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ABSTRACT

The Yamuna, one of India's most sacred and historically significant rivers, has undergone severe environmental degradation over the past several decades, despite repeated governmental assurances, large-scale financial outlays, and extensive judicial interventions aimed at its restoration. Successive governments at both the central and state levels have collectively spent thousands of crores of rupees across multiple action plans, including the Yamuna Action Plan I, II, and III, yet the river continues to remain one of the most polluted in the country, particularly across its 22-kilometre stretch through the national capital, New Delhi, which alone contributes nearly 80 percent of the river's total pollution load. This paper seeks to critically examine the reasons behind this paradox, why, despite billions being spent, the Yamuna remains ecologically dead along significant stretches of its course. Through a doctrinal and empirical research methodology, drawing upon government reports, judicial orders, environmental data, legislative records, and secondary literature, this study analyses the historical, geographical, and cultural significance of the Yamuna, traces the emergence and escalation of pollution, and evaluates the environmental, public health, and socio-economic consequences of its continued degradation. The paper undertakes a comprehensive assessment of governmental programmes and their outcomes, examines the role of the Supreme Court of India and the National Green Tribunal in enforcing environmental accountability, and investigates the contributions and limitations of civil society, non-governmental organisations, and citizen-led initiatives. The central argument advanced in this paper is that the failure to clean the Yamuna is not attributable to any single cause, but rather to a deeply entrenched combination of governance deficits, administrative fragmentation, inadequate infrastructure, weak inter-agency coordination, insufficient political will, and a persistent gap between policy formulation and on-ground implementation. The paper concludes with a set of evidence-based findings and actionable recommendations aimed at charting a credible and sustainable path toward the revival of the Yamuna, with particular emphasis on institutional reform, accountability mechanisms, and community participation.

KEYWORDS

Yamuna Pollution, Yamuna Action Plan, River Governance,

Environmental Law, Sewage Treatment, Judicial Intervention, National Green Tribunal, Urban Pollution, India

INTRODUCTION

The Yamuna River, the largest tributary of the Ganga and one of the most ancient and sacred rivers of the Indian subcontinent, is today confronting an ecological crisis of alarming proportions. Originating from the Yamunotri Glacier in the district of Uttarkashi, Uttarakhand, the river travels approximately 1,376 kilometres through the states of Uttarakhand, Himachal Pradesh, Haryana, Delhi, and Uttar Pradesh before confluencing with the Ganga at Prayagraj.[1] Along this journey, it has for centuries sustained cities, nourished agriculture, and provided water to an estimated 57 million people.[2] Revered in Hindu mythology as Yamuna Devi the daughter of Surya, the Sun God, and the twin sister of Yama, the God of Death the river is worshipped as a living deity by millions of Hindus across the country. Cities such as Mathura, Vrindavan, and Agra, which lie along its banks, are among the most sacred pilgrimage and cultural destinations in India, and the Triveni Sangam at Prayagraj where the Yamuna meets the Ganga is the epicentre of the Kumbh Mela, one of the largest religious gatherings in the world.[3] The Yamuna is thus not merely a geographical feature; it is a civilisational one a river inseparable from the spiritual, cultural, and historical identity of northern India.

Yet the river that was once described in early twentieth century accounts as flowing with clear blue waters is today effectively dead across significant stretches of its course.[4] The 22-kilometre stretch of the Yamuna passing through Delhi constituting less than two percent of the river's total length accounts for nearly 80 percent of its total pollution load.[5] By the time the river exits the capital, its dissolved oxygen levels fall to zero and its faecal coliform counts exceed 1.5 million MPN per 100 millilitres, against a permissible limit of 500 rendering it biologically lifeless.[6] What enters Delhi at Palla as a living river departs it as little

[1] Central Pollution Control Board, Water Quality Status of Yamuna River (1999–2005), Assessment and Development of River Basin Series: ADSORBS/41/2006-07 (New Delhi: Ministry of Environment and Forests, 2006), 3.
[2] 'Yamuna', Wikipedia, https://en.wikipedia.org/wiki/Yamuna (last visited June 24, 2026).
[3] 'Spiritual Importance of the Ganges and Yamuna in Hinduism', Soil2Soul Expeditions (October 9, 2024), https://www.soil2soulexpeditions.com/sacred-places/sacred-rivers-of-india.
[4] 'Pollution in the River Yamuna', Rejuvenation of the River Yamuna, National Informatics Centre, Government of India, https://yamuna-revival.nic.in/pollution-of-the-yamuna-section/ (last visited June 24, 2026).
[5] 'Yamuna', Wikipedia, https://en.wikipedia.org/wiki/Yamuna (last visited June 24, 2026).
[6] Central Pollution Control Board, Annual Report 2022–23 (New Delhi: Ministry of

more than a vast, open drain.

What makes this crisis particularly grave and the central paradox animating this paper is that this ecological collapse has occurred not in the absence of governmental effort, but in spite of it. The Yamuna Action Plan, first initiated in 1993, has seen over ₹8,000 crore spent on cleanup efforts across its successive phases, yet the river remains heavily polluted.[7]

A 2025 assessment by the Centre for Science and Environment revealed that ₹6,857 crore was spent between 2017 and 2022 alone to clean the 22-kilometre Delhi stretch, with no discernible improvement in water quality.[8] Judicial institutions have intervened repeatedly: the Supreme Court of India has issued directions, the National Green Tribunal has constituted monitoring committees, and the Delhi High Court engaged with the matter for over two decades yet the river remains in a state of crisis.[9] The question this paper seeks to answer is therefore not whether efforts have been made, but why those efforts have so comprehensively and consistently failed. As Sunita Narain, Director General of the Centre for Science and Environment, has observed, cleaning the Yamuna requires "much more than money it needs a reworked plan which will guide us towards thinking and acting differently."[10]

This paper undertakes a systematic and critical examination of this paradox. Through an analysis of governmental programmes, expenditure data, legislative and judicial records, environmental assessments, and existing scholarly literature, it seeks to identify the

Environment, Forest and Climate Change, 2023), cited in Naina Sharma, 'Yamuna River Pollution: Problem of Governance, Not Infrastructure', Ideas for India (July 8, 2025), https://www.ideasforindia.in/topics/environment/yamuna-river-pollution-problem-of-governance-not-infrastructure.

[7] 'Delhi Budget 2025: ₹500 Crore Allocated for Yamuna River Cleanup', Business Standard (March 25, 2025), https://www.business-standard.com/india-news/delhi-budget-2025-yamuna-cleanup-allocation-125032500530_1.html.

[8] Centre for Science and Environment, Yamuna: The Agenda for Cleaning the River (New Delhi: CSE, 2025), cited in 'Rs 6,857 Crore Spent to Clean 22-km Stretch in Four Years, But Yamuna Still a Dead River in Delhi', Kashmir Times (May 11, 2025), https://kashmirtimes.com/amp/story/opinion/comment-articles/rs-6857-crore-spent-to-clean-22-km-stretch-in-four-years-but-yamuna-still-a-dead-river.

[9] Suo Motu Petition No. 1 of 2021, Delhi Jal Board v. State of Haryana and Others, Supreme Court of India, Order dated February 2026, reported in 'Supreme Court Closes Suo Motu Case on Polluted Rivers', Verdictum (February 24, 2026), https://www.verdictum.in/court-updates/supreme-court/closes-suo-motu-proceedings-remediation-of-polluted-rivers-1608539.

[10] Sunita Narain, Statement at CSE Press Briefing on Yamuna: The Agenda for Cleaning the River, New Delhi, May 8, 2025, cited in 'Yamuna Can Be Cleaned, It Just Needs a Plan and Action with a Difference', Down to Earth (October 30, 2025), https://www.downtoearth.org.in/rivers/yamuna-can-be-cleaned-it-just-needs-a-plan-and-action-with-a-difference-cse.

structural, institutional, and governance-related reasons for the Yamuna's continued degradation. The study argues that the failure to restore the Yamuna is not attributable to any single cause, but to a deeply entrenched combination of administrative fragmentation, infrastructure deficiencies, weak inter-agency coordination, absence of political will, and a persistent gap between policy design and ground-level implementation, failures that no amount of financial allocation alone can remedy.

OBJECTIVES OF THE STUDY

The present study is guided by the following objectives:

- To trace the historical, geographical, and cultural significance of the Yamuna River and understand its importance to the communities and cities that depend upon it.
- To examine the nature, sources, and extent of pollution in the Yamuna River, with particular focus on the role of rapid urbanisation, industrialisation, unregulated sewage discharge, and encroachment.
- To assess the environmental, public health, and socio-economic consequences of the continued degradation of the Yamuna.
- To critically evaluate the governmental programmes and financial expenditures undertaken for the cleaning of the Yamuna, including the YAP I, II, and III, and to determine the extent to which these efforts have achieved their stated objectives.
- To examine the role of the judiciary, particularly the Supreme Court of India and the National Green Tribunal, in addressing Yamuna pollution, and to evaluate the degree of compliance with judicial directions by the relevant authorities.
- To offer evidence-based findings and actionable recommendations aimed at charting a credible and sustainable path toward the ecological revival of the Yamuna River.

RESEARCH METHODOLOGY

This study adopts a doctrinal and descriptive research methodology. The research is primarily qualitative in nature and is based on the collection, analysis, and synthesis of data drawn from a wide range of secondary sources.

The sources relied upon in this study include official government reports, parliamentary statements, budget documents, and press releases

issued by the Ministry of Jal Shakti, the Ministry of Environment, Forest and Climate Change, the Central Pollution Control Board, the Delhi Pollution Control Committee, and the Delhi Jal Board. Judicial orders and directions issued by the Supreme Court of India, the National Green Tribunal, and the Delhi High Court have also been examined and analysed as primary legal materials.

In addition, the study draws upon reports and assessments published by reputed environmental research organisations, including the Centre for Science and Environment and the Council on Energy, Environment and Water, as well as peer-reviewed academic literature published in recognised national and international journals. Legislative records, Right to Information responses, and news reports from credible media publications have been used where relevant to supplement the above sources.

The study does not involve primary data collection through surveys, interviews, or field investigations. The analysis is instead structured around a critical reading and synthesis of existing literature, data, and legal materials, with the aim of identifying patterns, gaps, and systemic failures in the governance of the Yamuna River.

The research follows an interdisciplinary approach, drawing from the fields of environmental law, public policy, urban governance, and ecological science, in order to offer a comprehensive and well-rounded examination of the research problem.

THE EMERGENCE AND GROWTH OF POLLUTION IN THE YAMUNA

The pollution of the Yamuna River is not a sudden crisis; it is the result of a decades-long process of accumulation, driven by explosive population growth, unchecked industrialisation, collapsing civic infrastructure, and a persistent failure of governance. Understanding how and why the river reached its present state requires tracing this trajectory carefully.

When Pollution Became a Major Concern

For much of its history, the Yamuna was a river of considerable ecological vitality. As recently as 1909, the waters of the Yamuna were distinguishable as clear blue when compared to the silt-laden yellow of the Ganga.[11] The river's decline began gradually in the early decades of the twentieth century, as Delhi grew from a colonial administrative

[11] 'Yamuna', Wikipedia, https://en.wikipedia.org/wiki/Yamuna (last visited June 24, 2026).

centre into one of the most densely populated cities in the world. However, it was not until the 1970s that the magnitude of degradation began to attract serious governmental attention. The Central Pollution Control Board conducted one of the earliest systematic studies of the river's condition in 1977–78, which formally identified domestic waste, industrial effluents, and agricultural runoff as the three principal sources of pollution.[12]

By the 1980s, the situation had deteriorated to a point that prompted the Government of India to initiate the Yamuna Action Plan in 1993, the first formal large-scale governmental programme aimed at the river's restoration. The fact that such a programme was considered necessary barely a century after the river's waters were described as clear blue speaks to the breathtaking speed of the Yamuna's decline.

