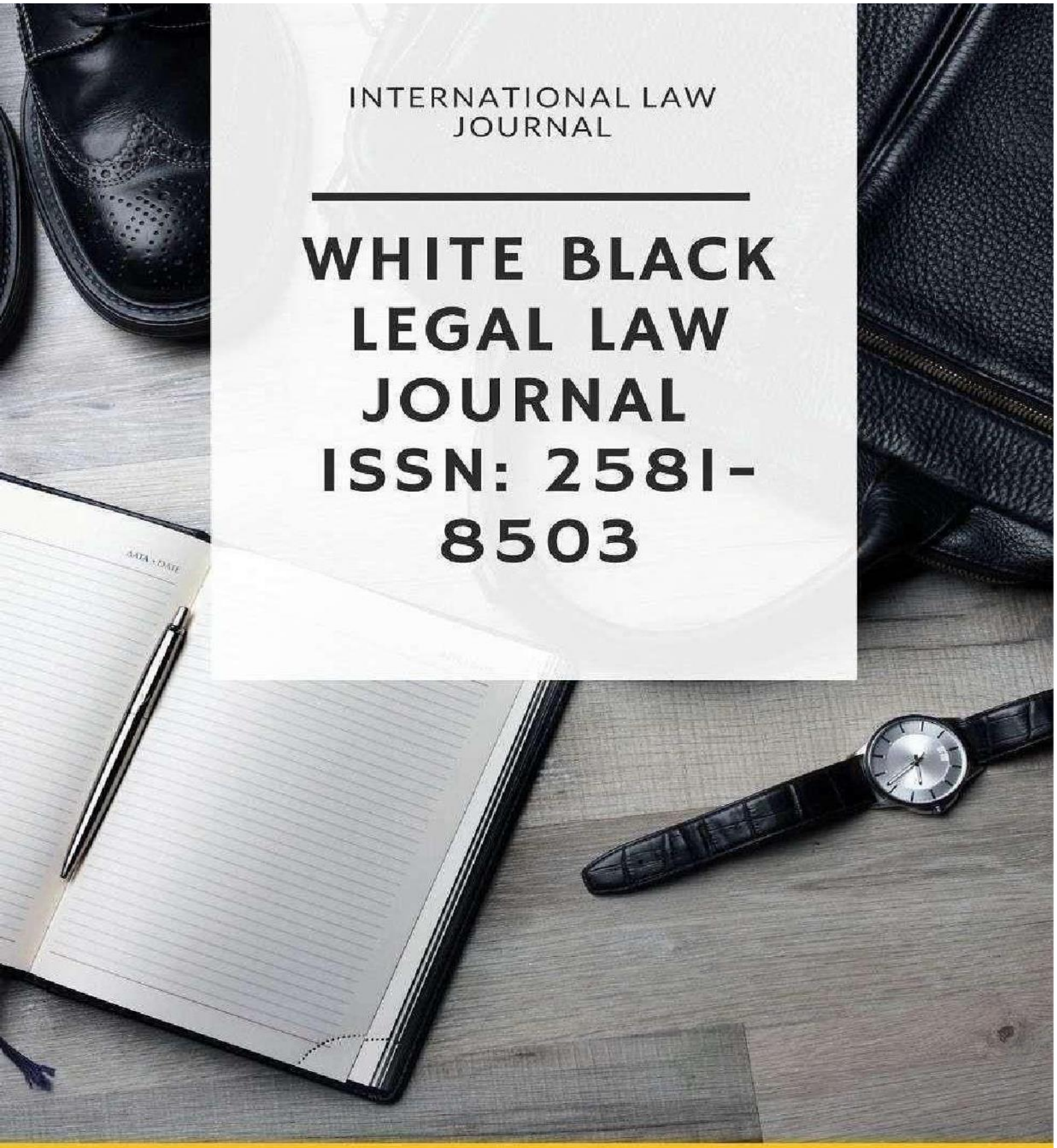


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WATERBODIES AS ECOLOGICAL COMMONS: OWNERSHIP, ENCROACHMENT AND ENVIRONMENTAL GOVERNANCE IN INDIA

