

Advancing Consumer Rights to Clean Water through Environmental Human Rights: A Case Study of Yamuna River Pollution

Prof. Md Rahmatullah¹ Ameena Syed²

^{1,2} Aligarh Muslim University

Abstract—Access to clean water is both a consumer right and a fundamental human right, yet millions in India face acute water insecurity due to environmental degradation. This paper examines the intersection of environmental human rights and consumer rights through the lens of Yamuna River pollution, with a particular focus on the Agra region. It begins by exploring the theoretical foundations of environmental human rights and the global legal instruments that recognize clean water as an essential entitlement. The study then contextualizes consumer rights in India, particularly the right to safe and clean water, and links them to broader environmental protections. Through an analysis of pollution sources—domestic wastewater and agricultural runoff—the paper highlights the severe ecological and public health consequences of Yamuna’s degradation. The socio-economic impact on local communities is assessed, with emphasis on environmental justice concerns and grassroots advocacy efforts. The Agra case study offers insights into pollution trends, community responses, and the effectiveness of current interventions. Finally, the paper proposes actionable policy recommendations to strengthen legal frameworks, enhance community engagement, and reinforce the protection of water as both an environmental and consumer right.

Index Terms—Clean Water, Fundamental Human Right, Environmental Degradation, Yamuna’s Degradation, Legal Frameworks

I INTRODUCTION

Water is essential for survival, yet access to clean water remains a significant issue, perpetuating inequalities. The UNGA's 2015 resolution recognized clean water as a human right, pressing institutions to facilitate access for all. This compels stakeholders in water management to mitigate any adverse effects. The UN views water use as a collective human endeavor needing effective management to support environmental human rights. The environment empowers citizens to demand

access to water and seek reparations for ecological harm caused by corporations and authorities. In India, centralized control over water management leads to conflicts, particularly when companies monopolize key resources. New Delhi's Yamuna River, vital yet polluted by industries, exemplifies the necessity for an environmental human rights approach to establish citizens' water rights.

This approach could improve consumer rights and incorporate environmental factors into water distribution policies, calling for a review of India's water management over the past decade. Access to clean drinking water poses challenges in many developing nations, prompting this study to advocate for consumer rights to clean water via environmental human rights, using Yamuna River pollution as a case study. The Yamuna, a major tributary of the Ganga that rises in the Himalayas, is vital for the economies and ecosystems of several Indian states and cities, including bustling Mathura and Agra. Revered as a goddess in Hinduism, the river appears in works by poets like Surdas and Mirabai. Despite its significance, the Yamuna suffers from severe pollution due to organic waste and heavy metals, disproportionately affecting the Dalit community and urban areas, especially in the post-independence era.

II ENVIRONMENTAL HUMAN RIGHTS FRAMEWORK

Environmental human rights expand traditional human rights to include all rights related to the environment, laying the groundwork for the right to water. This framework affirms everyone’s right to “sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses.” Key access conditions encompass water availability in adequate quantities, physical accessibility, safe consumption quality, and

affordability without discrimination. Moreover, it necessitates equitable access. However, the right does not cover water for productive purposes such as agriculture, fishing, or pastoralism.

1. Definition and Scope

The right to clean water is a fundamental consumer right essential for preventing waterborne diseases and as a vital resource for human life. Southeast Asia possesses 5% of the world's renewable water resources, yet increasing population, water consumption, and water-intensive industries have intensified demand for clean water in the region. A. Trigueros notes that while human rights law emphasizes the right to water, particularly for those lacking access and suffering from water-related diseases, it prioritizes consumption. Over conservation, potentially causing conflicts between environmental protection and human rights obligations.²

2. International Legal Instruments

The right to water is highlighted in several international instruments, such as the Convention on the Elimination of All Forms of Discrimination against Women, the Convention on the Rights of the Child, the Convention on the Rights of Persons with Disabilities, and the International Covenant on Economic, Social and Cultural Rights. Additionally, the Human Rights Council adopted resolution 15/9 on the "Human Right to Safe Drinking Water and Sanitation," affirming that the right to safe water and sanitation is legally binding under existing international human rights law. This recognition signifies that states hold obligations regarding the human right to water.³

III. CONSUMER RIGHTS AND WATER ACCESS

Access to clean water is essential for livelihood, human security, and a basic right. Without it, individuals face a higher risk of waterborne diseases, linked to poverty and vulnerability. Businesses must recognize the importance of ensuring clean and safe water access to protect public health and social well-being.⁴

1. Understanding Consumer Rights

The principle that the consumer is always right underpins consumer law in democratic countries. Over the past two decades, rights related to this principle have expanded, especially concerning water quality.