Industrialisation and Urbanisation

The twin forces of rapid industrialisation and unplanned urbanisation are among the most significant drivers of the Yamuna's degradation. As Delhi expanded dramatically following independence, and particularly after the 1970s and 1980s, industrial units of every description proliferated along the river's banks and across its catchment area. Textile mills, chemical plants, pharmaceutical manufacturers, leather tanneries, paper and pulp factories, oil refineries, sugar industries, and thermal power plants all discharged their effluents, treated or otherwise, into the drains that ultimately fed into the Yamuna.[13] The river's tributaries and connecting drains became conduits for this industrial waste, carrying heavy metals including lead, cadmium, chromium, zinc, and arsenic into the river's waters, where they accumulated in the sediment and entered the food chain.

Urbanisation compounded this problem severely. Delhi's population, which stood at roughly four million at the time of independence, has grown to over thirty million today, and the city's infrastructure, particularly its drainage and sewerage networks, has never kept pace with this growth. Unplanned urbanisation has left millions living in unauthorised colonies off the grid, lacking essential pipelines or drainage, while the absence of sewage management allows waste to seep

[12] Central Pollution Control Board, Report on Pollution of the Yamuna River (New Delhi: CPCB, 1977–78), cited in 'What Are the Main Causes of Pollution in the Yamuna River?', Netsol Water (May 27, 2023), https://www.netsolwater.com/what-are-the-main-causes-of-pollution-in-yamuna-river.php?blog=5138.

[13] Central Pollution Control Board, Water Quality Status of Yamuna River (1999–2005), ADSORBS/41/2006-07 (New Delhi: Ministry of Environment and Forests, 2006), cited in DDA, A Case Study of the Yamuna River https://dda.gov.in/sites/default/files/Landescape/A_Case_study_Yamuna_River.pdf.

into the soil and poison groundwater reserves.[14] The consequences of this infrastructural deficit flow directly and literally into the Yamuna.

Sewage Discharge

Of all the sources of pollution burdening the Yamuna, untreated sewage discharge is by far the most significant. As of 2019, the river receives approximately 800 million litres of largely untreated sewage and an additional 44 million litres of industrial effluents each day, of which only 35 percent of the sewage is believed to be treated before discharge.[15] The drains of Delhi, particularly the Najafgarh drain, the largest in the city, carry the vast majority of this burden. The Najafgarh drain alone accounts for approximately 65 percent of Delhi's sewage load, and together with the Shahdara drain, the two account for nearly 84 percent of the Yamuna's total pollution load within the city. This sewage carries not only organic waste but also pathogens, nitrates, phosphates, and detergent compounds, the last of which produces the thick, toxic foam that has become a disturbing visual emblem of the river's condition, most vividly captured during the Chhath Puja celebrations of recent years when devotees are seen wading through froth-laden waters at the riverbank.

Encroachment and Waste Dumping

A less discussed but equally destructive dimension of the Yamuna's degradation is the systematic encroachment upon its floodplains and the indiscriminate dumping of solid waste along its banks. Extensive encroachment has consumed nearly 75 percent of the Yamuna's floodplains in Delhi, choking the natural flow of the river and causing water to stagnate in low-lying areas for weeks or even months, creating large pools of standing, polluted water.[16] These floodplains, which once served as natural buffers that absorbed floodwaters and supported diverse ecosystems, have been progressively built upon with roads, residential colonies, commercial establishments, and even public infrastructure constructed within what should be a protected riparian zone. Solid waste dumping along the riverbanks adds another layer of contamination, as plastic, construction debris, and household refuse are washed into the river during the monsoon season or leach toxins directly

[14] Harmeet Shah Singh, 'Millions of Delhi Residents Lost Water for Days. Some Say It's Still Toxic', CNN (January 31, 2026), https://www.cnn.com/2026/01/31/india/delhi-water-shortage-yamuna-pollution-intl-hnk-dst.

[15] 'Yamuna', Wikipedia, https://en.wikipedia.org/wiki/Yamuna (last visited June 24, 2026).

[16] Vikas Choudhary, 'Yamuna River in Delhi: How Encroachment Turned a Lifeline into Stagnant, Polluted Ponds', Down to Earth (April 2, 2026), https://www.downtoearth.org.in/rivers/yamuna-the-river-that-became-stagnant.

into the soil and groundwater.

Major Pollution Hotspots

The pollution of the Yamuna is not uniform across its course, it is concentrated at specific hotspots that have been consistently identified in environmental assessments and judicial proceedings. The most severely affected stretch is the 22-kilometre passage through Delhi between the Wazirabad barrage and the Okhla barrage, which, as noted, contributes nearly 80 percent of the river's total pollution load despite constituting barely two percent of its total length. Within this stretch, monitoring stations at Nizamuddin Bridge and downstream of the Okhla barrage record dissolved oxygen levels at or near zero, confirming that the river is biologically lifeless through this corridor. Beyond Delhi, the towns of Mathura and Vrindavan, sacred pilgrimage sites, represent another critical hotspot, where untreated sewage from rapidly growing urban populations continues to pour into the river. As recently as April 2026, the National Green Tribunal issued notices to the Central Government and the Government of Uttar Pradesh over alleged pollution in Mathura and Vrindavan, following a petition asserting that water quality in these stretches had deteriorated to Category D, rendering it unfit even for bathing.[17] Agra, home to the Taj Mahal, and Panipat and Sonipat in Haryana. with their dense industrial belts, similarly contribute disproportionate pollution loads to the river before it eventually joins the Ganga at Prayagraj.

What emerges from this account is a picture not of a single catastrophic event but of a slow, compound disaster, one produced by the convergence of industrial excess, urban disorder, infrastructure failure, and regulatory neglect, each reinforcing the other over decades, until a river once described as pristine was rendered, in the words of researchers, an open drain.

IMPACT OF YAMUNA POLLUTION

The consequences of the Yamuna's degradation are neither narrow nor contained. They extend far beyond the riverbanks, touching the ecological health of the region, the physical wellbeing of millions of people, the economic livelihoods of communities, and the spiritual and cultural life of a civilisation that has for centuries drawn its identity from this river.

[17] 'NGT Issues Notice to Centre and UP over Yamuna Pollution in Mathura, Vrindavan', Down to Earth (April 23, 2026), https://www.downtoearth.org.in/environment/ngt-issues-notice-to-centre-and-up-over-yamuna-pollution-in-mathura-vrindavan.

Environmental Impact

The most immediate and irreversible dimension of the Yamuna's pollution is its ecological destruction. The river that once supported a rich and diverse range of aquatic life, fish, turtles, migratory birds, amphibians, and riverine plant species, has been reduced, across significant stretches, to a biologically lifeless body of water. The river's oxygen levels have dropped to the point of creating dead zones where aquatic life cannot survive; iconic species including the Ganges River Dolphin and native fish populations are disappearing rapidly, while the toxic water and sediment have disrupted the balance of bird species, amphibians, and other wildlife that rely on the Yamuna for survival.[18] The mechanism of this destruction is well understood. Heavy metals lead, cadmium, arsenic, chromium, and mercury introduced through industrial effluents accumulate in the river's sediment and enter the food chain through bioaccumulation, affecting organisms at every trophic level. Phosphates from detergents and untreated sewage trigger eutrophication, causing explosive algal growth that further depletes the water's oxygen content and turns it into a dark, anaerobic sludge. The wetlands associated with the Yamuna, which once served as natural filters and biodiversity reserves, have been progressively destroyed through encroachment and contamination. Perhaps most alarmingly, the damage to the soil along the river's banks means that even agriculture traditionally sustained by the river's fertile floodplains is now at risk, as irrigation with polluted water introduces toxins directly into the food supply.

Public Health Concerns

The public health consequences of the Yamuna's pollution are severe and disproportionately borne by the most vulnerable segments of society. The river is the source of approximately 70 percent of Delhi's drinking water supply, which means that contamination of the Yamuna has a direct bearing on the quality of water that reaches millions of taps across the capital, even after treatment. Those living closest to the river, in unauthorised colonies and low-income settlements with limited access to treated water, face the greatest exposure to its toxins. Waterborne diseases cholera, dysentery, typhoid, and hepatitis are chronic afflictions in communities that depend on the river directly.[19] Beyond these

[18] 'The Effects of Yamuna River Pollution on Human Health and Ecosystems', Hari Yamuna Sehyog Samiti (December 16, 2024), https://hariyamuna.org.in/2024/12/16/the-effects-of-yamuna-river-pollution-on-human-health-and-ecosystems/.

[19] 'Yamuna River Pollution: Causes, Impact, and Solutions', Adroit Water Technologies, https://www.adroitwater.com/yamuna-river-pollution-causes-impact-and-solutions/ (last visited June 24, 2026).

immediate diseases, long-term exposure to heavy metals in the water carries more insidious health consequences. Research has documented that long-term exposure to heavy metal contamination in the Yamuna can result in neurological disorders, kidney damage, and various forms of cancer, with the ecological implications of such contamination being equally profound for aquatic organisms.[20]

The danger extends further into the food chain. A 2012 assessment by The Energy and Resources Institute found that agricultural soil along the Yamuna's banks contained levels of nickel, manganese, lead, and mercury above international safety standards, with vegetables grown in these soils carrying heavy metal residues that exceeded permissible limits meaning that the health risk is not confined to those who drink or bathe in the river, but extends to consumers of produce grown in its vicinity.[21]

Socio-Economic Consequences

The economic consequences of the Yamuna's degradation have fallen heavily upon those communities whose livelihoods are most directly tied to the river. A study by the Tata Centre for Development at the University of Chicago, examining data between 2008 and 2018, found that rising pollution in the Yamuna had a deeply negative socio-economic impact on several communities in Delhi, particularly among low-income groups; priests and boatmen in Yamuna Bazar reported that pollution was the main reason for a decline in visitors and devotees, adversely affecting their businesses, while farmers had become unable to grow certain crops, including watermelons, for over a decade due to the toxicity of the river water.[22] The economic burden of pollution is also felt at the household level, where families are forced to spend more on healthcare to treat waterborne illnesses and to purchase bottled water or pay premium rates for tanker water, expenditures that strain already limited budgets. The wider economy suffers too. Tourism in cities like Agra, home to the Taj Mahal and situated on the Yamuna's banks, is diminished by the river's visible degradation. Delhi's capacity to provide clean drinking water to its residents is undermined by the scale of river

[20] Sharma et al., 'The Yamuna's Struggle with Pollution (2014–2024)', Pollution Study 6(2) (2025): 3199, https://aber.apacsci.com/index.php/ps/article/viewFile/3199/3752.

[21] Meena Palaniappan et al., 'Toxic Water, Toxic Crops: India's Public Health Time Bomb', New Security Beat, Wilson Center (January 2019), https://www.newsecuritybeat.org/2019/01/toxic-water-toxic-crops-indias-public-health-time-bomb/.

[22] 'Delhi: How Polluted Yamuna Shrunk Livelihoods, Left Many Poorer', Tata Centre for Development, University of Chicago in India, https://uchicago.in/news/delhi-how-polluted-yamuna-shrunk-livelihoods-left-many-poorer (last visited June 24, 2026).

contamination, necessitating ever-greater expenditure on water treatment infrastructure. The river's ecological degradation thus functions as a tax on the poor and a drag on the regional economy, costs that never appear in the accounting of cleanup expenditure but are borne silently by millions.