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Abstract

Waterbodies in India are not only physical resources but also ecological commons that support biodiversity, groundwater recharge, flood control, community livelihoods and environmental rights enshrined in the Constitution[1]. Although constitutional protections, environmental laws, wetland rules and the public trust doctrine recognized by the courts exist, rivers, ponds, lakes, johads, wetlands, seasonal streams, floodplains and groundwater systems are still subject to encroachment, pollution, land conversion and administrative neglect. This paper examines whether the existing legal framework in India is sufficient to safeguard waterbodies from ecological degradation. It adopts doctrinal legal research as its primary methodology, while analytical, policy-based and limited comparative approaches are used to study constitutional provisions, statutes, judicial decisions, government reports and environmental governance scholarship. The paper argues that the law is insufficient because of weak enforcement, lack of coordination among various levels of government, and land classification that does not reflect ecological conditions.

Keywords: Ecological commons; public trust doctrine; waterbodies; encroachment; environmental governance; India.

A. Introduction and Background

In India, waterbodies have historically provided services beyond the confines of land, property and extractive resources. Rivers, ponds, lakes, wetlands, *johads*, *baolis*, tanks, floodplains, seasonal streams, nallahs and groundwater systems function as ecological infrastructure. They replenish groundwater, reduce flooding, promote biodiversity, support agriculture and pastoral livelihoods, create microclimates and help conserve social and cultural traditions related to water. Village ponds and tanks were not simply bodies of water; in many regions, they

[1] Constitution of India, arts. 21, 48A and 51A(g).

functioned as community institutions through which land, water, labour and customary obligations were organised.

The problem is legal because ecological systems do not always fit neatly into administrative categories. A pond may appear in revenue records, a wetland may be listed in an environmental inventory, a waterbody may be treated as municipal land in an urban plan, or a seasonal depression may be recorded as vacant land when it is dry. A seasonal stream may function as a drainage and recharge corridor, but it may not receive the same legal recognition as a perennial river. Similarly, while the ecological function of a floodplain is to retain excess water, it may still be treated as developable land. Thus, Indian waterbodies are public goods of high ecological value, but seasonal water systems often lack proper mapping and documentation, and fragmented governance structures allow encroachment and degradation.

Many waterbodies disappear not because of natural causes, but because of delayed or inadequate legal and governance recognition. A pond may first be used as a dumping site, then treated as a dry depression, later described as an unused parcel, and eventually converted into a construction site. A nallah may initially receive sewage, then be narrowed, covered or diverted. Likewise, the value of a floodplain is often assessed not by its ecological role but by its potential as developable land.

This problem becomes especially visible in peri-urban and ecologically fragile landscapes, where seasonal water systems, recharge areas, forested commons and drainage channels are closely connected but poorly recorded. When planning systems view ecological structures as isolated land parcels rather than connected hydrological systems, these landscapes become vulnerable to construction, quarrying, real estate speculation and administrative neglect. The fundamental question, therefore, is whether ecological function is legally acknowledged before development irreversibly alters it.

Indian environmental jurisprudence has tried to address this deficit through the public trust doctrine, the precautionary principle, the principle of sustainable development and the polluter-pays principle. In M.C. Mehta v. Kamal Nath[2], the Supreme Court held that the State is the trustee, and not the absolute owner, of natural resources. In Hinch Lal Tiwari v. Kamala Devi[3], the Court protected village ponds from casual conversion into private property. However, judicial recognition has not fully resolved the structural problem. This paper argues that although waterbodies are increasingly understood as ecological commons and the public trust

[2] M.C. Mehta v. Kamal Nath, (1997) 1 SCC 388.
[3] Hinch Lal Tiwari v. Kamala Devi, (2001) 6 SCC 496.

doctrine has been recognized in Indian law, the legal framework remains disjointed between constitutional recognition, land records and ecological realities.

Research Problem, Gap and Objectives

The main research question is: can Indian law defend waterbodies as ecological commons when administrative systems still treat them as land, revenue entries, drains, municipal properties, or development sites? Ideally, the protection of waterbodies ought to be pursued through public trust principles, constitutional environmental obligations, proper land records, community involvement and stringent anti-encroachment laws. However, statutory and administrative regimes remain segregated. Ecological value can be recognized by environmental law, while revenue records may treat the same area as vacant or unused land.