Public concern over river pollution has led to demands for legislation ensuring clean water. However, laws allowing river pollution could cause severe crises. The right to water and clean water are interconnected. In the 19th century, Sir J. Roscoe Rivers noted that the right to water was recognized in English common law and should be respected unless restricted by specific rules. The right to clean water has been part of Indian law since at least 1996. Justice M.C. Mehta asserted that the right to clean water is essential for life, linked to Articles 21 and 47 of the Constitution, which focus on environmental protection. The Supreme Court stated that the State must protect water sources from pollution and uphold the polluter-pays principle. Thus, consumer and environmental rights, particularly regarding clean water, are linked to the socio-economic rights of marginalized groups.

2. Linking Consumer Rights to Environmental Rights

Consumer rights ensure access to essential goods and services. Pollution undermines these rights by denying consumers clean options like unpolluted water or air. It's vital to connect consumer rights to environmental rights. The evolving human right to water remains state-oriented, and urgent action is needed. Progress on the right to clean air is being made in the Inter-American system, with strategies to uphold consumer rights to water. Clean water and air are fundamental environmental rights that reflect consumer rights.⁵

IV. POLLUTION SOURCES OF THE YAMUNA RIVER

The Yamuna River provides drinking and irrigation water to millions, many residing in slums. However, substantial portions of the river are heavily polluted, mainly due to untreated sewage, industrial effluents, and solid waste in the catchment area. Unchecked urban and industrial expansion along the river threatens its flow, ecology, and biodiversity. Specifically, untreated sewage and effluents near Delhi are major pollution sources. Main drains entering the river carry pollutants such as organic matter, microorganisms, detergents, grease, and salts. Various industries like oil refineries, distilleries, and pharmaceuticals release harmful effluents that significantly degrade water quality.⁶

The Yamuna River faces significant pollution issues in Delhi, where industrial and municipal wastewater from regions like Neemrana, Bhiwandi, Alwar, and

Faridabad accumulate. In April 2010, the Water Quality Index at Agra and downstream sites indicated "severe pollution." Key indicators such as pH, temperature, dissolved oxygen, and nitrates help assess this pollution. Water quality data over time identifies pollution sources and shows the river's deteriorating state. A prior study using an ANN-based model demonstrated its reliability in predicting water quality parameters, using a dataset from 2007 to 2011. This ANN approach proved effective for water quality modeling and management.⁷

1. Domestic Wastewater

About 80% of illnesses are linked to poor drinking water quality, making it crucial to remove chemical contaminants before consumption. Wastewater discharge standards for industries like meat processing and detergent production are vital, as their waste may contain toxic substances. Municipal wastewater from urban areas often leads to infectious diseases and environmental issues. In the early 20th century, urban sewers were developed to transport human waste to bodies of water, reducing disease transmission and improving living standards. However, untreated domestic sewage in cities poses health risks, breeds disease-carrying mosquitoes, emits foul odors, and endangers aquatic life due to oxygen depletion. Domestic wastewater from homes contains toxic chemicals, including paraffin, phenol, and laundry detergent, posing serious health risks.⁸

2. Agricultural Runoff

The river and canals around Delhi provide essential water for agriculture, supporting farmers and the food supply for the city's population. Recently, there has been an increased demand for irrigation, with farmers prioritizing water usage over crop yield. Many divert river water to cultivate larger areas, primarily growing water-intensive crops like potatoes, wheat, rice, sorghum, and maize. As a result, only 13% of crops are suited to local conditions. Farmers acknowledge the negative impacts of heightened irrigation on water quality, such as seepage from canals and runoff that raises levels of faecal coliform, chloride, and dissolved oxygen. Nutrients from agricultural practices can enter water bodies through seepage or runoff, while excess fertilizer may directly drain into the river, worsening water quality downstream. These changes lead to eutrophication,

affecting aquatic life and posing health risks. Additionally, the distortion of water budgets, groundwater quality decline, and agricultural land conversion for flood ponds complicate water resource management in the area.⁹

V IMPACT OF POLLUTION ON COMMUNITIES

Rural and poor communities in the Yamuna River basin depend on its water for drinking and irrigation but face declining water quality. Vulnerable groups without proper sanitation or healthcare are at greater risk, especially in peri-urban areas where pollution alters water-borne disease spread. The region has a history of resistance against environmental injustice rooted in colonization and unequal development. India's caste system exacerbates discrimination in water and sanitation access. Despite existing legal frameworks, they often do not support vulnerable populations or ensure fair river governance. The nature and intensity of contamination affect both rural and urban poor, influencing migration and regulatory boundaries. The River Act aims to safeguard water quality, yet enforcement against illegal sewage dumping by the State Pollution Control Board is inadequate, with around 85% of wastewater bypassing essential drains. Communities reliant on the river face governance and legal challenges around clean water access. Pollution management is further impeded by limited government control and lack of accountability for polluters, resembling global urban issues. Policy debate centers on top-down limits with high costs versus bottom-up approaches involving local stakeholders. For the Yamuna basin, effective local mechanisms are hindered by limited regulatory authority. Understanding pollution's causes and rethinking waste management are crucial for solutions.