Public Concerns During Major Religious Gatherings and Mass Bathing Events

Nowhere is the contradiction between the Yamuna's sacred status and its degraded reality more painfully visible than during the major religious festivals that draw millions of devotees to its banks each year. The Chhath Puja, one of the most significant festivals in the Hindu calendar, dedicated to the worship of the Sun God and observed with particular fervour by communities from Bihar, Jharkhand, and eastern Uttar Pradesh, requires devotees to immerse themselves in the river's waters as a central act of worship. Yet for years, this act of devotion has been performed not in a sacred river but in what environmental experts have described as toxic water. During the Chhath Puja of November 2024, thick layers of toxic foam, a hazardous byproduct of chemical pollution from untreated sewage and industrial waste, were seen covering the Yamuna's surface near Kalindi Kunj, as thousands of devotees gathered to offer prayers and perform ritual baths, raising immediate alarms among environmentalists and public health experts.[23]

This was not an isolated incident; the toxic foam has become a grim annual spectacle, repeating itself with the predictability of the festival calendar itself. In November 2024, the Delhi High Court dismissed a Public Interest Litigation seeking to allow Chhath Puja at specific ghats on the Yamuna, upholding a ban on the ground that devotees could fall seriously ill from bathing in the toxic water.[24]

The distress of devotees compelled to choose between their faith and their safety is a powerful moral indictment of the state's failure to protect one of its most important public resources. The foam-covered Yamuna during Chhath Puja has also become a recurring political flashpoint, with competing governments trading blame while the river itself remains unchanged. That a river worshipped as a goddess should be deemed by a court of law as too dangerous for human contact during a religious festival is perhaps the starkest possible measure of how comprehensively

[23] 'Chhath Puja 2024: Toxic Foam on Yamuna in Delhi Raises Concerns', Odisha TV (November 4, 2024), https://odishatv.in/news/festivals-events/chhath-puja-2024-toxic-foam-on-yamuna-in-delhi-raises-concerns-248105.

[24] 'Toxic Yamuna: Decades of Clean-Up Failures Turn Sacred Chhath Festival into Political Battleground', The Daily Pioneer (October 24, 2025), https://www.dailypioneer.com/2025/india/toxic-yamuna-decades-of-clean-up-failures-turn-sacred-chhath-festival-into-political-battleground.html.

the institutions of governance have failed this river and the people who depend upon it.

GOVERNMENT EFFORTS TO CLEAN THE YAMUNA

The story of the Indian state's engagement with the Yamuna's pollution is, in many respects, a story of ambitious promises, substantial expenditure, and persistently inadequate outcomes. Across more than three decades, successive governments at the central and state levels have launched large-scale programmes, constructed extensive infrastructure, and allocated thousands of crores of public money toward the river's restoration. That the Yamuna remains as polluted as ever is not for want of governmental attention, it is, as this section demonstrates, the result of a fundamental gap between the ambition of these programmes and the rigour of their implementation.

The Yamuna Action Plan: Phases I, II, and III

The Yamuna Action Plan, the cornerstone of India's effort to restore the river, is a bilateral programme between the Governments of India and Japan, financed substantially through concessional loans from the Japan International Cooperation Agency. Formally launched in April 1993, the YAP is one of the largest river restoration projects ever undertaken in India, with its implementation entrusted to the National River Conservation Directorate under the Ministry of Environment and Forests.[25]

Phase I of the YAP ran from 1993 to 2003, three years beyond its originally scheduled completion date of 2000, owing to the inclusion of additional works directed by the Supreme Court and the Government of India. The sanctioned cost of Phase I was ₹705.51 crore, against which an expenditure of ₹682 crore was ultimately incurred.[26] Under this phase, 29 sewage treatment plants with a combined treatment capacity of 725.79 million litres per day were constructed across Uttar Pradesh, Haryana, and Delhi. The plan also included the construction of pumping stations, low-cost sanitation facilities, riverfront development works, and public awareness programmes. Haryana recorded some improvement in river water quality under this phase; in Delhi, however, the outcomes were negligible, with the river failing to meet even the most basic water quality standards by the time the phase concluded.

Phase II, launched in 2003, sought to build upon Phase I with a renewed

[25] 'Yamuna Action Plan', Wikipedia, https://en.wikipedia.org/wiki/Yamuna_Action_Plan (last visited June 24, 2026).
[26] 'Ganga and Yamuna Action Plan', Press Information Bureau, Government of India, https://www.pib.gov.in/newsite/PrintRelease.aspx?relid=79010 (last visited June 24, 2026).

focus on the critical 22-kilometre Delhi stretch. New sewage treatment capacity of 189 MLD was created in Uttar Pradesh and Delhi, while 273 MLD of existing treatment capacity in Delhi was refurbished and upgraded. Together, Phases I and II resulted in the completion of 286 schemes across 21 towns in Delhi, Uttar Pradesh, and Haryana at a cumulative cost of approximately ₹1,514 crore, yet independent assessments consistently found that the river's biological oxygen demand, dissolved oxygen levels, and coliform counts had not improved in any meaningful way. Installed plants operated erratically; many received far less sewage than they were designed to treat, because the sewer networks that were supposed to channel waste to them remained incomplete; and treated effluents were discharged back into already-polluted drains, negating the benefit of treatment entirely.

Phase III was approved in 2011 and commenced major works from 2017–18, with a total estimated cost of ₹1,656 crore, of which 85 percent, approximately ₹1,407 crore, was funded by JICA through the Government of India, and the remaining 15 percent by the Government of the National Capital Territory of Delhi.[27] The focus of Phase III was squarely on the rehabilitation and upgradation of the existing wastewater treatment plants at Kondli, Rithala, and Okhla in Delhi, as well as the construction of new treatment infrastructure at Okhla. Despite this substantial investment, progress was stalled repeatedly by delays in land acquisition, contractor disputes, and the disruption caused by the COVID-19 pandemic. By 2025, over ₹1,000 crore had been spent under this phase, yet the river's condition in the Delhi stretch remained critically polluted.

River Cleaning Programmes and Sewage Treatment Projects

Beyond the YAP, the Government of India has pursued river restoration through a broader programmatic framework. The National River Conservation Plan, initiated in the early 1990s, provided the umbrella under which the YAP was situated. More significantly, the Namami Gange Programme, launched in June 2014 as an integrated conservation mission with an initial budgetary outlay of ₹20,000 crore, later extended to ₹22,500 crore, brought renewed central government attention to the cleaning of the Ganga and its tributaries, including the Yamuna. Under the Namami Gange Programme, 200 sewerage infrastructure projects including one decentralised modular project have been sanctioned at a total cost of ₹31,810 crore, of which 116 have been completed and made

[27] 'Yamuna Action Plan Phase III: Impact on Water Quality of River Yamuna', Wiser Publications, https://wiserpub.com/uploads/1/20211112/a8558b4d143bb818037e2c56335a3ad3.pdf.

operational.[28] A landmark achievement under this programme was the commissioning in 2025 of what has been described as Asia's largest sewage treatment plant in Delhi, with a capacity of 564 MLD, at a cost of ₹666 crore. At the state level, the Delhi government in its 2025–26 budget allocated ₹500 crore specifically toward cleaning the Yamuna, alongside ₹500 crore for the repair and upgradation of sewage treatment plants and ₹250 crore for replacing old sewer lines, reflecting the continued urgency that the river commands in political and fiscal planning.

Expenditure and Budgetary Allocations

The aggregate financial outlay directed toward the Yamuna's restoration, when viewed in its totality, is staggering. Across the three phases of the YAP alone, cumulative expenditure exceeded ₹1,500 crore. The Namami Gange Programme has seen disbursements of over ₹21,340 crore since its inception in 2014. The Delhi government between 2017 and 2022 spent more than ₹6,857 crore on cleaning the 22-kilometre Delhi stretch alone. When one adds to these figures the expenditures under the National River Conservation Plan, the Interceptor Sewer Project, the Delhi Jal Board's own capital works, and the numerous state-level allocations over three decades, the total amount spent on the Yamuna's restoration runs into tens of thousands of crores, making it one of the most expensively managed environmental failures in the country's history.

Assessment of Outcomes

The outcomes of these sustained governmental efforts, when assessed against the stated objectives of clean and ecologically viable river water, can only be described as deeply disappointing. A 2024 report of the Parliamentary Standing Committee on Water Resources found that between 2021 and 2023, out of 33 monitored locations along the Yamuna, water quality at 23 locations did not comply with the Primary Water Quality Criteria for Outdoor Bathing, and dissolved oxygen levels in Delhi were found to be virtually non-existent.[29] The Committee further observed that sewage treatment plants across Yamuna basin states were functioning well below their optimum utilisation capacity, and that of the industrial clusters in Delhi discharging wastewater into the river and its tributaries, the common effluent treatment plants connected to them were operating at only 32 percent of capacity.

The Comptroller and Auditor General of India has also examined the

[28] 'Namami Gange Programme', National Mission for Clean Ganga, Ministry of Jal Shakti, Government of India, https://nmcg.nic.in/NamamiGanga.aspx (last visited June 24, 2026).
[29] Standing Committee on Water Resources, Review of Upper Yamuna River Cleaning Projects up to Delhi and Riverbed Management in Delhi

implementation of these river cleaning programmes and returned sobering findings. A CAG performance audit found that out of 46 sewage treatment plant and interception-and-diversion projects costing ₹5,111 crore under the Namami Gange Programme, 26 projects costing ₹2,710 crore suffered significant delays caused by delayed execution, non-availability of land, and slow progress by contractors.[30] Earlier audit reports had similarly found that Delhi Jal Board generated only partial sewage treatment capacity relative to funds disbursed, and that more than 50 percent of the city's sewage was being discharged untreated into the Yamuna despite the construction of numerous treatment facilities.

What these assessments collectively reveal is a pattern not of complete governmental inaction, but of structurally flawed action, characterised by poorly coordinated implementation, inadequate maintenance of completed infrastructure, incomplete sewer networks that prevent sewage from reaching treatment plants, and a persistent failure to address the informal settlements and unauthorised colonies that contribute disproportionately to the river's pollution load. External evaluations by JICA itself have noted that despite sewage treatment plant BOD removal efficiencies of 77 to 98 percent, unaddressed upstream inputs and collection inefficiencies continue to undermine downstream recovery, leaving the Yamuna classified as critically polluted across its priority stretches.[31] In short, the Government of India and the governments of the riparian states have succeeded in building infrastructure; what they have failed to do is govern it.

JUDICIAL INTERVENTION AND ENVIRONMENTAL GOVERNANCE

Of all the institutions that have engaged with the crisis of the Yamuna's pollution, it is perhaps the judiciary that has been the most persistent, the most vocal, and, paradoxically, among the least effective in producing lasting change on the ground. For over three decades, the Supreme Court of India, the National Green Tribunal, and the Delhi High Court have collectively issued hundreds of directions, constituted monitoring committees, imposed environmental compensation, and repeatedly hauled government agencies before them to answer for their failures. That the river remains as polluted as ever is not a reflection of judicial passivity, it is a testament to the depth of the governance crisis that no amount of judicial attention alone has been able to resolve. This section

[30] Comptroller and Auditor General of India, Performance Audit Report on Rejuvenation of River Ganga (Namami Gange) (New Delhi: CAG, December 19, 2017), summarised in PRS Legislative Research, https://prsindia.org/policy/report-summaries/audit-namami-gange.