The research gap lies in the fact that the current literature and judgments tend to address rivers, wetlands, pollution, groundwater or the public trust doctrine as separate issues. They fail to adequately examine waterbodies as interconnected ecological commons of ownership, land category, seasonal hydrology, encroachment and governance failure. Seasonal streams, dry riverbeds, village ponds, johads, and non-perennial systems remain particularly under-explored in Indian legal scholarship

This research seeks to explore the extent to which the Indian legal system is sufficient to protect waterbodies against encroachment and ecological destruction. It aims to trace the historical change in ownership of water; study constitutional, statutory and judicial safeguards; consider the impact of ownership, control, use rights, and land classification on the protection of waterbodies; consider the impact of public trust, sustainable development, precaution and the polluter-pays principle; compare selected international approaches; and suggest reforms to map, identify and protect seasonal and ecologically sensitive water systems.

Methodological Note

This paper adopts doctrinal legal research as its primary methodology, supported by analytical, policy-based, and limited comparative approaches. The major sources are the Constitution of India, environmental laws, water pollution control laws, wetland laws, land revenue laws, forest laws where relevant, municipal and panchayat laws, groundwater regulation laws, and judicial decisions of the Supreme Court of India and High Courts. The paper makes special reference to the cases relating to the public trust doctrine, village commons, pond protection, lake and tank conservation, sustainable development and environmental principles.

Peer-reviewed environmental governance literature, law review scholarship, government

reports, policy documents, technical reports and comparative legal materials are examples of secondary materials. Ahmed and Araral's study[4] of water governance in India is used to understand the law-policy-administration interface in Indian states. The discussion of the legal and institutional complexity of groundwater governance is based on Khara's work[5]. Remote sensing and wetland studies are used only to justify the necessity of mapping and monitoring, not as a technical hydrological analysis.

The comparative element is explanatory and not comprehensive. It identifies the United Kingdom, New Zealand, Australia, and the European Union to identify lessons on river-basin management, planning control, rights of nature, wetlands, and catchment-based ecological governance.

B. Historical Background of Water Ownership in India

The Indian history of water ownership cannot be narrowed down to a mere public-private divide. Various layers of community stewardship, customary use and local authority existed in precolonial India to govern many water systems. Local labour, customary rules and common duties maintained tanks, baolis, johads, irrigation ponds, stepwells and village water commons. The agricultural cycles, ritual life, settlement patterns and community survival were infused with water. Although the institutional imagination was usually collective rather than individual, access was influenced by social rank.

The village ponds and tanks were particularly important in monsoon-reliant and semi-arid areas. They stored water, replenished groundwater, supported cattle, enabled irrigation, and supplied domestic water. Examples of water security relying on local storage and collective upkeep include johads in Rajasthan and Haryana, tanks in southern India, baolis in western and northern India, and irrigation ponds in agrarian regions. These waterbodies were common pool resources since any negligence, overuse, or encroachment would be detrimental to the larger community.

This relationship was restructured during the colonial period, when land and water became readable to the revenue state. The British revenue administration focused on survey, settlement, taxation, canal irrigation and extractive control. Traditional water systems were not necessarily abolished, though, they were increasingly subjected to state-oriented categories. The policies

[4] Ahmed, M., & Araral, E. (2019). Water governance in India: Evidence on water law, policy, and administration from eight Indian states. Water, 11(10), 2071. https://doi.org/10.3390/w11102071

[5] Khara, D. S. (2023). Groundwater governance in India: A legal and institutional perspective. Indian Journal of Public Administration, 69(1). https://doi.org/10.1177/00195561221128618

of forest and land settlement limited community access to ecological resources, and the policies of canal irrigation extended the bureaucratic control over water infrastructure. The ecological commons only manifested to the colonial state when it was converted into property, revenue, irrigation or administrative records.

This shift had long-term effects. As soon as waterbodies were included in the list of land parcels, tanks, ponds and seasonal channels were under threat of reclassification. An temporarily wet waterbody could be considered land. A typical pond might become an object of allotment. A drain in records might have been thinned out in case the hydrological value was not documented. The colonial heritage is thus not only in the centralised power but also in the division of land and ecology as a part of the administration.