Water pollution significantly affects human health, causing various issues. Pollutants enter through ingestion, inhalation, or skin contact. Industrial and domestic waste contaminates water, leading to the accumulation of heavy metals, pesticides, and organic pollutants in food. In developing countries, pollution from waste and chemicals results in water-borne diseases such as typhoid, cholera, and dysentery. Unsafe water and sanitation contribute to around 485,000 diarrheal deaths each year, particularly impacting vulnerable populations like pregnant women, infants, and children.¹⁰

1. Economic Implications

The economic impact of Yamuna River pollution severely affects the livelihoods of many in India, especially those in Delhi. Residents in the Yamuna basin are often disadvantaged, unemployed, and engaged in informal sectors, mostly near industrial areas. Deteriorating water quality has led to a decline in groundwater quality and an increasing scarcity of safe drinking water. As the Yamuna is Delhi's primary water supply, poor communities face significant economic loss, as they must spend more on drinking water. Additionally, agriculture and fishing, key sources of income for many, are also struggling due to the pollution.

2. Social Justice Issues

The social implications of water distribution exacerbate inequalities related to gender, caste, and religion. Water privatization disproportionately affects marginalized groups, often leading to inefficient pricing schemes. For instance, when households face disconnection, they incur new connection fees that wealthy households can afford but poor rural households cannot, forcing them to rely on unsafe water sources. Wealthier families can store potable water during disconnections, while poorer households lack resources for such measures, leading to increased health risks. Public services like municipal water offer redistributive benefits that ensure poor households access clean water and maintain hygiene. In many developing countries, exclusionary practices of privatization hinder equitable regional development and progress on gender disparities, especially when men dominate decision-making roles.

VI. COMMUNITY ACTIVISM AND ADVOCACY

In Kachera, near the polluted Yamuna River, women took the lead in organizing community action against water pollution. During full moon festivals, they gathered to draw water and discuss pollution concerns, ultimately deciding to stop using river water as a form of social dissent. Such collective decisions are rare in the region, and this action brought attention to a typically ignored issue. Additionally, there were fundamentalist rallies in Bijnor advocating for a Yamuna Barrage to separate Kachera from Blandisher, highlighting the sacredness of Yamuna water while discouraging other sources. This campaign included distributing fliers, publishing pamphlets, and petitioning officials. Despite awareness of pollution, urban areas still used

vegetables grown with Yamuna water, frustrating Kachera residents who felt their sacrifices for health went unacknowledged. This sentiment of being disregarded is common in environmental justice movements. The protests created a critical platform for voicing concerns that had long been silenced.¹¹

VII CASE STUDY ANALYSIS: AGRA

The Yamuna Action Plan (YAP) seeks sustainable water management but struggles with governance, especially in Agra. Local opposition arose over the Coca-Cola plant's groundwater extraction, deemed illegal by the High Court, which allowed the Village Council to renew the license conditionally. The Supreme Court affirmed the State's responsibility to prevent pollution and guarantee clean water access. Governance issues, highlighted by Basu Roy, persist amidst unregulated groundwater extraction and industrial growth, worsening water scarcity for marginalized groups like adivasis and Dalits. Agriculture, using about 90% of water, faces competition from growing industrial and household demands. The Yamuna basin is densely populated and has faced severe pollution from untreated sewage. Water quality in Delhi shows rising BOD, COD, and coliform levels from 1990 to 2007, with over 70% of sewage untreated. Industrial, agricultural, and municipal discharges harm the river's ecosystem, while heavy metals and other toxic substances further increase pollution, rendering water unsafe for consumption and agriculture.¹²

1. Community Responses

Community responses to environmental protection are shaped by kinship, religion, and political ties, facilitating collaboration in water governance. Rural and urban areas exhibit distinct governance relationships impacting their collective engagement capacity, with a strong home attachment encouraging community maintenance activities. In peri-urban regions, industrial concerns and resource protection can enhance political awareness, though competing claims, diversity, and vulnerabilities present challenges. Protests in the Yamuna Valley have sparked campaigns for heightened environmental awareness and government accountability for river protection. The Yamuna Jiye Abhiyan, a coalition of over 500 NGOs, advocates for green urban development, while the Green Peace Trust emphasizes

pollution-related health risks. The Delhi Jal Prabhandhan and Yamuna South Delhi Citizen Association highlight the lack of infrastructure affecting clean water availability. As peri-urbanization occurs in the Yamuna River valley, communities and civil societies engage in water conservation and sanitation improvements, often aided by external training anchored in strong river connections. The Yamuna Action Plan (YAP), initiated in 1993 to combat river pollution, suffers from design flaws in implementation, monitoring, and regulations. A decentralized regulatory approach that includes civil society could lower transaction costs and reduce corruption. While data-driven analysis could yield better results, current data is lacking. Expanding participation to encompass civil entities and political leaders is essential for regulatory improvement. Thus far, the YAP has not produced significant results, highlighting the need for reform.¹³

