruling changed the focus of river pollution from being just an environmental problem to one of fundamental rights. The Supreme Court made it clear that, in accordance with Article 21 of the Constitution, the right to clean water is essential to life.

- Farmers in Rajasthan, who had no fear when cultivating their fields and drinking water from local resources, saw their lives turn into a nightmare as dangerous chemical industries without environmental safeguards poured toxic waste into their surroundings, rendering the water unfit for human consumption. The people suffered from diseases they had never experienced before, and their voices were silenced by corporate interests. Eventually, an NGO called the Indian Council for Environmental Legal Action saved their lives. In *Indian Council for Enviro-Legal Action v. Union of India*[25] *(1996)* the battle between economic expansion and environmental responsibility was the crucial question. the court determined that the entities engaged in hazardous activities must bear the cost of environmental remediation regardless of precautionary measures taken created a strict liability standard for environmental damages. The polluter's pay principle has proven essential in river conservation efforts by establishing financial accountability for pollution, thereby creating both remedial mechanisms and powerful deterrents against environmentally harmful activities that impact riverine ecosystems. Complementing the Polluter Pays Principle, the Precautionary Principle was firmly established in Indian environmental jurisprudence through *Vellore Citizens Welfare Forum v. Union of India*[26] *(1996)*. Addressing tannery pollution affecting the Palar River system, the Supreme Court articulated that scientific uncertainty regarding environmental impacts should not delay protective measures. This principle has proven particularly valuable in river conservation contexts. The Court's willingness to

[24] Subhash Kumar v. State of Bihar, (1991) 1 SCR 5 (India).
[25] IIndian Council for Enviro-Legal Action v. Union of India, (1996) 3 SCC 212 (India).
[26] Vellore Citizens Welfare Forum v. Union of India, (1996) 5 SCC 647 (India).

prioritize environmental protection despite scientific uncertainty represented a significant advancement in conservation approaches.

- The question that should the economic growth justify the displacement of thousands, or should justice and sustainability shape the nation's progress, was addressed in *Narmada Bachao Andolan v. Union of India*[27] *(2000),* While allowing dam construction to proceed, the Court mandated comprehensive environmental safeguards, continuous monitoring, and established sustainable development as a guiding principle in river management decisions. Sustainable development involves determining "what type or extent of development can take place, which can be sustained by nature/ecology" People living near the industrial zones are forced to endure contaminated water and the constant fear of long-term health hazards. Prof. M.V. Naidu, an environmentalist raised strong objections highlighting the irreversible harm that could be caused if stringent measures were not taken in advance. In *A.P. Pollution Control Board v. Prof. M.V. Nayudu*[28] *(1999)*, The Court's recognized that "environmental issues are increasingly becoming technical and scientific" and its call for specialized environmental courts with appropriate technical expertise acknowledged the complexity of ecological systems and the need for informed adjudication. This judgment contributed significantly to river conservation by highlighting the necessity of grounding environmental decisions in sound scientific understanding rather than political or economic expediency alone.

- Yamuna, which has been addressed by Kalidasa in his epic Raghuvamsa[29] as, “kalindi jalay madhuram pravahati”, which means, the water of river Yamuna flows sweet and pure, had to suffer polluting, foaming with industrial effluents and choked sewages. The Court's observation in *M.C. Mehta v. Union of India*[30] *(2004),* the case addressing the pollution control issue of river Yamuna, was that sewage contamination "affects the life, health, and ecology of the area" recognized the interdependence between human settlements and riverine ecosystems. By mandating sewage treatment infrastructure development and restricting industrial discharge, the Court acknowledged that urban river conservation requires substantial investment in municipal infrastructure, not merely industrial regulation, establishing a more comprehensive approach to urban

[27] Narmada Bachao Andolan v. Union of India, (2000) 10 SCC 664 (India).
[28] A.P. Pollution Control Bd. v. Prof. M.V. Nayudu, (1999) 2 SCC 718 (India).
[29] Kalidas, *Raghuvamsa* (V.N. & D.V. Mulgaoker eds., Gopal Narayan & Co.).
[30] M.C. Mehta v. Union of India, (2004) 6 SCC 588 (India).

river management. The interdependence between various hydrological systems was recognized in *Intellectuals Forum v. State of A.P.*[31] *(2006),* which prevented urban development encroaching on Hyderabad's traditional tank system that fed into larger river networks. The Court's acknowledgment that "environmental changes cannot be attributed to a single factor" but require consideration of "demographic, economic, technological, social, cultural, and even religious factors" demonstrated the judiciary's growing understanding of the complex socio-ecological systems within which rivers exist. This systems-based understanding has proven essential for developing effective conservation strategies that address multiple pressures on riverine ecosystems.