The traditional water rights were also difficult to protect as soon as the local knowledge was replaced by the official records of ownership. The socially recognised johad, tank or seasonal stream may be legally endangered unless properly documented. This conflict between lived commons and documentary title is central to the ongoing conflict over ponds, drains, floodplains and village waterbodies.

India inherited and extended various models of resource governance that were state-centred after independence. Nation-building focused on development planning, irrigation projects, urban expansion and infrastructure development. Big dams and canals drew legal and political interest while little protection was given to small ponds, village tanks and seasonal systems.[6] Since the 1980s, environmental jurisprudence expanded with public interest litigation and a broadening interpretation of Article 21. However, judicial recognition did not completely overhaul land administration, municipal planning, or revenue classification. Elsewhere, in numerous villages, the protection of common waterbodies still relied on old maps, unwritten memory and popular opposition instead of on statutory protection. The same issue manifested itself in a different way in cities: lakes, drains and floodplains were considered an impediment to growth rather than ecological infrastructure. The outcome is the gradual displacement of community stewardship by extractive colonialism and later by bureaucratic ownership, where waterbodies may be formally owned by the community but cannot be effectively maintained unless records, enforcement, and local governance reflect their ecological purpose.

[6] Narmada Bachao Andolan v. Union of India, (2000) 10 SCC 664.

C. Constitutional and Legal Framework in India

Waterbody protection in India has a constitutional basis mainly grounded in Article 21[7], Article 48A[8] and Article 51A(g)[9]. The right to a clean and healthy environment is upheld in Article 21, which judicial interpretation has included within the right to life. Article 48A guides the State to conserve and enhance the environment and preserve forests and wildlife. Article 51A(g) imposes a fundamental duty on citizens to conserve the natural environment such as forests, lakes, rivers and wildlife. A combination of these provisions forms a constitutional system of rights, duties and obligations of the State.

Water governance, on the other hand, is a complicated issue constitutionally. Much of water supply, irrigation, drainage, land, agriculture, local government and local health is handled through state and local institutions, and Parliament has the power to make laws in areas like inter-state rivers, environmental protection and international obligations. A lake can include a municipal agency, state revenue authority, pollution control board, wetland authority and planning agency. Panchayat law, land revenue records and environmental principles may be involved in a village pond. This plurality in institutions tends to undermine accountability.

The central umbrella statute is the Environment (Protection) Act, 1986[10]. It authorizes the Central Government to act to protect and improve the environment and gives legal foundations to most rules and notifications, such as frameworks applying to wetlands, coastal regulation and ecologically sensitive areas. It is strong in breadth, yet frequently relies on executive notification, monitoring capability and administrative will to implement.

The Water (Prevention and Control of Pollution) Act, 1974[11] deals with water pollution through Central and State pollution control boards. Its logic of regulation is pollution control through standards, consent, monitoring and enforcement. This is crucial but it does not, by itself, safeguard the physical presence of waterbodies against encroachment or land conversion. A pond might not contain industrial effluent but still could still be filled for construction. A seasonal stream may not be polluted as defined by statute, but it may be narrowed, covered or diverted.

The Wetlands (Conservation and Management) Rules, 2017[12] provide a more ecological approach by assisting in the identification, conservation and management of wetlands by

[7] Constitution of India, art. 21.
[8] Constitution of India, art. 48A.
[9] Constitution of India, art. 51A(g).
[10] Environment (Protection) Act, 1986, No. 29 of 1986.
[11] Water (Prevention and Control of Pollution) Act, 1974, No. 6 of 1974.
[12] Wetlands (Conservation and Management) Rules, 2017.

wetland authorities. Their weakness lies in the fact that many smaller, seasonal, and village-level systems require identification, notification and boundary demarcation before protection comes into effect. In the case of a wetland that has not been recorded legally, there is no certainty as to whether it is under protection.

Land revenue laws are also significant since the protection of ponds, tanks, nallahs, johads and village commons requires protection to be recorded under land revenue laws. When a waterbody is registered as a pond, johad, nallah or public-utility land, there is less difficulty in protection. When records are old, wrong or modified, ecological commons are exposed to allotment, regularisation or development. Local law is also important, since drains, ponds, waste, stormwater and local land use fall under municipal and panchayat law; local bodies, however, are often underfunded, lack technical capacity or enforcement power.

