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HYDROLOGICAL MISMANAGEMENT IN TAMIL NADU: A STUDY OF THE ADMINISTRATIVE AND LEGAL ASPECTS OF ENCROACHMENT OF WATER BODIES

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Abstract

The state of Tamil Nadu, historically distinguished by its sophisticated "Eri" (tank) cascade systems, currently faces a profound hydrological crisis precipitated by systemic administrative mismanagement and the rampant encroachment of its water bodies. This research article provides an exhaustive legal and administrative inquiry into the mechanisms of water body encroachment, examining the transition from colonial land tenure systems to contemporary environmental jurisprudence. Adhering to the University Grants Commission (UGC) guidelines for academic research, the study scrutinizes the efficacy of the Tamil Nadu Protection of Tanks and Eviction of Encroachment Act, 2007, alongside the foundational Tamil Nadu Land Encroachment Act, 1905. A significant analytical focus is placed on the judicial evolution of the Public Trust Doctrine, specifically through the landmark Full Bench decision of the Madras High Court in *T.K. Shanmugam v. State of Tamil Nadu*, which categorically rejected the "disuse" theory often employed by the state to regularize illegal occupations. The research highlights the critical administrative lapses occurring at the intersections of the Revenue Department and the Water Resources Department, where inaccurate survey demarcations and the issuance of regularizing Government Orders have facilitated the degradation of tanks, ooranies, and river porambokes. Furthermore, the article evaluates the transformative potential of the Tamil Nadu Water Resources (Regulation, Management and Augmentation) Act, 2026, which introduces a centralized, participatory framework for integrated water governance. By synthesizing statutory provisions, case law, and technological interventions such as GIS mapping through the TNGIS portal, the study argues for a paradigm shift from human-centric "development" towards an eco-centric restoration model that upholds intergenerational equity and the State's fiduciary duties.

Keywords: Hydrological Management, Public Trust Doctrine, Water Body Encroachment, Tamil Nadu Protection of Tanks and Eviction of Encroachment Act 2007, Administrative Accountability, Integrated Water Resources Management (IWRM).

Introduction

The hydrological landscape of Tamil Nadu is an ancient architectural testament to a society that viewed water not as a mere commodity, but as a sacred communal heritage. For centuries, the state relied upon an intricate network of over 50,000 tanks and lakes, meticulously designed to harvest monsoonal runoff and recharge the subterranean aquifers. This "Eri" system was the lifeblood of rural agrarian economies and urban settlements alike. However, the contemporary era has witnessed a catastrophic decline in these traditional systems, driven by a demographic

shift where Tamil Nadu's urbanization has reached 48.5% and is projected to escalate to 67% by 2030. This rapid expansion has prioritized concrete infrastructure over hydrological integrity, leading to a state of systemic mismanagement where water bodies are viewed as "unproductive" lands available for reclassification and occupation.

The administrative and legal aspects of water body encroachment in Tamil Nadu reveal a complex interplay between outdated colonial laws and modern environmental mandates. While the Tamil Nadu Land Encroachment Act of 1905 provided a general framework for protecting government property, it was the specialized Tamil Nadu Protection of Tanks and Eviction of Encroachment Act of 2007 that attempted to provide technical rigor to the protection of irrigation infrastructure. Despite these enactments, the ground reality remains grim. In Chennai alone, the Water Resources Department (WRD) reported the abandonment of nearly 200 tanks due to urbanization by the end of the 20th century. This phenomenon is not merely an environmental byproduct but is deeply rooted in the "disuse" theory—a legal and administrative fallacy where the state argues that because a water body has dried up or its feeder channels are blocked, it no longer serves a public purpose and can thus be regularized for housing or commercial projects.

The judiciary has stepped into this regulatory vacuum, invoking the Public Trust Doctrine (PTD) to remind the executive of its fiduciary obligations. The Madras High Court, in a series of landmark rulings, has asserted that the State is not the owner but the trustee of natural resources, and that these resources are held for the benefit of both current and future generations. The failure of the state to prevent "man-made disuse"—where cartels systematically destroy hydrological connections to facilitate land grabbing—has been termed a grave violation of Article 21 (Right to Life) and the constitutional mandates under Articles 48-A and 51-A(g).