[31] 'Yamuna Action Plan', Grokipedia (January 14, 2026), https://grokipedia.com/page/Yamuna_Action_Plan.

examines the legal framework governing environmental protection in India, traces the arc of judicial intervention in the Yamuna's case, analyses the important principles and landmark cases that have shaped this intervention, and evaluates the degree to which judicial directions have been complied with in practice.

The Relevant Legal Framework

The legal architecture for environmental protection in India rests on a constitutional foundation as well as a body of statutory law. At the constitutional level, Article 48A, inserted by the 42nd Amendment of 1976, directs the State to protect and improve the environment and to safeguard the forests and wildlife of the country. Article 51A(g) correspondingly imposes a fundamental duty upon every citizen to protect and improve the natural environment, including forests, lakes, rivers, and wildlife. These provisions, read together with Article 21, which guarantees the right to life and personal liberty, have been interpreted by the Supreme Court to encompass the right to a clean and pollution-free environment as an inseparable element of the right to life itself.

At the statutory level, the primary legislation governing water pollution is the Water (Prevention and Control of Pollution) Act, 1974, which established the Central Pollution Control Board and the State Pollution Control Boards and conferred upon them extensive powers to prevent and abate water pollution. The Environment (Protection) Act, 1986, enacted in the aftermath of the Bhopal Gas Tragedy, provided a broader and more comprehensive framework for environmental regulation, conferring upon the Central Government wide powers to take measures to protect and improve the quality of the environment. The National Green Tribunal Act, 2010, established the National Green Tribunal as a specialised adjudicatory body for the effective and expeditious disposal of cases relating to environmental protection and the conservation of natural resources. These three statutes, together with the constitutional provisions, form the primary legal framework within which judicial intervention in the Yamuna's case has unfolded.

Important Environmental Principles

Before examining the case law, it is essential to understand the key environmental principles that the Indian judiciary has developed and applied in the context of river pollution, principles that have become foundational to environmental jurisprudence in India.

The first and most foundational is the right to a clean environment as a

facet of Article 21. In *Subhash Kumar v. State of Bihar (1991)*,[32] the Supreme Court held that the right to life guaranteed by Article 21 includes the right to the enjoyment of pollution-free water and air for the full enjoyment of life. This was a watershed moment, it transformed environmental protection from a policy aspiration into a justiciable fundamental right.

The second is the Polluter Pays Principle, which holds that the party responsible for pollution bears the full cost of remediation, not merely paying fines, but actively restoring the environment to its pre-pollution state. As interpreted by the Supreme Court, the absolute liability for harm to the environment extends not only to compensating the victims of pollution but also to bearing the cost of restoring environmental degradation, with remediation of the environment forming part of the process of sustainable development.[33] This principle was decisively applied in Indian Council for Enviro-Legal Action v. Union of India (1996) and has since been invoked repeatedly in the Yamuna context.

The third is the Precautionary Principle, which requires that where there is a threat of serious or irreversible environmental damage, the absence of full scientific certainty shall not be used as a reason for postponing preventive measures. It is the social responsibility of the State to protect the public from any plausible risk, and measures must be taken to anticipate and prevent the causes of environmental degradation even in the absence of conclusive scientific evidence.[34] This principle was formally incorporated into Indian environmental law in *Vellore Citizens Welfare Forum v. Union of India (1996)*.

The fourth is the Public Trust Doctrine, which holds that certain natural resources rivers, water bodies, forests, and air are held by the State in trust for the benefit of the general public, and that the State cannot permit their commercial exploitation or degradation. The doctrine was applied in the Indian context most powerfully in *M.C. Mehta v. Kamal Nath (1997)*, where the Supreme Court held that the State, as a trustee, is under a legal duty to protect these resources from degradation.

Supreme Court Interventions and Important Case Laws

The Supreme Court's engagement with the Yamuna's pollution has been

[32] Subhash Kumar v. State of Bihar, (1991) 1 SCC 598, Supreme Court of India.
[33] Indian Council for Enviro-Legal Action v. Union of India, (1996) 3 SCC 212, Supreme Court of India, cited in 'Article 21 of the Indian Constitution, A Mandate to Pollution Free Environment', Legal Service India, https://www.legalserviceindia.com/article/l399-A-Mandate-To-Pollution-Free-Environment.html.
[34] 'Right to Clean Environment', Drishti IAS, https://www.drishtiias.com/daily-news-analysis/right-to-clean-environment (last visited June 24, 2026).

sustained, multifaceted, and stretches across more than four decades of litigation.

The foundational litigation in this domain is the series of public interest petitions filed by environmental lawyer M.C. Mehta beginning in 1984–85. *M.C. Mehta v. Union of India* (Writ Petition (Civil) No. 3727 of 1985), the Ganga Pollution Case, was a landmark PIL in which the Supreme Court directed the closure of polluting industries discharging untreated effluents into the Ganga and its tributaries, including the Yamuna, and mandated the installation of effluent treatment plants.[35] Through this case, the Court pioneered the doctrine of continuing mandamus, the practice of keeping a petition open and periodically reviewing compliance with its directions rather than disposing of the matter with a single final judgment. This was a transformative innovation in environmental jurisprudence, enabling the Court to function as a long-term supervisor of environmental compliance.

A related and equally significant PIL is Writ Petition (Civil) No. 4677 of 1985, also filed by M.C. Mehta, which initially concerned stone-crushing units in Delhi but evolved over time to encompass Yamuna pollution, leading to directions for the setting up of sewage treatment plants and common effluent treatment plants in the capital. Through these early interventions, the Supreme Court established the principle that the right to a clean environment was non-negotiable and that the executive's failure to enforce environmental law would be corrected by judicial direction.

In M.C. Mehta v. Union of India (1996), the Taj Trapezium Case, the Supreme Court applied the precautionary principle and the polluter pays principle to ban the use of coal and coke in industries within the Taj Trapezium Zone, a 10,400 square kilometre area around the Taj Mahal, directing industries to switch to compressed natural gas, in order to protect the monument and the surrounding environment, including the Yamuna, from further degradation.[36]

In 1994, a newspaper report on the state of the Yamuna caught the Supreme Court's attention, leading to the registration of Writ Petition No. 725 of 1994, a case that kept the Court directly seized of Yamuna pollution for nearly two decades. Through numerous orders in this

[35] M.C. Mehta v. Union of India, Writ Petition (Civil) No. 3727 of 1985 (Ganga Pollution Case), Supreme Court of India, cited in M.C. Mehta Environmental Foundation, 'Landmark Judgments', https://mcmef.org/landmark-judgments/ (last visited June 24, 2026).

[36] M.C. Mehta v. Union of India, (1997) 2 SCC 353 (Taj Trapezium Case), Supreme Court of India, cited in 'M.C. Mehta v. Union of India and Others', Wikipedia, https://en.wikipedia.org/wiki/M._C._Mehta_v._Union_of_India_and_Others (last visited June 24, 2026).

matter, the Court in 2004 constituted a committee to oversee the bridging of the gap between sewage generation and treatment capacity in Delhi, and repeatedly directed the governments of Delhi, Haryana, and Uttar Pradesh to take concrete steps toward the river's restoration.[37] By 2012, having spent over ₹4,400 crore over eighteen years with no discernible improvement in the river's condition, the Court itself was asking why the Yamuna was still polluted a question that remains unanswered to this day. The case was subsequently transferred to the National Green Tribunal.

Most recently, in *Delhi Jal Board v. State of Haryana* (Suo Motu Writ Petition No. 1 of 2021), the Supreme Court took suo motu cognizance of the remediation of polluted rivers after a petition by the Delhi Jal Board related to increased ammonia levels in the Yamuna, issuing notices to the states of Uttarakhand, Himachal Pradesh, Haryana, Delhi, and Uttar Pradesh, and reaffirming that the right to live in a clean environment and hygienic conditions is a fundamental aspect of Article 21 of the Constitution.[38] In February 2026, the Court closed these suo motu proceedings after five years, directing the NGT to resume its role as the primary monitoring authority, noting that multiple parallel proceedings had created confusion and hindered progress on the ground.

A remarkable, if legally short-lived, intervention came from the Uttarakhand High Court in March 2017, when in *Mohd. Salim v. State of Uttarakhand* it declared the Ganga and Yamuna rivers to be living entities with the same legal rights as human beings, appointing the Chief Secretary and Advocate General of Uttarakhand as their legal custodians. The Supreme Court stayed this order in July 2017, holding that the declaration of legal personhood to natural entities required legislative, not judicial, authorisation, though the Court acknowledged that the protection of these rivers was of utmost national importance.[39] The episode, though ultimately reversed, reflected the growing judicial frustration with the inadequacy of conventional legal remedies in

[37] 'Fight Over Yamuna a Poll Gimmick? River Can Be Revived, but There Can't Be a Band Aid Solution', The Print (February 4, 2025), https://theprint.in/politics/fight-over-yamuna-a-poll-gimmick-river-can-be-revived-but-there-cant-be-a-band-aid-solution/2477435/.

[38] Delhi Jal Board v. State of Haryana, Suo Motu Writ Petition (Civil) No. 1 of 2021, Supreme Court of India, Order dated January 13, 2021, reported in Verdictum (February 24, 2026), https://www.verdictum.in/court-updates/supreme-court/closes-suo-motu-proceedings-remediation-of-polluted-rivers-1608539.

[39] Mohd. Salim v. State of Uttarakhand, Writ Petition (PIL) No. 126 of 2014, Uttarakhand High Court, Order dated March 20, 2017, stayed by the Supreme Court of India on July 7, 2017, reported in 'India Supreme Court Case: Salim v. State of Uttarakhand', Eco Jurisprudence Monitor, https://ecojurisprudence.org/initiatives/salim-v-state-of-uttarakhand/.

addressing the rivers' crisis.

NGT Interventions

The National Green Tribunal, established under the National Green Tribunal Act, 2010, has assumed a central and deeply engaged role in monitoring the Yamuna's restoration. Its most significant intervention arose from Manoj Mishra v. Union of India and Others (Original Application No. 6 of 2012), a case filed by a concerned citizen and Yamuna activist that detailed the rampant pollution of the river and the systematic encroachment of its floodplains. In a landmark judgment delivered on January 13, 2015, spanning almost one hundred pages, the NGT issued an ambitious road map for the river's restoration under the title "Maili se Nirmal Yamuna Revitalisation Project, 2017", holding that any further deferment in taking stern steps to prevent and control pollution of the Yamuna was bound to expose Delhi and its residents to grave environmental disasters.[40] Through this judgment, the NGT constituted a Yamuna Monitoring Committee to oversee the execution of its directions, mandated specific timelines for sewage treatment infrastructure, prohibited construction on the river's floodplains, imposed fines for the dumping of solid waste and debris, and directed all concerned agencies, including the Delhi Jal Board, the DDA, the Municipal Corporations, and the governments of Haryana and Uttar Pradesh, to file action-taken reports.

The NGT also applied the Polluter Pays Principle aggressively in the Yamuna context, imposing environmental compensation on municipalities, industrial units, and government agencies that failed to prevent untreated sewage and effluents from entering the river. The Tribunal fined the Delhi Jal Board and the Municipal Corporation of Delhi for negligence regarding sewage and industrial waste discharge, and in the Art of Living Foundation case of 2016, held the Foundation liable for environmental damage caused by a large cultural event organised on the Yamuna's floodplains. The NGT's orders have repeatedly stressed the collective failure of all concerned authorities to discharge their legal duties, a finding that sits at the heart of the Yamuna's unresolved crisis.