The Indian Easements Act, 1882[13] assists in separating the ownership, the right of access and use, but a commons-based approach should go beyond the individual use rights. An individual might own land around a water body, and this does not come with the right to hinder drainage, pollute water or ruin the functioning of an ecosystem. Forest law, groundwater regulation, and planning law also apply in cases where the waterbodies are situated in the forested landscape, in the recharge area or in an urban expansion area. Groundwater regulation is especially challenging because the extraction is often linked to landownership, whereas the ecological implications cross the boundaries of aquifers, villages and urban settlements. This renders groundwater as being part of the larger commons issue as opposed to a distinctly personal resource issue.

The Indian courts have come up with doctrines that in some way bridge statutory gaps. Public trust doctrine, which is upheld in M.C. Mehta v. Kamal Nath, considers the State as a trustee of the natural resources and not absolute owner.[14] Cases that reinforced sustainable development, precautionary principle and the polluter-pays principle include Vellore Citizens Welfare Forum v. Union of India[15] and Indian Council for Enviro-Legal Action v. Union of India[16]. The precautionary principle is significant to seasonal waterbodies because the absence of visible water should not be mistaken with the absence of ecological function.[17] Polluter-pays principle supports the restoration of water systems that have been damaged by the pollution

[13] Indian Easements Act, 1882.
[14] Blackmore, A. C. (2018). Getting to grips with the public trust doctrine in biodiversity conservation. Bothalia, 48(1,).
[15] Vellore Citizens Welfare Forum v. Union of India, (1996) 5 SCC 647.
[16] Indian Council for Enviro-Legal Action v. Union of India, (1996) 3 SCC 212.
[17] A.P. Pollution Control Board v. Prof. M.V. Nayudu, (1999) 2 SCC 718.

and dumping. The weakness of the framework is not doctrinal poverty. Instead, the public trust doctrine is not automatically updated with land records, wetland rules are do not automatically safeguard unnotified seasonal systems and pollution control law is does not automatically constrain construction over recharge zones. Constitutional environmentalism therefore needs to be converted to administrative design.

D. Ownership and Legal Status of Waterbodies

The issue of waterbody ownership is both legal and ecological, but it remains incomplete. Rivers, lakes, ponds, wetlands, seasonal streams and undergroundwater systems can be governed by combinations of state ownership, public trust responsibilities, community use rights, and assertions of private access, municipal control, panchayat management and regulatory limitations. It is not merely who is entitled, but what obligations are attached to control, use and management.

Rivers are best viewed as publicly owned resources that are regulated by the state and under a public trust. The river is not an ordinary alienable property, even in areas where riverbeds, banks or neighbouring lands are under special departments or ownership. The Supreme Court in M.C. Mehta v. Kamal Nath[18] clarified that the State is supposed to be a trustee of natural resources. The jurisdiction of the State in rivers and riverbeds is then fiduciary, not absolute.

A very significant place is taken by the village ponds and commons. In the case Hinch Lal Tiwari v. Kamala Devi[19], the Supreme Court considered the land registered as a pond to be a public-utility land, which could not be converted to a privately owned land casually. In Jagpal Singh v. State of Punjab[20], the Court strongly opposed encroachment and regularisation of village common lands, such as ponds and pathways. The protection of common water resources and urban lakes has also been affirmed in Indian environmental jurisprudence.[21] Through these cases, it is clear that common lands, which are related to water, are of both constitutional and ecological worth, which cannot be measured only by the market.

Wetlands on private property are more problematic. An ecological commons approach gives boundaries to a property based perspective given that a property based view might be tempting to have a lot of private control. The ownership right of the land is not accompanied by the unrestricted right to destroy the ecosystem functions like flood control, groundwater recharge,

[18] M.C. Mehta v. Kamal Nath, (1997) 1 SCC 388.
[19] Hinch Lal Tiwari v. Kamala Devi, (2001) 6 SCC 496.
[20] Jagpal Singh v. State of Punjab, (2011) 11 SCC 396.
[21] Intellectuals Forum, Tirupathi v. State of Andhra Pradesh, (2006) 3 SCC 549.

pollution filtration and habitat protection. Thus, even privately located wetlands can entail regulatory constraints. This is not an assault on property but an acknowledgment that property is embedded in a constitutional order that safeguards life, the environment and the general good.