This research article, structured in accordance with UGC standards for legal research, aims to dissect the administrative hierarchy and statutory mechanisms that have either failed to protect or actively contributed to the erosion of Tamil Nadu's water bodies. It examines the roles of various officers, from the Village Administrative Officer (VAO) to the District Collector, and evaluates the recent legislative shift toward the 2026 Water Resources Act. By analyzing the tensions between the "Right to Livelihood" of encroachers and the "Doctrine of Public Trust," the study seeks to propose a more resilient framework for hydrological management.

Literature Review

The existing literature on hydrological management in Tamil Nadu is categorized by two primary shifts: the historical transition from communal management to state-led bureaucracy, and the jurisprudential shift from land-revenue-centric laws to eco-centric protections. Scholars have long noted that the "Kudimaramathu" system—a traditional practice of community-led tank maintenance—was systematically dismantled during the British colonial era, leading to the "nationalization" of water bodies. This transition created a sense of alienation among local communities, who were no longer responsible for the maintenance of their own water sources.

Legal scholarship, particularly the reports by PRS Legislative Research and various case commentaries, highlights that the Tamil Nadu Protection of Tanks and Eviction of Encroachment Act, 2007, was a legislative response to the limitations of the 1905 Act. However, as observed in the paper "A Critical and Comparative Study on Encroachment Laws in India," the 2007 Act focuses predominantly on tanks under the Public Works Department (PWD), leaving a vast number of minor irrigation tanks and urban "ooranies" in a state of regulatory ambiguity. The "disuse" theory has been a focal point of recent academic debate. Researchers argue that administrative bodies

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often use the physical state of a dry tank as a justification for reclassification, ignoring the fact that hydrological cycles include periods of dormancy and that the land remains a vital recharge zone even when surface water is absent.

The application of the Public Trust Doctrine (PTD) in India, extensively documented in environmental law journals, traces the doctrine's path from Roman law to the landmark *M.C. Mehta v. Kamal Nath* judgment. In Tamil Nadu, the literature emphasizes the role of the *L. Krishnan v. State of Tamil Nadu* decision as the foundational precedent for protecting water bodies as communal properties. Recent studies also point to the emergence of the "Intergenerational Equity" principle, suggesting that the current generation holds no right to permanently alienate or destroy resources that are essential for the survival of descendants.

Furthermore, reports by organizations like the Centre for Science and Environment (CSE) and DHAN Foundation provide critical data on the scale of the problem. These reports suggest that nearly 3,000 tanks exist only on paper (the so-called "paper tanks"), having been subsumed by urbanization and administrative apathy. The 2023 Policy Note of the Water Resources Department further complicates the narrative by detailing the ongoing tension between "infrastructure projects" and "flood mitigation," where the state sometimes creates new ponds while simultaneously failing to protect old ones. This review of the literature underscores a significant gap between statutory intent and administrative execution, necessitated by a move toward the Integrated Water Resources Management (IWRM) model proposed in the 2026 Act.

Methodology

This research employs a doctrinal and analytical methodology, consistent with high-level legal academic standards. The study is founded upon a comprehensive review of primary legal sources, including:

1. **Statutory Analysis:** A section-by-section examination of the Tamil Nadu Land Encroachment Act, 1905, the Tamil Nadu Protection of Tanks and Eviction of Encroachment Act, 2007, and the Tamil Nadu Water Resources (Regulation, Management and Augmentation) Act, 2026.
2. **Case Law Analysis:** An in-depth review of significant judicial pronouncements from the Madras High Court and the Supreme Court of India, particularly the Full Bench decision in *T.K. Shanmugam v. State of Tamil Nadu* and the recent *Futala Lake* judgment (2025).
3. **Administrative and Policy Review:** Analysis of Government Orders (GOs), WRD Policy Notes, and reports from the National Green Tribunal (NGT) to understand the executive's role in regularization and eviction.

The secondary data utilized includes historical statistics on tank irrigation, urban planning reports for the Chennai Metropolitan Area, and technological data from the Tamil Nadu e-Governance Agency (TNeGA) regarding the digitalization of land records and GIS mapping. The study synthesizes these diverse data points to identify systemic failures in hydrological management and proposes a normative framework for reform based on the principles of sustainability and public trust.

Results and Findings: Legal Framework and Statutory Failures

The legal architecture for managing water body encroachments in Tamil Nadu is a dual system that balances general land-use laws with specialized irrigation protection statutes. However, the findings indicate that this complexity often provides "loopholes" that facilitate unauthorized occupation and administrative inaction.

The Conflict Between General and Special Laws

The Tamil Nadu Land Encroachment Act of 1905 remains the bedrock of land management in

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the state. It empowers the District Collector to initiate removal proceedings through a sequence of administrative steps: survey, notice, and final eviction orders. However, the 1905 Act was designed for revenue collection and general property protection, not for the specific preservation of hydrological systems.