Evaluation of Compliance with Judicial Directions

Despite the volume, specificity, and sustained nature of judicial

[40] Manoj Mishra v. Union of India and Others, Original Application No. 6 of 2012, National Green Tribunal, Judgment dated January 13, 2015, discussed in Manoj Misra, 'NGT Orders Maily se Nirmal Yamuna', SANDRP (February 14, 2015), https://sandrp.in/2015/02/14/ngt-orders-maily-se-nirmal-yamuna-will-this-lead-to-a-rejuvenated-yamuna/.

directions across both the Supreme Court and the NGT, compliance by the relevant governmental authorities has been consistently poor. The NGT itself, in its foundational 2015 judgment, held that the authorities had failed to properly implement plans and discharge their legal duties, while citizens had failed their fundamental duty to protect the environment, a finding that encapsulates the comprehensive nature of this institutional failure.[41]

The pattern of non-compliance is well documented. Deadlines set by the NGT for the completion of sewage treatment plants and interceptor projects have passed repeatedly without fulfilment. Monitoring committees have found that their directions are defied by agencies that continue to discharge untreated sewage into the river. Environmental compensation imposed by the Tribunal is often contested in appeals, delaying actual payment and restoration. The governments of Delhi, Haryana, and Uttar Pradesh have frequently blamed each other for the river's condition, while the fragmented institutional landscape, with responsibilities divided among the Delhi Jal Board, the DDA, the DPCC, multiple municipal corporations, and state governments, ensures that no single authority can be held definitively accountable.

The fundamental tension revealed by this pattern is one between the power of judicial direction and the limits of judicial enforcement. Courts can order; they cannot construct sewage treatment plants, retrain bureaucracies, or compel inter-governmental cooperation by fiat. The Yamuna's judicial history ultimately demonstrates that law, however robustly interpreted and applied, cannot substitute for the institutional will and administrative capacity that genuine environmental governance requires.

WHY HAS THE YAMUNA NOT BEEN CLEANED DESPITE BILLIONS BEING SPENT?

This is the central question of the present study, and it is one that demands more than a cataloguing of failures. It demands a structural diagnosis, an examination of the systemic conditions that have allowed a well-funded, judicially supervised, and politically prominent river cleaning effort to produce, over more than three decades, virtually no improvement in the river's ecological condition. The answer, this paper argues, lies not in any single cause but in the convergence of several deeply entrenched pathologies: a persistent gap between policy design and implementation, fragmented and unaccountable administrative structures, infrastructure that is built but not governed, the near-total

[41] Manoj Mishra v. Union of India and Others, Original Application No. 6 of 2012, National Green Tribunal, Judgment dated January 13, 2015, summarised in 'Yamuna River Pollution Case Review', Scribd.

absence of political will that transcends electoral cycles, and the failure to treat public participation as anything more than a rhetorical flourish. Each of these dimensions is examined below.

Gap Between Policy and Implementation

The history of the Yamuna's cleanup is, above all else, a history of well-designed plans that were never seriously implemented. The Yamuna Action Plan, across all three of its phases, was architecturally sound. It identified the correct sources of pollution, prescribed the appropriate remedial measures, and secured international financing. What it did not do, and what no subsequent plan has done, is ensure that what was built was also operated, maintained, connected, and monitored to a standard that would actually reduce the river's pollution load.

The Centre for Science and Environment has identified three core weaknesses running through Delhi's approach to the Yamuna: a lack of accurate data on wastewater generation owing to outdated population figures and untracked groundwater extraction; a heavy dependence on non-sewered areas on desludging tankers whose discharge is unmonitored and often ends up in drains rather than treatment plants; and the mixing of treated and untreated sewage in Delhi's 22 major drains, which negates the benefit of any treatment that has already taken place.[42] These are not technical problems that require sophisticated solutions, they are planning failures that reflect the absence of integrated thinking between sewage generation, sewage collection, sewage treatment, and sewage discharge. The policy has consistently focused on building treatment capacity while ignoring the systems that would actually deliver sewage to that capacity and safely remove treated water from contaminated drains.

The result is a situation in which infrastructure exists on paper and in practice in ways that are fundamentally disconnected. Delhi's 37 sewage treatment plants, installed at enormous public expense, cannot clean the Yamuna if the sewage generated in unauthorised colonies never reaches them. Plans that are formulated in air-conditioned offices, without adequate field data and without the participation of the communities most affected, are plans that are structurally incapable of succeeding.

Administrative Failures

The administrative failure at the heart of the Yamuna's crisis is one of fragmentation and unaccountability. Multiple agencies hold overlapping

[42] Centre for Science and Environment, Yamuna: The Agenda for Cleaning the River (New Delhi: CSE, 2025), discussed in 'Rethinking Yamuna Clean-Up: CSE Addresses Gaps in Action', Down to Earth.

and often conflicting responsibilities for the river: the Delhi Jal Board manages sewage treatment plants and sewerage; the Municipal Corporations maintain many stormwater drains; the Delhi Development Authority controls riverfront land; the Delhi Pollution Control Committee and the Central Pollution Control Board regulate effluent compliance; and the Upper Yamuna River Board oversees upstream water-sharing, and this institutional maze has resulted in poor coordination and limited accountability.[43] The consequence is predictable and well-documented: when the Yamuna's condition is raised before any one of these agencies, each points to the others as responsible. The Delhi Jal Board builds treatment plants; the Municipal Corporation fails to maintain the drains that would channel sewage to them. The DPCC penalises non-compliant plants; the DJB appeals the penalties. The central government releases funds; the state government delays execution. No single authority owns the problem, and therefore no single authority can be held accountable for its resolution.

This fragmentation is compounded by the absence of a unified data system. Different agencies report different figures on sewage generation, treatment capacity, and water quality and these discrepancies are not resolved because no overarching authority exists to insist on a common standard of measurement. The result, as the CSE has noted, is that the government may sincerely believe it is treating a far higher proportion of sewage than it actually is, because its calculations are based on projected population figures and do not account for the vast volumes of groundwater extracted and consumed outside the official water supply network.

Infrastructure Deficiencies

While it is accurate to say that the Yamuna's failure is primarily a governance failure rather than an infrastructure failure, it would be incomplete to suggest that the infrastructure is adequate. Significant gaps persist. A February 2026 inspection by the Delhi Pollution Control Committee, ordered by the Central Government, found that the Delhi Jal Board's flagship Interceptor Sewage Project, which had consumed over ₹2,454 crore across two decades, was capturing only 60 percent of the sewage volume the DJB had claimed it was preventing from entering the Yamuna; flow meters were installed at only 12 interception points, of which four were already defunct; and CCTV cameras were found non-operational at the majority of locations where they had supposedly been installed.[44] This is not a picture of functioning infrastructure being

[43] Naina Sharma, 'Yamuna River Pollution: Problem of Governance, Not Infrastructure', Ideas for India (July 8, 2025).
[44] 'Yamuna Cleanup Falls Short Despite ₹2,454 Crore Spent on Delhi Jal Board Project', Outlook Business (April 17, 2026),

undermined by poor governance alone, it is a picture of infrastructure that was never properly built, commissioned, or maintained, accompanied by data that was falsified or inflated to conceal these deficiencies from regulators and courts.

The problem extends to the sewage treatment plants themselves. Many older plants cannot meet the stricter effluent standards that Delhi introduced in recent years without significant upgrades, and those upgrades have proceeded slowly. In several cases, treated effluents from plants are discharged back into the same open drains through which untreated sewage flows, so the benefit of treatment is immediately negated. And a substantial portion of Delhi's population living in unauthorised colonies and informal settlements remains entirely unconnected to the sewerage network, meaning their waste bypasses the treatment system entirely regardless of how many treatment plants are constructed.

Governance Challenges

Beyond administrative fragmentation and infrastructure deficiency lies a deeper and more intractable governance challenge: the absence of sustained political will. Every government that has held power in Delhi, whether the Congress, the Aam Aadmi Party, or the Bharatiya Janata Party, has made the cleaning of the Yamuna a central electoral promise and has presided over a river that remained or worsened in its pollution under its watch.

This pattern is not incidental. It reflects the structural incentives of Indian electoral politics, in which environmental outcomes are long-term, diffuse, and technically complex, while electoral rewards are short-term, visible, and easily communicated. Building a new sewage treatment plant generates a ribbon-cutting opportunity; ensuring that the plant operates efficiently for a decade, that the sewer network reaches informal settlements, and that treated effluent is separated from untreated drains does not. The result is a systematic bias toward infrastructure construction over operational governance, toward announcements over outcomes. As one public policy analyst has observed, as of August 2025 Delhi faced a sewage treatment shortfall of 414 million litres per day, because the city continues to release far more sewage and industrial waste into the river than it can possibly treat, while government data shows the Yamuna entering Delhi relatively clean and leaving it poisoned, a civic and governance failure of staggering proportions.[45]

https://www.outlookbusiness.com/news/yamuna-cleanup-fails-djb-2454-crore-sewage-project.

[45] Sanjeev Jha, 'The Yamuna's Decline Is Delhi's Mirror, And Citizens Can No Longer

The inter-state dimension of governance failure is equally important. The Yamuna flows through five states, and the responsibilities for preventing pollution are distributed among all of them. Delhi routinely blames Haryana for discharging industrial pollutants upstream; Haryana points to Delhi's own sewage discharges; Uttar Pradesh is criticised for the condition of the river in Mathura and Agra. In the absence of an empowered inter-state body with the authority to enforce pollution norms across all riparian states simultaneously, each state has the political incentive to externalise its responsibilities and internalise its failures.

Public Participation and Accountability

One of the most consistently noted and consistently neglected dimensions of the Yamuna's failure is the near-total absence of meaningful public participation in river governance. The Yamuna Action Plan included public awareness components, but these were marginal to the programme's core activities and left no lasting institutional architecture for citizen engagement. Decades of governmental effort have proceeded in an essentially top-down manner, plans made by bureaucracies, implemented by agencies, monitored by courts, with the public as passive observers rather than active stakeholders.

As one sociological analysis has observed, while urban residents, particularly the middle and upper classes, revere the Yamuna as sacred, they experience it only from a distance, such as from bridges, and this detachment contributes to a lack of public accountability for the river's worsening condition; reverence for the river has rarely translated into concrete environmental action, highlighting a critical gap in civic engagement.[46] This disconnect between cultural veneration and civic responsibility is perhaps the most poignant irony in the Yamuna story. A river that is worshipped as a goddess is simultaneously used as a drain, by people who are able to sustain both attitudes simultaneously because they are never required to confront the consequences of the contradiction.

Real-time public monitoring data for the Yamuna is not routinely available in an accessible and user-friendly format. Citizens cannot easily verify whether sewage treatment plants in their area are functioning, whether pollution levels in their local drain are rising, or whether the

Look Away', The Wire (December 14, 2025), https://m.thewire.in/article/environment/the-yamunas-decline-is-delhis-mirror-and-citizens-can-no-longer-look-away.

[46] 'Yamuna River Pollution: Causes, Effects, and Sustainable Solutions for the Future', What Is Green Living (August 6, 2025), https://whatisgreenliving.com/yamuna-river-pollution/.

projects announced by their government are actually being implemented. Without transparency, accountability cannot function. Without accountability, governance cannot improve. The Yamuna's failure is, in this respect, also a democratic failure.