VIII POLLUTION TRENDS

The central government has historically controlled pollution through strict methods that demand high-quality governance and incur large costs. Delhi faces severe air and water pollution, with the Supreme Court affirming citizens' right to an unpolluted environment. The Yamuna River, labeled as India's most polluted river, highlights India's water resource imbalance, with only 4% of global water. The Supreme Court designated the Yamuna a "pollution corridor," enforcing a zero discharge standard for industries along it. Centralized regulation has struggled due to high transaction costs, leading to the Central Pollution Control Board's delegation of discharge license authority to local boards in the early 1990s. This framework is centralized yet permits limited local discretion. Ideally, a fully decentralized approach would have the central authority define pollution standards while local governments manage quality indicators. Niranjana Ramachandran described the Yamuna as "the most disgracefully polluted" river, and the Delhi Government admitted its. Water fails to meet Bureau of Indian Standards and World Health Organization potable standards.¹⁴

1. Community Responses

Communities have been passive about the Yamuna River's ongoing poisoning due to pollution, sewage discharge, and encroachment by industries. Low-income

populations in slums face water shortages and heightened health risks. Studies indicate peri-urban residents encounter higher pollution levels, while wealthier areas enjoy better services. This disparity fosters awareness and political will to tackle health risks. The crisis in the Yamuna stresses the urgent need for decisive actions from the New Delhi Government to restore the river and safeguard public health. Reforming environmental institutions, enhancing mandates, and securing resources are essential, along with proactive responses to declining water quality. Coordination among stakeholders and navigating political challenges are key to effective action.

IX POLICY RECOMMENDATIONS

Water is essential for life and a basic human right, yet various factors jeopardize this right. In megacities, rising consumer demand and poor governance increasingly neglect water supply services. YMC Governor CY Ahemed acknowledged this issue, vowing to create an equitable, transparent, and sustainable water distribution policy: "The river is the lifeline of the city; we will ensure a clean river!" Policy and governance are crucial in upholding water rights. Access to safe drinking water and sanitation is vital for poverty alleviation and public health. Women and children face the greatest health risks from waterborne diseases like diarrhoea and dysentery. Stronger policy enforcement and increased government investment are essential for effective action.¹⁵

1. Strengthening Legal Frameworks

The legal framework for the right to water in India consists of statutory, constitutional, and common law elements. While the Constitution doesn't explicitly mention the right to water, the Supreme Court interprets the right to life under Article 21 to encompass it. Key regulations include the Water (Prevention and Control of Pollution) Act 1974 and the Environment Protection Act 1986. Groundwater governance features several laws, such as the Environment (Protection) Rules 1986 and the CGWA, which regulates groundwater management. Issues with the Yamuna River highlight the need for a more cohesive legal system to secure rights to clean water. Studies show limited use of environmental law for human rights, with bureaucratic resistance, inadequate monitoring, and lack of data weakening the right to a healthy environment.¹⁶

2. Enhancing Community Engagement

Community responses to environmental issues often align with the concerns of environmental justice organizations but demonstrate limited collective action, particularly regarding water pollution. The absence of community-based NGOs and political representation worsens these challenges. Urban residents prioritize water quality and pollution caused by sewage and industrial waste, connecting contaminated rivers and groundwater to unregulated dumping. Agricultural practices, like pesticide use and untreated wastewater irrigation, exacerbate the problem. Those reliant on natural resources, especially low-income and marginalized groups, bear the brunt of these risks. Although awareness of pollution has grown, effectively addressing these issues remains a challenge. Enhancing public participation within appropriate institutional frameworks and demographics is essential. Thus, policy reforms that encourage public involvement and empower affected communities are vital for ongoing efforts against environmental issues.¹⁷

X CONCLUSION

This paper examines water pollution in India, particularly the contamination of the Yamuna River, which denies the population the Right to Clean Water. This pollution adversely affects the health of many Indians who rely on the river for daily needs. Despite the Directive Principles of State Policy mandating improvements and water assistance from both state and central governments, their efforts have been insufficient. Pollution hinders access to clean water, which the Climate Change treaty and UN Conventions partially protect by addressing environmental hazards. Moreover, the introduction of a Constitutional Right to Clean Water demonstrates the government's commitment to this right. Promoting English to enhance female literacy could also create job opportunities and foster discussions on effective practices to address the issue.

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