The most sensitive category is seasonal streams and dry riverbeds. They are frequently without the visibility of perennial rivers or large lakes. In dry months, they can be as empty depressions, sandy beds or unused land. They can, hydrologically, however, carry monsoon flows, recharge aquifers, link wetlands or prevent flooding. When these areas are inappropriately classified as empty land, ecological functions may be permanently obstructed by construction. It is due to this that land records need to capture not only present surface water, but also seasonal drainage, catchments and recharge functions. Effective protection must therefore distinguish ownership, control, access, management, and use rights. A waterbody can be communally owned and mismanaged, privately bordered but controlled publicly or locally exploited but owned by the State. These dimensions need to be incorporated in legal protection rather than diminishing waterbodies to title only.

E. River Rights and Emerging Environmental Jurisprudence

The rights of nature movement is based on the idea that nature is not merely an object of human exploitation. It contends that rivers, forests, mountains and ecosystems can be acknowledged as rights-bearing entities that are embodied by guardians or institutions. Such a strategy has become notable through constitutional recognition of the rights of nature in Ecuador and legal recognition of the Whanganui River in New Zealand.

The New Zealand model is noteworthy because it does not merely proclaim the river valuable. The Te Awa Tupua framework acknowledges the Whanganui River as a living whole, legally recognizes it as a person, and establishes guardianship and restoration mechanisms. Its teaching to India is that the issue of legal recognition should be accompanied by institutional design, representation and long-term responsibility.

There have also been development of rights of nature in India. The Uttarakhand High Court rulings on the Ganga and Yamuna sought to declare rivers as having legal personhood or life. These Indian river personhood cases are studied by Nakazora[22] in the context of the broader development of the rights of nature and cautions against diminishing them to mere religious

[22] Nakazora, M. (2023). Environmental law with non-human features in India: Giving legal personhood to the Ganges. South Asia Research, 43(2), 172-191. https://doi.org/10.1177/02627280231163094

metaphor. These decisions reveal judicial dismay at pollution, administrative incompetence and the ineffectiveness of ordinary regulation.

But in India, there are practical limits to river personhood. Who is the representative of the river? Who is at fault, an institution? Is it a case of suing a river? What would be the interaction of personhood with pollution control, inter-state disputes, dams, religious use and municipal sewage? Legal personhood declared without guardianship, funding, enforcement and accountability can be merely symbolic.

In the case of India, the rights of rivers can modify the legal imagination of the resource extraction to the ecological integrity. But enforcement and governance is the main issue. A river can be considered a legal person and still still receive untreated sewage. It is possible to have a floodplain that is an ecologically significant area but still face construction pressure. Public trust doctrine, pollution control, land-use regulation, basin planning and local accountability should thus be complementary to river rights, rather than substitutes. River rights should be associated with actual guardians, restoration obligations, scientific surveillance and penalties for non-compliance in case they are adopted otherwise, they will become a potent term without institutional backing.

F. Comparative International Framework

The limited comparative inquiry indicates that waterbody protection requires institutional integration and not just a single legal declaration.[23] The United Kingdom integrates environmental controls, planning control, river-basin management, flood risk regulation and water quality standards. Despite the implementation issues, the strategy illustrates the significance of integrating land-use planning and catchment governance and floodplain protection. Water protection is not treated merely as pollution control but linked to drainage, development permits, habitat protection and flood risk.

The Water Framework Directive of the European Union is significant in its river basin strategy. It rationale is that water governance must be structured around hydrological units and not solely on administrative boundaries. This applies to India since rivers, streams, wetlands, floodplains and groundwater systems tend to cross municipal, district and state boundaries. The gap between ecological systems and fragmented administration can be reduced by a basin or catchment approach.

[23] Mirumachi, N., & Hurlbert, M. (2022). Reflecting on twenty years of international agreements concerning water governance. International Environmental Agreements: Politics, Law and Economics, 22.

The Whanganui River framework in New Zealand is another lesson. Legal personhood can only be meaningful with guardianship, restoration funding and explicit institutional responsibility. Personhood in itself is not the model, personhood and governance architecture is the model. The river rights debates in India must, consequently, be less about symbolic status than about representation, responsibilities and enforced restoration.