- With the raising concerns over the deteriorating condition of the Ganga and Yamuna rivers due to industrial discharge sewage pollution and unregulated urban expansion the Uttarakhand High Court invoked the Doctrine of Public Trust and the Parens Partiae principle, asserting that the state must act as a guardian to protect natural resources. In *Mohd. Salim v. State of Uttarakhand*[32] *(2017),* the Uttarakhand High Court declared the Ganges and Yamuna rivers as "living entities having the status of a legal person with all corresponding rights, duties and liabilities." Though later stayed by the Supreme Court on practical implementation grounds, this judgment introduced environmental personhood into Indian legal discourse, challenging traditional conceptualizations of rivers as mere resources and recognizing their intrinsic value. This represents perhaps the most significant conceptual evolution in river conservation jurisprudence, reflecting a philosophical shift from anthropocentric to eco centric perspectives on environmental protection. The National Green Tribunal (NGT) has significantly contributed to river conservation jurisprudence, particularly through *Manoj Misra v. Union of India*[33] *(2015),* which addressed Yamuna floodplain encroachment. The Tribunal's articulation that "the river floodplain is an integral part of the river ecosystem" expanded protection beyond the flowing water to include the broader riverine system. By prohibiting construction on floodplains and mandating ecological restoration, the NGT established a more comprehensive definition of what constitutes a river system requiring protection, advancing beyond narrow hydrological definitions to ecological

[31] Intellectuals Forum v. State of Andhra Pradesh, (2006) 3 SCC 549 (India).
[32]Mohd. Salim v. State of Uttarakhand, (2017) SCC OnLine Utt 367 (India).
[33] Manoj Misra v. Union of India, (2015) SCC OnLine NGT 840 (India).

conceptualizations.

- Building upon previous Ganges protection cases, *M.C. Mehta v. Union of India*[34] *(2017)* established a comprehensive framework prohibiting waste disposal, creating buffer zones, and imposing stricter penalties for non-compliance. The NGT's recognition of the Ganges' "significant economic, environmental and cultural value" and the "national importance" of its restoration acknowledged the multidimensional significance of rivers in Indian society. This comprehensive approach has proven essential for addressing the complex array of threats facing major river systems that have spiritual, cultural, and ecological significance. The continuous evolution of river protection mechanisms is evident in *Krishan Kant Singh v. National Ganga River Basin Authority*[35] *(2014)*, which mandated immediate action against leather industries polluting the Ganges in Kanpur while establishing continuous monitoring systems. The Tribunal's call for "an integrated approach for monitoring the quality of the river on a real-time basis" reflects the growing recognition that effective river conservation requires ongoing surveillance and adaptive management rather than one-time interventions. This emphasis on continuous monitoring represents a significant advancement in implementation mechanisms for river protection.

- Religious practices and Environmental Conservation often intersect in India where rivers like the Yamuna hold spiritual significance however unregulated religious activities have contributed significantly to pollution. In *Vardhman Kaushik v. Union of India*[36] *(2016),* which regulated religious activities affecting the Yamuna River. The NGT's balanced approach, recognizing that "while religious sentiments must be respected, environmental conservation necessitates regulation of practices that adversely impact river ecosystems," demonstrated the judiciary's increasing willingness to address sensitive cultural dimensions of river pollution while respecting India's diverse religious traditions. This nuanced approach has proven essential for effective conservation in a society where rivers hold profound cultural and spiritual significance. The relationship between terrestrial activities and river health was addressed *in Goa Foundation V. State of Goa*[37] *(2018),* which restricted mining activities near river basins

[34] M.C. Mehta v. Union of India, (2017) AIR SC 568 (India).
[35] Krishan Kant Singh v. Triveni Eng'g Indus. Ltd., (2016) SCC NGT 4176 (India).
[36] Vardhaman Kaushik v. Union of India, (2016) SCC OnLine NGT 2283 (India).
[37] Goa Found. v. State of Goa, (2018) 11 SCC 403 (India).

and established buffer zones to prevent sedimentation and contamination. The judgment's recognition that "mining in close proximity to river catchments creates cumulative environmental impacts that extend beyond the immediate extraction site" demonstrated the growing judicial understanding of landscape-level ecological processes. This broader perspective has been crucial for addressing indirect threats to river systems that emanate from activities occurring within watersheds but not directly along riverbanks.

- A nationwide approach to river protection emerged through *Paryavaran Suraksha Samiti v. Union of India*[38] *(2017)*, which ordered implementation of treatment infrastructure for sewage and industrial effluents throughout the country. The Court's declaration that "the right to clean environment and further, the right to have adequate facilities for treatment of effluent is part of right to life" reaffirmed the constitutional dimensions of environmental protection while establishing practical implementation requirements. This systemic approach to infrastructure development represents a crucial evolution from case-by-case interventions to comprehensive policy mandates. The principle of judicial proactivity in environmental protection was established in *Court on its own Motion V. State of Himachal Pradesh*[39] *(2013)*, where the NGT took suo moto cognizance of pollution in the Beas and Sutlej rivers. The Tribunal's assertion that "rivers cannot wait for litigation to be initiated by affected parties; the courts must act proactively" demonstrated the judiciary's recognition of its responsibility to protect ecological systems that may lack human advocates. This principle of proactive intervention has proven particularly valuable for river systems facing acute threats but lacking organized advocacy. The protection of river source regions received judicial attention *through Lalit Miglani v. State of Uttarakhand*[40] *(2017),* which declared the Gangotri and Yamunotri glaciers as legal entities requiring protection. By observing that "the very survival of the glaciers is at stake because of global warming, climate change and pollution," the Court acknowledged the vulnerability of hydrological source regions to both local pollution and global climate change. This protection of headwater regions represents a crucial expansion of river conservation jurisprudence to encompass

[38] Paryavaran Suraksha Samiti v. Union of India, (2014) 6 SCC 590 (India).
[39] Court on Its Own Motion v. State of Himachal Pradesh, (2013) SCC OnLine HP 3559 (India).
[40] Lalit Miglani v. State of Uttarakhand, (2017) SCC OnLine Utt 367 (India).

entire hydrological systems from source to sea.