Comparative Assessment of Different Governments and Agencies

Any honest assessment of the Yamuna's trajectory across different governments and agencies leads to a sobering but important conclusion: the river's condition has deteriorated, or at best remained static, across every political dispensation that has governed Delhi since the river cleaning effort began in 1993. The Congress-led governments of the 1990s and 2000s oversaw the spending of thousands of crores under YAP I and II with no appreciable improvement. The Aam Aadmi Party, which came to power in Delhi in 2015 repeatedly pledging to clean the Yamuna before the next election, spent over ₹6,857 crore between 2017 and 2022, and left office in 2025 with the river as polluted as it had found it. The current BJP government in Delhi, which promised to clean the Yamuna within 90 days of assuming power in early 2025, has faced accusations from opposition parties of presiding over worsening pollution levels, with DPCC data showing that BOD and faecal coliform levels surged two to three times in several stretches of the river within six months of the new government taking charge.[47]

At the agency level, the Delhi Jal Board, the Delhi Development Authority, and the Municipal Corporations have each, at various times, been found by courts and audit bodies to be functioning below standard, overstating their performance, failing to maintain infrastructure, and resisting accountability. The YAP fell short in achieving lasting outcomes not because of any single government's failure, but because of fragmented governance, insufficient maintenance, and the absence of coherent urban planning for the Yamuna across all governments and agencies that have managed it.[48]

What this comparative assessment ultimately reveals is that the Yamuna's failure is not partisan, it is structural. No government has been able to overcome the institutional design flaws, the inter-state coordination deficits, and the short-termism of electoral politics that have undermined every cleanup effort since 1993. Until these structural conditions are reformed, through the creation of a genuinely empowered

[47] 'Yamuna Maiyya Has Become More Polluted Under BJP Rule: Sanjeev Jha', Aam Aadmi Party Press Release (July 21, 2025), https://aamaadmiparty.org/press-release/yamuna-maiyya-has-become-more-polluted-under-bjp-rule-sanjeev-jha/.
[48] 'Yamuna Rejuvenation: Reimagining the Future of the River', Social and Political Research Foundation (September 11, 2025), https://sprf.in/yamuna-rejuvenation-reimagining-the-future-of-the-river/.

and unified Yamuna River Authority, the establishment of transparent real-time monitoring systems, the systematic inclusion of civil society in governance, and a political culture that rewards long-term environmental outcomes over short-term announcements, no amount of money spent will clean this river.

ROLE OF CIVIL SOCIETY, PRIVATE ORGANISATIONS, AND CITIZENS

The story of the Yamuna's degradation is not one in which governments and courts have been the only actors. Alongside the institutional landscape of policy plans, judicial directions, and bureaucratic agencies, there exists a parallel ecosystem of civil society organisations, environmental activists, corporate entities, and ordinary citizens who have, in their own varied ways, engaged with the river's crisis, advocating for it, cleaning it, litigating for it, and in some cases dedicating the better part of their lives to its restoration. This section examines the nature and significance of these non-governmental contributions, while also confronting honestly the structural limitations that have prevented them from translating moral commitment into lasting ecological change.

NGO Initiatives

The non-governmental sector's engagement with the Yamuna has been sustained, diverse, and in several instances, historically consequential. The most significant civil society initiative in the Yamuna's recent history is the Yamuna Jiye Abhiyan, meaning, literally, Long Live Yamuna, a campaign formally constituted on February 7, 2007, by seven leading environmental organisations in Delhi, including Toxics Link, LIFE (Lawyers Initiative for Forest and Environment), the Centre for Media Studies, Paani Morcha, Ridge Bachao Andolan, Maatu Jan Sangathan, and PEACE Institute Charitable Trust. The campaign was convened by Manoj Misra, a retired Indian Forest Service officer, and has since functioned as a sustained advocacy campaign determined to revive the Yamuna River and protect its floodplains in a land-scarce capital, making 130 presentations at public institutions across Delhi, writing 321 letters to government authorities at the state and central level, and pioneering the concept of monitoring river health through a People's River Health Index developed with UNDP support.[49] It was Manoj Misra's organisation that filed the landmark application before the National Green Tribunal in 2012, Original Application No. 6 of 2012, that ultimately resulted in the landmark "Maili se Nirmal Yamuna" judgment

[49] 'Yamuna Jiye Abhiyan: A Decade in the Service of River Yamuna', SANDRP (February 7, 2017), https://sandrp.in/2017/02/07/yamuna-jiye-abhiyan-a-decade-in-the-service-of-river-yamuna/.

of January 2015, one of the most significant environmental directions issued in the Yamuna's judicial history. Misra's passing in 2023 left a significant void in the movement, though the work he catalysed has continued through successor activists and organisations.

Alongside the YJA, organisations such as WWF India, Friends of Yamuna, Earth Warriors, and the Drishti Foundation have conducted biodiversity mapping, organised human chains and regular cleanup drives, launched awareness campaigns, and filed petitions before the National Green Tribunal, keeping sustained pressure on the authorities for the ecological integrity of the Yamuna across many years.[50] WWF India, working in collaboration with the Thames River Restoration Trust and the PEACE Institute, undertook a structured twinning programme between 2011 and 2013 that established Nadi Mitra Mandalis, river friend societies, in communities along the Yamuna, promoting organic farming, improved sanitation, catchment restoration, and biodiversity monitoring at the grassroots level.

The Centre for Science and Environment, while primarily a research and advocacy organisation rather than an activist group, has produced some of the most rigorous and consequential assessments of the Yamuna's condition, including the 2025 report Yamuna: The Agenda for Cleaning the River, which directly influenced the public and policy discourse on the river's cleanup strategy. These organisations have collectively served as the most credible and persistent voices of accountability in the Yamuna's governance, filling the vacuum left by the state's own monitoring failures.

Corporate Initiatives

The private sector's engagement with the Yamuna's restoration has historically been more limited and more ambiguous than that of civil society, in part because many of the industries operating along the river's banks have contributed to its pollution, and in part because corporate social responsibility frameworks in India have not, until recently, prioritised river and water body restoration as a strategic investment. A 2020 analysis found that only approximately 30 percent of CSR funds in India are directed toward environmental causes, and within that allocation, very little is specifically channelled toward water and river-related interventions[51], a striking statistic given the scale of the country's

[50] 'The Relentless Fighters Who Cycle, Campaign and Rally to Save Yamuna', Question of Cities (February 6, 2026), https://questionofcities.org/the-relentless-fighters-who-cycle-campaign-and-rally-to-save-yamuna/.
[51] Earth5R, 'Multi-Stakeholder River Cleanup Strategy: Public-Private-Community Partnership in Action', Earth5R (April 11, 2025), https://earth5r.org/sustainability-insights-earth5r-2/.

river pollution crisis.

That said, the corporate sector has begun to engage more deliberately with the Yamuna in recent years, partly under regulatory compulsion and partly in response to growing reputational incentives. In September 2025, the Delhi government hosted 'The Yamuna and Delhi Rejuvenation: A CSR Dialogue' at Raj Niwas, at which Chief Minister Rekha Gupta appealed to the corporate and industrial sector to set up a CSR-backed corpus fund for Yamuna restoration, to adopt individual drains for the construction of smaller decentralised treatment plants, and to provide technical expertise for sewage treatment innovation.[52] Organisations such as Earth5R have worked to mobilise corporate CSR funding for river cleanup and community engagement programmes, deploying a Public-Private-Community Partnership model that integrates corporate resources with citizen participation and local government oversight. ITC Limited, through its Mission Sunehra Kal, and Hindustan Unilever, through its water stewardship programmes, have pursued broader water conservation objectives at scale, though these have not been specifically directed at the Yamuna.

The honest assessment of corporate engagement is that it remains largely peripheral to the scale of the problem. Industrial units operating in Delhi's approved industrial clusters have, in many cases, been among the primary contributors to the Yamuna's pollution through the discharge of untreated or inadequately treated effluents, and the conversion of industry from polluter to partner, while a worthwhile aspiration, has not yet materialised in any systematic way. Corporate initiatives tend to be episodic, visibility-driven, and disconnected from the structural changes in sewage infrastructure and regulatory enforcement that the river's restoration actually requires.

Citizen Participation

At the grassroots level, citizen engagement with the Yamuna has grown meaningfully in recent years, driven by rising environmental awareness, the proliferation of social media as a tool for mobilisation, and the visceral shock of images such as those of devotees bathing in foam-covered water during the Chhath Puja of 2024. Citizen-led cleanup drives are now organised regularly at several ghats along the Yamuna, particularly at Kalindi Kunj and ITO, where volunteers, including school children, college students, resident welfare associations, and independent environmental groups, collect waste from the riverbanks,

[52] 'Delhi CM Proposes CSR-Backed Initiatives to Revive Yamuna', Business Standard (September 8, 2025), https://www.business-standard.com/india-news/delhi-cm-proposes-csr-backed-initiatives-to-revive-yamuna-city-s-clean-air-125090801281_1.html.

conduct water quality tests, and organise public awareness events. Campaigns such as "Voicing the Yamuna" have, across multiple editions, brought together diverse civil society partners, students, and local residents in symbolic acts of reclamation, affirming that the river is a shared civic responsibility rather than merely a governmental one.

Individual activists have played a particularly important role. Beyond Manoj Misra, a new generation of activists, including those who founded Earth Warriors, youth-led environmental platforms, and neighbourhood river stewardship groups, have maintained consistent pressure on authorities through petitions, Right to Information applications, social media documentation, and direct engagement with the National Green Tribunal. These individual voices have often been more effective than large institutional campaigns at documenting specific violations, naming specific drains, and demanding specific government responses.

Limitations of These Efforts

For all the moral energy, legal creativity, and civic commitment that civil society, the private sector, and citizens have collectively brought to the Yamuna's cause, the honest verdict is that these efforts have not produced, and structurally cannot produce, the restoration that the river requires. The limitations are not failures of intention; they are failures of scale and structural power.

Civil society organisations, however resourceful and committed, lack the authority to construct sewage treatment plants, mandate inter-state coordination, or compel industrial units to install effluent treatment technology. Their power lies in advocacy, accountability, and litigation, and even this power is constrained by the pace of judicial processes and the state's capacity for non-compliance without consequence. Manoj Misra himself acknowledged, at the conclusion of a decade of sustained advocacy, that even sustained civil society effort had made little difference to the overall health of the river, underscoring the complexity and depth of the challenges involved.[53] Corporate CSR contributions, while growing, remain inadequate in volume and insufficiently tied to the structural sources of pollution. A corporation that cleans a section of riverbank while its effluents continue to enter the drains through inadequate treatment plants is engaged in contradiction, not restoration. Large industrial polluters frequently evade regulatory action due to weak enforcement or political shielding, and this uneven application of environmental law undermines both the justice and the effectiveness of river governance.[54]

[53] 'Yamuna Jiye Abhiyan: A Decade in the Service of River Yamuna', SANDRP.
[54] Earth5R, 'Reviving the Yamuna: A Blueprint for Urban Sustainability through

Citizen-led cleanup drives face the most fundamental limitation of all: they address the symptoms of river pollution rather than its causes. Collecting plastic waste from a riverbank is a valuable and visible act of civic commitment, but it does not intercept the millions of litres of untreated sewage that enter the Yamuna every day through its 22 major drains. True river revival requires continuous citizen participation and behavioural change, but it also requires systemic change and the absence of transparent, publicly accessible real-time monitoring systems for the Yamuna means that citizens cannot even accurately track whether the river's condition is improving or worsening, hindering both public awareness and the accountability that would follow from it.

What civil society has succeeded in doing, and this is not a small achievement, is keeping the Yamuna's crisis visible, legible, and litigable. It is because of organisations like the YJA, individuals like Manoj Misra, and the sustained advocacy of environmental research bodies like the CSE that the Yamuna has not been allowed to disappear quietly into administrative neglect. The river remains on the public agenda, in the courts, and in the conscience of the nation, and that, in the face of decades of governmental failure, is a contribution of real consequence. But it is not, by itself, sufficient. The Yamuna will not be cleaned by protest, petition, or cleanup drive alone. It will be cleaned, if it is cleaned, by governance. And the creation of conditions for better governance is, ultimately, the most important contribution that civil society can make.