The Australian experience, with basin-level governance, especially in water-scarce areas, underscores the importance of allocation rules, ecological flows and institutional coordination. Although the situation in India is slightly different concerning the constitutional and social context, the general message is that the protection of waterbodies cannot be achieved solely by departmental action alone. Catchment planning, ecological flow identification, wetland conservation, local involvement and land-use control should collaborate.

Comparative examples are thus not a basis for wholesale transplantation. They demonstrate that India must better integrate the environmental law, land records, planning systems, pollution control, local governance and ecological mapping. The institutional design that is applicable is that waterbodies need to be managed as an integrated system of ecology, rather than on a case-by-case basis by different departments. In the case of India, it implies that the river basin planning should address the municipal drainage, wetland protection should address the revenue records, and floodplain regulation should address the development permission. Comparative models can be helpful only insofar as they can be used to bring law closer to the ecological role.

G. Limitations of the Current Indian Legal Regime

The initial constraint is fragmentation of governance. Waterbodies are governed by revenue, irrigation, environment, forest, municipal, panchayat, groundwater, pollution control and planning bodies. Each institution sees a different legal object: land, water quality, drainage, public property, development potential or local commons. Without coordination, the ecological systems collapse through institutional gaps. Ahmed and Araral demonstrate that Indian water management is characterized by complex relationships between law and policy and administration across states.[24] Urban lake governance also shows how managerial, clientelist and populist pressures may shape institutional outcomes.[25]

[24] Ahmed, M., & Araral, E. (2019). Water governance in India: Evidence on water law, policy, and administration from eight Indian states. Water, 11(10), 2071. https://doi.org/10.3390/w11102071

[25] Natha, S. (2021). Managerial, clientelist or populist? Lake governance in the Indian city of Bangalore. Water International, 46(4).

The second weakness is weak enforcement. Courts have already affirmed environmental principles, and encroachments are hard to eliminate. Pollution control boards can be resource-deficient or under-resourced, municipalities can be deficient in sewage-treatment facilities and regularisation of illegal occupation can work against deterrence. Litigation can lead to potent orders, yet budgets, monitoring, and administrative will are needed to maintain compliance in the long term.

The third weakness is the lack of ecological knowledge in the legal classification. The law tends to guard what it can recognize. When not mapped, named, notified or recorded, a wetland, pond or seasonal stream is deemed vulnerable. Seasonal channels and dry ponds may not be visible in land records though they are essential in recharge, drainage and flood moderation. This poses a great threat particularly in urban and peri-urban areas where land prices create pressure to convert idle ecological areas.

The fourth constraint is ownership ambiguity. Public ownership is not necessarily the same as public protection, nor is private ownership necessarily unrestricted use, nor does community use necessarily establish formal title. Waterbodies can be found at the border of title, custom, ecology and administration. Unclear ownership leads to a lack of clear responsibility and a vacuum in governance.

The fifth constraint is weak land records. Failure to record many waterbodies leads to their loss not by overt legal abolition. Boundaries are narrowed, catchment areas are erased, old village maps are not taken into consideration in urban development, wetlands are not listed in the inventory, and seasonal channels are considered as buildable land. In these instances, there is failure of law since its database is erroneous.

The sixth constraint is pressure of urbanisation and real estate development. Floodplains, recharge areas and nallahs are commonly regarded as barriers to development rather than climate-resilient infrastructure. The effects are predictable: flooding, waterlogging, pollution, aquifer depletion and biodiversity loss.

The seventh constraint is groundwater uncertainty. Groundwater is invisible, scattered and hard to control. Historically, its legal treatment has been associated with land rights but over-extraction impacts communities and ecosystems beyond the individual parcel. As Khara highlights, the governance of groundwater in India is both institutionally and legally complicated.[26] This uncertainty is important as surface waterbodies and groundwater are

[26] Khara, D. S. (2023). Groundwater governance in India: A legal and institutional perspective. Indian Journal of Public Administration, 69(1). https://doi.org/10.1177/00195561221128618

ecologically interconnected. Destruction of ponds, floodplains and recharge areas leads to groundwater stress; over-extraction of groundwater can result in the demise of wetlands and local water systems. The fundamental weakness is therefore conceptual: legal categories cannot correspond to ecological realities. Until law begins with hydrological interdependence, the protection of waterbodies will be partial.