Indian Judiciary is always being one of the most powerful judicial in the world where it has absolute power to protect the basic structure of Indian Constitution and also it gives the direction related to protection the river water and diminishes the water contamination as right to health[41] is fundamental right under article 21[42] of Indian Constitution and to protect the rivers of India judiciary time to time given many guidelines to protect the rivers from the contamination.

Need of Special Legislation related to and its related pollution

India has water act but it is not sufficient due to its weak enforcement and its provisions cover all the water bodies, but as river are prominent water bodies in India and cover significant portion and are in degradation state due lack of special legislation which address all these issues significantly and prevent the degradation there are the major reasons regarding the special laws related to Rivers in India.

Inter-State Water Disputes – In India Most of the major rivers flow across multiple states (e.g., Ganga, Cauvery,), leading to conflicts over water-sharing. And the existing laws and legal framework like the **Inter-State River Water Disputes Act, 1956** often result in prolonged litigation. Which creates burden on the judiciary and quasi judiciary bodies. Which creates need of an hour regarding the strong legal framework could provide clearer, enforceable solutions for equitable water distribution and not take much time to resolve the dispute.

Pollution Control - Indian rivers are severely polluted due to industrial discharge, sewage, and agricultural runoff and due to many of the other reasons and Existing laws (such as the **Water (Prevention and Control of Pollution) Act, 1974**) have been ineffective due to weak enforcement. A dedicated river law could introduce stricter penalties, real-time monitoring, and accountability mechanisms to prevent the degradation of the rivers.

Rights of Rivers – Many of the countries like countries (e.g., New Zealand, Ecuador) have granted rivers legal personhood, recognizing them as living entities. In India, Judiciary have attempted similar recognition (e.g., Uttarakhand High Court in 2017 for Ganga and Yamuna),

[41] Bandhua Mukti Morcha v. Union of India, (1984) 2 SCR 67 (India).
[42] India Const. art. 21.

but the decision lacked a legal framework for implementation and if this recognition takes place river must be granted with some special and specific right and a dedicated law could be channelized the **river rights**, ensuring their protection and prevent from degradation.

Climate Change Adaptation - Melting glaciers, erratic monsoons, and extreme weather events and sudden change in weather are prominent reasons that are altering river flows whereas floods and droughts require integrated basin-level planning and specific river law could mandate climate-resilient infrastructure and adaptive water management creates bodies to plan and tackle such situation.

Over-Extraction & Water Crisis – The ground water is very scarce resource and groundwater overuse has severely affected river flows (e.g., Yamuna and Ganga suffer from reduced flow due to excessive extraction) which creates problems related to ground water whereas industrialization affecting the ground water at prominent level and ground water is becoming polluted at serious level a legal framework could regulate **sustainable water use**, prioritizing drinking water, agriculture, and industry.

Central vs. State Jurisdiction Issues – Both Central Government and State Government are authorized to make laws related to river as Water is in the **State List** under the Constitution, while inter-state rivers fall under the **Union List**. But A specific law could clarify **federal responsibilities** and improve governance.

These are the prominent reasons which creates need of an hour why the specific river laws are necessary.

Conclusion

The need for specific river laws in India has become the need of the hour due to rising pollution, over-extraction, inter-state conflicts, and the adverse effects of climate change current laws are not sufficient to tackle these challenges. Despite existing regulations like the **Water (Prevention and Control of Pollution) Act, 1974** and the **Inter-State River Water Disputes Act, 1956**, enforcement remains weak, and governance is fragmented. Rivers are the lifelines of millions not only human but also the aquatic life as well, supporting drinking water supply, agriculture, industry, and biodiversity. However, unchecked industrial discharge, sand mining, encroachments, and unregulated dam construction have severely degraded river ecosystems. A

comprehensive **National River Protection Act** is essential to ensure sustainable water management, ecological conservation, and equitable distribution and protect the river from degradation. Recognizing rivers as **legal entities** with rights can further strengthen their protection. A dedicated legal framework should also enforce **minimum environmental flows (e-flows)**, regulate hydropower projects, and empower local communities in river conservation to ensure protection of the river water. Additionally, improved coordination between the **Centre and States** is crucial for effective governance which is need of an hour. Without immediate legal intervention, India's rivers and river water will continue to deteriorate, leading to severe water crises and ecological disasters. A strong river law will not only protect these vital resources but also secure the future of millions dependent on them.