FINDINGS AND RECOMMENDATIONS

Findings

The preceding analysis yields a set of findings that, taken together, substantiate the paper's central argument that the Yamuna's continued degradation is a governance failure rather than a resource failure.

1. Financial outlay has been substantial and sustained, but has been directed disproportionately toward infrastructure construction rather than infrastructure operation. Across the YAP's three phases and the Namami Gange Programme, tens of thousands of crores have funded the building of sewage treatment plants, yet CAG and Parliamentary Standing Committee audits consistently find these plants functioning below optimum utilisation, with common effluent treatment plants in Delhi's industrial clusters operating at only 32 percent capacity. The constraint has never been the absence of

Earth5R's BlueCities Model', Earth5R (May 8, 2025), https://earth5r.org/yamuna-blueprint-urban-sustainability/.

capital; it has been the absence of a system that ensures constructed capacity is actually used.

2. The single most consequential and recurring technical failure is the mixing of treated and untreated sewage within the same drainage channels. Even where treatment plants meet prescribed standards, treated effluent is discharged into drains that simultaneously carry untreated sewage from unsewered colonies, negating the benefit of treatment before the water reaches the river. This is not a funding problem; it is a design and enforcement problem.

3. The data infrastructure required to govern the river does not exist in usable form. There is no reliable figure for the volume of wastewater Delhi actually generates, because there is no current census and no accurate accounting of groundwater extraction; without this baseline, neither planning nor accountability is possible.

4. Non-sewered and unauthorised settlements remain structurally outside the sanitation system. Faecal sludge from these areas is meant to be collected by desludging tankers and delivered to treatment facilities, but the overwhelming majority of this sludge is unaccounted for, with only a small fraction of officially generated wastewater captured through this channel.

5. Administrative fragmentation across riparian states and across central, state, and municipal agencies has prevented any single body from being held accountable for outcomes, while judicial intervention, though persistent, has functioned as monitoring rather than execution and cannot substitute for administrative capacity.

6. Political incentives reward visible construction over invisible maintenance, producing a decades-long pattern in which every government, regardless of party, has announced new infrastructure while neglecting the operational governance of infrastructure already built.

7. Civil society, citizen, and corporate engagement, while valuable for sustaining visibility and accountability pressure, lacks the legal authority and financial scale to substitute for state action, and remains structurally incapable of addressing causes rather than symptoms.

Recommendations

On the basis of these findings, and drawing on proposals advanced by the Centre for Science and Environment, the 2024 Report of the Parliamentary Standing Committee on Water Resources, and

comparative international experience, this paper advances the following recommendations.

1. Establish a unified, statutorily empowered Yamuna River Authority

A single authority, with binding powers over all riparian states and all agencies currently sharing jurisdiction over the river (the Delhi Jal Board, the DDA, the municipal corporations, and their counterparts in Haryana and Uttar Pradesh), should be created by statute, not executive order, so that its authority survives changes in government. The comparative precedent is instructive: when the Thames was rendered "biologically dead" through the mid-twentieth century, recovery began only after the United Kingdom consolidated fragmented local water and sewerage functions, culminating in the National Rivers Authority of 1989, which integrated pollution control, water quality monitoring, and enforcement under one body with the power to compel compliance across jurisdictional lines. The Yamuna's five-state, multi-agency structure is the single largest obstacle identified in this paper, and only a body with comparable statutory power can resolve it.

2. End the mixing of treated and untreated sewage at the drain level.

CSE's 2025 assessment identifies this as among the most fixable failures in the current system: STPs must be re-engineered or relocated so that treated effluent is not discharged into drains still carrying untreated waste. Where relocation is not feasible, dedicated conveyance for treated water, physically separated from untreated drains, should be prioritised in all future capital allocation.

3. Bring non-sewered areas and faecal sludge into a tracked, accountable system

Rather than continuing to invest primarily in costly new sewer pipelines, the Standing Committee and CSE both recommend a faster, lower-cost intervention: mandatory registration and GPS-based tracking of all desludging tankers, with verification that septage is delivered to treatment facilities rather than dumped in drains or on riverbanks. A "Clean Yamuna Fund," as recommended by the Standing Committee, could be established under the Namami Gange Programme specifically to finance this tracking infrastructure and to formalise the currently informal and unregulated desludging trade.

4. Build a reliable wastewater and groundwater data baseline

Before further capital is committed, the responsible authorities should commission an updated, transparent assessment of actual wastewater generation, incorporating groundwater extraction estimates, rather than

relying on supply-side figures that systematically understate the scale of the problem. Without this baseline, the gap between sewage generation and treatment capacity, the central technical fact driving the Yamuna's pollution, cannot be accurately measured or closed.

5. Maximise reuse of treated water rather than treating discharge volume as the only metric of success.

CSE finds that only a small fraction of treated wastewater is currently reused, despite treatment capacity existing to treat the bulk of Delhi's sewage. Future STP investment and upgrades should be designed with reuse, for irrigation, industrial use, or groundwater recharge, built in as a primary objective, reducing both the volume entering the river and the demand on freshwater extraction.

6. Target the worst-performing drains directly

Given that the Najafgarh and Shahdara drains alone account for the overwhelming majority of Delhi's pollution load into the Yamuna, interception and treatment strategy should be restructured to prioritise these two drains specifically, rather than distributing resources evenly across all 22 drains regardless of their relative contribution.

7. Institutionalise real-time, publicly accessible water quality monitoring

Citizens currently have no reliable way to verify whether STPs in their area are functioning or whether pollution levels are rising or falling. A public dashboard, displaying dissolved oxygen, biochemical oxygen demand, and faecal coliform data from fixed monitoring stations along the river, updated at regular intervals and independently audited, would convert the river's condition from an opaque bureaucratic matter into a transparent civic one, restoring the accountability link that this paper identifies as currently absent. The Thames recovery similarly depended on the introduction of systematic biotic and chemical monitoring that made the river's condition legible to regulators and the public alike.

8. Strengthen judicial enforcement mechanisms beyond monitoring committees

Given that courts can order compliance but cannot compel administrative capacity, the National Green Tribunal and Supreme Court should consider structural injunctions with binding implementation timelines, automatic financial penalties for non-compliance attributable to specific agencies, and a reduction in the proliferation of parallel proceedings across courts, the absence of which the Supreme Court itself identified as a source of confusion when closing

its suo motu proceedings in February 2026.

9. Formalise civil society and citizen participation within governance structures, not merely around them

Rather than treating NGOs, researchers, and citizen groups as external petitioners, the proposed River Authority should include statutory seats or a formal advisory mechanism for established civil society organisations such as the Yamuna Jiye Abhiyan successor bodies and the Centre for Science and Environment, converting their accumulated expertise and monitoring capacity into a recognised input to decision-making rather than an adversarial check upon it.

10. Address sand mining, encroachment, and floodplain restoration through dedicated enforcement mechanisms

The Standing Committee's findings on the sharp rise in riverbed debris dumping and sand mining cases indicate that pollution control cannot be separated from floodplain and riverbed protection. A dedicated enforcement portal to track encroachment, debris dumping, and illegal sand mining, as recommended by the Committee, should be created and made interoperable with the monitoring dashboard proposed above.

CONCLUSION

The Yamuna's crisis, as this paper has sought to demonstrate, is not a story of governmental indifference but of governmental failure of a much more troubling kind, sustained, well-funded, judicially supervised effort that has nonetheless failed to produce ecological recovery. Over three decades, the Yamuna Action Plan and successive programmes have channelled thousands of crores of rupees into sewage treatment infrastructure; the Supreme Court and the National Green Tribunal have issued hundreds of directions and constituted monitoring committees; civil society organisations have litigated, documented, and mobilised; and successive governments across every major political party have made the river's restoration a central electoral promise. Yet the 22-kilometre stretch through Delhi remains, by every available measure, biologically dead.

The central argument of this paper is that this paradox cannot be explained by any single deficiency. It is the product of a convergence of failures operating simultaneously and reinforcing one another: a chronic disconnect between policy design and ground-level implementation; an administrative architecture so fragmented across competing agencies that no single authority can be held accountable; infrastructure that has been built but not properly operated, maintained, or connected to the sewage it was meant to treat; an absence of political will that survives

beyond the news cycle or electoral term; and a citizenry that reveres the river spiritually while remaining largely disengaged from the civic responsibility of protecting it. Judicial intervention, however persistent and well-reasoned, has proven structurally incapable of substituting for administrative capacity and political commitment, courts can order compliance, but they cannot build institutions or compel genuine inter-state cooperation.

What this study ultimately reveals is that money has never been the binding constraint on the Yamuna's revival. The constraint has been governance, coherent, accountable, and sustained governance capable of integrating sewage generation, collection, treatment, and discharge into a single functioning system, and of withstanding the electoral and bureaucratic incentives that have repeatedly diverted attention toward visible construction rather than invisible maintenance. Until a genuinely empowered and unified river authority is established, until real-time and transparent monitoring data is made publicly accessible, until inter-state responsibilities are enforced rather than externalised, and until civil society and citizens are treated as partners in governance rather than spectators to it, no additional expenditure, however large will alter the river's trajectory.

The Yamuna's restoration remains technically achievable; the sewage treatment efficiencies recorded by individual plants demonstrate that the engineering challenge has long been solved. What remains unresolved is the governance challenge, and it is this challenge, not the absence of funds, plans, or judicial attention that must be confronted if the river that has sustained Indian civilisation for millennia is to be restored to the living state in which it was once known.

BIBLIOGRAPHY

A. Constitutional and Statutory Materials

1. Constitution of India, 1950, arts. 21, 48A, 51A(g).
2. Water (Prevention and Control of Pollution) Act, 1974.
3. Environment (Protection) Act, 1986.
4. National Green Tribunal Act, 2010.

B. Cases

1. Subhash Kumar v. State of Bihar, (1991) 1 SCC 598 (Supreme Court of India).

2. M.C. Mehta v. Union of India, Writ Petition (Civil) No. 3727 of 1985 (Ganga Pollution Case) (Supreme Court of India).

3. M.C. Mehta v. Union of India, Writ Petition (Civil) No. 4677 of 1985 (Supreme Court of India).

4. Indian Council for Enviro-Legal Action v. Union of India, (1996) 3 SCC 212 (Supreme Court of India).

5. Vellore Citizens Welfare Forum v. Union of India, (1996) 5 SCC 647 (Supreme Court of India).

6. M.C. Mehta v. Union of India, (1997) 2 SCC 353 (Taj Trapezium Case) (Supreme Court of India).

7. M.C. Mehta v. Kamal Nath, (1997) 1 SCC 388 (Supreme Court of India).

8. Writ Petition No. 725 of 1994 (Supreme Court of India).

9. Mohd. Salim v. State of Uttarakhand, Writ Petition (PIL) No. 126 of 2014 (Uttarakhand High Court), stayed (Supreme Court of India, July 7, 2017).

10. Manoj Mishra v. Union of India and Others, Original Application No. 6 of 2012 (National Green Tribunal, January 13, 2015).

11. Delhi Jal Board v. State of Haryana and Others, Suo Motu Writ Petition (Civil) No. 1 of 2021 (Supreme Court of India), closed February 2026.

12. Art of Living Foundation case, National Green Tribunal (2016).

C. Government and Official Reports

1. Central Pollution Control Board. Report on Pollution of the Yamuna River, 1977–78. New Delhi: CPCB.

2. Central Pollution Control Board. Water Quality Status of Yamuna River (1999–2005). Assessment and Development of River Basin Series: ADSORBS/41/2006-07. New Delhi: Ministry of Environment and Forests, 2006.