H. Recommendations and Reform

First of all, India must map and digitise all waterbodies nationally, seasonal and non-perennial. Mapping should include rivers, ponds, lakes, johads, tanks, wetlands, floodplains, nallahs, seasonal streams, recharge zones and drainage corridors. National Wetland Inventory and Assessment[27] can be a valuable foundation, but mapping needs to be expanded to local systems. Second, land records should be integrated with ecological data. Revenue maps, satellite imagery, wetland inventories, municipal plans, and village records should be cross-verified. When land functions as a seasonal drainage system or recharge area, it must be treated by the law as such an ecological system. Waterbody layers should be provided as digital records and should not be changed without an ecological assessment and public notice.

Third, seasonal waterbodies should be given legal status. Dry riverbeds, monsoon channels, johads, seasonal ponds and floodplain depressions should not be considered empty land simply because they are dry for part of the year. Intermittent and seasonal hydrological systems should be legally defined.

Fourth, more powerful anti-encroachment mechanisms are needed. Encroachment on waterbodies must lead to restoration obligations, removal directives, fines and disclosure to the general public. Encroachment on ecological commons should not be regularised except in exceptional circumstances which are narrowly construed. The reasoning of Jagpal Singh should be applied: shared ecological resources cannot be treated as surplus land to occupy privately.

Fifth, conversion of land must be accompanied by compulsory ecological evaluation in any area that is impacted by waterbodies, drainage channels, floodplains or recharge areas. Planning approval should not be granted on the basis of ownership documents alone. Local authorities should maintain registers of available waterbodies, discourage dumping, flag encroachment and engage in restoration. The community involvement is to be institutionalised rather than considered as voluntary activism.

Lastly, India ought to contemplate either a specific Waterbody Protection Act or greater

[27] Space Applications Centre, ISRO. National Wetland Inventory and Assessment Atlas, Government of India.

harmonisation of the existing environmental, revenue, municipal and planning legislation. Specific legislation may define waterbodies broadly, identify seasonal regimes, mandate mapping, ban encroachment, unify land records, and create databases to be accessible to the public. Technology, including GIS and remote sensing, can support this framework, although it becomes meaningful only when it is connected to the legal implications: demarcation, prohibition, restoration and accountability.

I. Conclusion

The degradation of waterbodies in India is not merely an environmental concern, but a governance failing. Waterbodies are recognized by Indian law as public and ecological resources under constitutional principles, environmental regulations, and judicial doctrines. Article 21 reinforces the right to a healthy environment, Article 48A directs the State to conserve nature, Article 51A(g) assigns environmental duty to citizens, and legislation like the Environment (Protection) Act, 1986 and Water Act, 1974 provide regulatory instruments. This framework has been enhanced by courts through the public trust theory, sustainable development, precautionary principle and the conservation of village commons.

But the continuing of encroachment, pollution, land conversion, and loss of local waterbodies demonstrates that the formal recognition is not enough. The legislative structure is still disconnected in land, water, environment, revenue, municipal, panchayat, planning and groundwater systems. Seasonal streams, dry ponds, flood plains, johads and recharge zones are particularly susceptible because in administrative records, they are not always recognized by biological function. Law protects visible and categorized water more efficiently than intermittent or misclassified water.

The major point of this study is thus that India must see waterbodies as ecological commons that are interdependent, not land units. The protection needs appropriate mapping, digitized and ecologically sensitive land records, legal recognition of seasonal regimes, stronger anti-encroachment legislation, community involvement, local accountability and synergy among the environmental and planning ministries. Judicial concepts are crucial, but they need to be turned into real governance.

The future of waterbody conservation rests on whether law can detect ecological significance before it is destroyed. Rivers, ponds, marshes, nallahs, johads, floodplains, village commons and groundwater systems are not peripheral spaces to be exploited, but the ecological underpinnings of water security, climate resilience and environmental justice. Protecting them

as ecological commons is crucial to the constitutional commitment to a healthy environment and to the long-term survival of Indian towns, villages and landscapes.

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