3. Central Pollution Control Board. Annual Report 2022–23. New Delhi: Ministry of Environment, Forest and Climate Change, 2023.

4. Comptroller and Auditor General of India. Performance Audit Report on Rejuvenation of River Ganga (Namami Gange). New Delhi: CAG, December 19, 2017.

5. Standing Committee on Water Resources. Review of Upper Yamuna River Cleaning Projects up to Delhi and Riverbed Management in Delhi. New Delhi: Parliament of India, February 6, 2024.

6. Press Information Bureau, Government of India. "Ganga and Yamuna Action Plan." Accessed June 24, 2026. https://www.pib.gov.in/newsite/PrintRelease.aspx?relid=79010.

7. National Mission for Clean Ganga, Ministry of Jal Shakti. "Namami Gange Programme." Accessed June 24, 2026. https://nmcg.nic.in/NamamiGanga.aspx.

8. National Informatics Centre, Government of India. "Pollution in the River Yamuna." Rejuvenation of the River Yamuna. Accessed June 24, 2026. https://yamuna-revival.nic.in/pollution-of-the-yamuna-section/.

9. Delhi Development Authority. A Case Study of the Yamuna River. New Delhi: DDA. https://dda.gov.in/sites/default/files/Landescape/A_Case_study_Yamuna_River.pdf.

D. Research Institute and NGO Reports

1. Centre for Science and Environment. Yamuna: The Agenda for Cleaning the River. New Delhi: CSE, 2025.

2. Tata Centre for Development, University of Chicago in India. "Delhi: How Polluted Yamuna Shrunk Livelihoods, Left Many Poorer." Accessed June 24, 2026. https://uchicago.in/news/delhi-how-polluted-yamuna-shrunk-livelihoods-left-many-poorer.

3. Earth5R. "Multi-Stakeholder River Cleanup Strategy: Public-Private-Community Partnership in Action." April 11, 2025. https://earth5r.org/sustainability-insights-earth5r-2/.

4. Earth5R. "Reviving the Yamuna: A Blueprint for Urban Sustainability through Earth5R's BlueCities Model." May 8, 2025. https://earth5r.org/yamuna-blueprint-urban-sustainability/.

5. Social and Political Research Foundation. "Yamuna Rejuvenation: Reimagining the Future of the River." September 11, 2025. https://sprf.in/yamuna-rejuvenation-reimagining-the-future-of-the-river/.

6. Misra, Manoj. "NGT Orders Maily se Nirmal Yamuna: Will This Lead to a Rejuvenated Yamuna?" SANDRP, February 14, 2015. https://sandrp.in/2015/02/14/ngt-orders-maily-se-nirmal-yamuna-will-this-lead-to-a-rejuvenated-yamuna/.

7. SANDRP. "Yamuna Jiye Abhiyan: A Decade in the Service of River Yamuna." February 7, 2017. https://sandrp.in/2017/02/07/yamuna-jiye-abhiyan-a-decade-in-the-service-of-river-yamuna/.

E. Journal Articles and Academic Sources

1. Sharma et al. "The Yamuna's Struggle with Pollution (2014–2024)." Pollution Study 6, no. 2 (2025): 3199. https://aber.apacsci.com/index.php/ps/article/viewFile/3199/3752.

2. Palaniappan, Meena, et al. "Toxic Water, Toxic Crops: India's Public Health Time Bomb." New Security Beat, Wilson Center, January 2019. https://www.newsecuritybeat.org/2019/01/toxic-water-toxic-crops-indias-public-health-time-bomb/.

3. "Yamuna Action Plan Phase III: Impact on Water Quality of River Yamuna." Wiser Publications. https://wiserpub.com/uploads/1/20211112/a8558b4d143bb818.

F. News Reports and Media Sources

1. "Yamuna." Wikipedia. Accessed June 24, 2026. https://en.wikipedia.org/wiki/Yamuna.

2. "Yamuna Action Plan." Wikipedia. Accessed June 24, 2026. https://en.wikipedia.org/wiki/Yamuna_Action_Plan.

3. "M.C. Mehta v. Union of India and Others." Wikipedia. Accessed June 24, 2026. https://en.wikipedia.org/wiki/M._C._Mehta_v._Union_of_India_and_Others.

4. "Yamuna Action Plan." Grokipedia, January 14, 2026. https://grokipedia.com/page/Yamuna_Action_Plan.

5. "Delhi Budget 2025: ₹500 Crore Allocated for Yamuna River Cleanup." Business Standard, March 25, 2025. https://www.business-standard.com/india-news/delhi-budget-2025-yamuna-cleanup-allocation-125032500530_1.html.

6. "Delhi CM Proposes CSR-Backed Initiatives to Revive Yamuna." Business Standard, September 8, 2025. https://www.business-standard.com/india-news/delhi-cm-proposes-csr-backed-initiatives-to-revive-yamuna-city-s-clean-air-125090801281_1.html.

7. "Rs 6,857 Crore Spent to Clean 22-km Stretch in Four Years, But Yamuna Still a Dead River in Delhi." Kashmir Times, May 11, 2025. https://kashmirtimes.com/amp/story/opinion/comment-articles/rs-6857-crore-spent-to-clean-22-km-stretch-in-four-years-but-yamuna-still-a-dead-river.

8. Choudhary, Vikas. "Yamuna River in Delhi: How Encroachment Turned a Lifeline into Stagnant, Polluted Ponds." Down to Earth, April 2, 2026. https://www.downtoearth.org.in/rivers/yamuna-the-river-that-became-stagnant.

9. "NGT Issues Notice to Centre and UP over Yamuna Pollution in Mathura, Vrindavan." Down to Earth, April 23, 2026. https://www.downtoearth.org.in/environment/ngt-issues-notice-to-centre-and-up-over-yamuna-pollution-in-mathura-vrindavan.

10. "Rethinking Yamuna Clean-Up: CSE Addresses Gaps in Action." Down to Earth, May 8, 2025. https://www.downtoearth.org.in/environment/rethinking-yamuna-clean-up-cse-addresses-gaps-in-action-that-lead-to-pollution-despite-rs-6856-crore-investment.

11. "Yamuna Can Be Cleaned, It Just Needs a Plan and Action with a Difference." Down to Earth, October 30, 2025. https://www.downtoearth.org.in/rivers/yamuna-can-be-cleaned-it-just-needs-a-plan-and-action-with-a-difference-cse.

12. Singh, Harmeet Shah. "Millions of Delhi Residents Lost Water for Days. Some Say It's Still Toxic." CNN, January 31, 2026. https://www.cnn.com/2026/01/31/india/delhi-water-shortage-yamuna-pollution-intl-hnk-dst.

13. Sharma, Naina. "Yamuna River Pollution: Problem of Governance, Not Infrastructure." Ideas for India, July 8, 2025. https://www.ideasforindia.in/topics/environment/yamuna-river-pollution-problem-of-governance-not-infrastructure.

14. "Toxic Yamuna: Decades of Clean-Up Failures Turn Sacred Chhath Festival into Political Battleground." The Daily Pioneer, October 24, 2025. https://www.dailypioneer.com/2025/india/toxic-yamuna-decades-of-clean-up-failures-turn-sacred-chhath-festival-into-political-battleground.html.

15. "Chhath Puja 2024: Toxic Foam on Yamuna in Delhi Raises Concerns." Odisha TV, November 4, 2024. https://odishatv.in/news/festivals-events/chhath-puja-2024-toxic-foam-on-yamuna-in-delhi-raises-concerns-248105.

16. "Fight Over Yamuna a Poll Gimmick? River Can Be Revived, but There Can't Be a Band Aid Solution." The Print, February 4, 2025. https://theprint.in/politics/fight-over-yamuna-a-poll-gimmick-river-can-be-revived-but-there-cant-be-a-band-aid-solution/2477435/.

17. "Supreme Court Closes Suo Motu Case on Polluted Rivers." Verdictum, February 24, 2026. https://www.verdictum.in/court-updates/supreme-court/closes-suo-motu-proceedings-remediation-of-polluted-rivers-1608539.

18. "Yamuna Cleanup Falls Short Despite ₹2,454 Crore Spent on Delhi Jal Board Project." Outlook Business, April 17, 2026. https://www.outlookbusiness.com/news/yamuna-cleanup-fails-djb-2454-crore-sewage-project.

19. Jha, Sanjeev. "The Yamuna's Decline Is Delhi's Mirror And Citizens Can No Longer Look Away." The Wire, December 14, 2025. https://m.thewire.in/article/environment/the-yamunas-decline-is-delhis-mirror-and-citizens-can-no-longer-look-away.

20. "Yamuna Maiyya Has Become More Polluted Under BJP Rule: Sanjeev Jha." Aam Aadmi Party Press Release, July 21, 2025. https://aamaadmiparty.org/press-release/yamuna-maiyya-has-become-more-polluted-under-bjp-rule-sanjeev-jha/.

21. "The Relentless Fighters Who Cycle, Campaign and Rally to Save Yamuna." Question of Cities, February 6, 2026.

https://questionofcities.org/the-relentless-fighters-who-cycle-campaign-and-rally-to-save-yamuna/.

22. "What Are the Main Causes of Pollution in the Yamuna River?" Netsol Water, May 27, 2023. https://www.netsolwater.com/what-are-the-main-causes-of-pollution-in-yamuna-river.php?blog=5138.

G. Websites and Online Resources

1. 'Spiritual Importance of the Ganges and Yamuna in Hinduism." Soil2Soul Expeditions, October 9, 2024. https://www.soil2soulexpeditions.com/sacred-places/sacred-rivers-of-india.

2. "The Effects of Yamuna River Pollution on Human Health and Ecosystems." Hari Yamuna Sehyog Samiti, December 16, 2024. https://hariyamuna.org.in/2024/12/16/the-effects-of-yamuna-river-pollution-on-human-health-and-ecosystems/.

3. "Yamuna River Pollution: Causes, Impact, and Solutions." Adroit Water Technologies. Accessed June 24, 2026. https://www.adroitwater.com/yamuna-river-pollution-causes-impact-and-solutions/.

4. "Yamuna River Pollution: Causes, Effects, and Sustainable Solutions for the Future." What Is Green Living, August 6, 2025. https://whatisgreenliving.com/yamuna-river-pollution/.

5. "Right to Clean Environment." Drishti IAS. Accessed June 24, 2026. https://www.drishtiias.com/daily-news-analysis/right-to-clean-environment.

6. "Article 21 of the Indian Constitution, A Mandate to Pollution Free Environment." Legal Service India. https://www.legalserviceindia.com/article/l399-A-Mandate-To-Pollution-Free-Environment.html.

7. M.C. Mehta Environmental Foundation. "Landmark Judgments." Accessed June 24, 2026. https://mcmef.org/landmark-judgments/.

8. Eco Jurisprudence Monitor. "India Supreme Court Case: Salim v. State of Uttarakhand." https://ecojurisprudence.org/initiatives/salim-v-state-of-uttarakhand/.

9. "Yamuna River Pollution Case Review." Scribd. https://www.scribd.com/document/252593842/NGT-Yamuna-Judgment-pdf.

10. PRS Legislative Research. "Review of Upper Yamuna River Cleaning Projects up to Delhi and Riverbed Management in Delhi." https://prsindia.org/policy/report-summaries/review-of-upper-yamuna-river-cleaning-projects-up-to-delhi-and-riverbed-management-in-delhi.

11. PRS Legislative Research. "Audit: Namami Gange." https://prsindia.org/policy/report-summaries/audit-namami-gange.