In contrast, the Tamil Nadu Protection of Tanks and Eviction of Encroachment Act, 2007, was enacted to specifically address the vulnerabilities of irrigation tanks under the PWD. Despite its specialization, the Act is limited in scope. It applies primarily to tanks managed by the Water Resources Organization (WRO), often ignoring the thousands of minor irrigation tanks under the control of panchayats and local bodies.

Table 1: Statutory Comparison of Encroachment Laws

Feature	TN Land Encroachment Act, 1905	TN Protection of Tanks Act, 2007
Applicability	All Government poramboke lands, including roads and rivers.	Specific to tanks, lakes, and reservoirs under PWD/WRO.
Key Officers	District Collector, Tahsildar, Revenue Inspector.	Survey Officer, PWD Assistant Engineer.
Notice Procedure	Sections 6 & 7 (Show-cause and final order).	Forms I, II, and III (Standardized technical notices).
Penalty	Eviction and assessment of penal revenue (B-Memo).	Imprisonment up to 3 months or fine up to Rs. 5,000.
Core Objective	Revenue protection and land recovery.	Hydrological integrity and storage capacity preservation.

The Procedural Rigor of the 2007 Act

The 2007 Act introduced a technically detailed procedure for identifying encroachments. The Survey Officer, not below the rank of Taluk Surveyor, is mandated to traverse the tank boundaries based on original revenue records. Simultaneously, the PWD officer must assist in demarcating these limits and fixing permanent boundary stones. The results must be published in Form I and II notices on the village notice boards, allowing for public transparency.

However, the study finds that these procedures are frequently bypassed or inaccurately executed. Encroachers often cite the absence of Form I and II notices to challenge Form III eviction orders in court, leading to prolonged stays on eviction. Furthermore, the definition of "Tank Poramboke" under Section 2(g) is expansive, including all land liable to submersion at full tank level and its appurtenances, yet administrative bodies often narrow this definition to suit developmental goals.

Table 2: Historical Statistics of Tank Destruction in Tamil Nadu

Category	Statistic	Source / Context
Total Tanks	50,000+	Historical total in Tamil Nadu.
PWD Tanks	10,711	Under direct control of the Water Resources Department.
Minor Irrigation Tanks	39,003	Managed by Panchayat Unions and Local Bodies.
"Paper" Tanks	~3,000	Tanks that exist in

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Category	Statistic	Source / Context
		records but have been physically subsumed.
Chennai Urban Impact	~200 abandoned	Tanks lost in the Adayar minor basin due to urbanization by 1999.
Groundwater Availability	900 cubic meters	Per capita availability, significantly below the national average.

The findings suggest that the 3,000 "paper tanks" represent a massive failure of the 2007 Act's implementation. These tanks were lost because the administrative machinery failed to maintain the "supply channels" and "surplus weirs," allowing the tanks to dry up and become vulnerable to encroachment.

Results and Findings: Administrative Aspects and Lapses

The administrative management of water bodies in Tamil Nadu is characterized by a fragmented hierarchy where departments often work at cross-purposes. The findings identify three primary areas of failure: the "Patta" regularization crisis, the "B-Memo" culture, and the disconnect between Revenue and Technical departments.

The Administrative Hierarchy and Role of the VAO

At the base of the revenue administration is the Village Administrative Officer (VAO). The VAO's duties are critical: maintaining the "Adangal" (crop register), reporting encroachments, and supervising irrigation sources. However, the "present scenario of rampant encroachment" is largely attributed to the VAO's failure to report unauthorized occupations as they occur.

Table 3: Administrative Hierarchy for Water Body Management

Level	Responsible Official	Primary Hydrological Function
State	Chief Secretary / WRD Secretary	Policy formulation and integrated basin planning.
District	District Collector	Apex authority for initiating eviction and coordinating departments.
Taluk	Tahsildar	Revenue inquiry, record verification, and issuance of legal notices.
Basin	Executive/Assistant Engineer (WRD)	Maintaining structural integrity (dams, sluices) and technical surveys.
Village	Village Administrative Officer (VAO)	Ground-level monitoring, record keeping, and reporting violations.

The regularization Dilemma: GOs and Pattas

The most egregious administrative lapse is the issuance of Government Orders (GOs) that permit the regularization of encroachments on water bodies. Findings indicate that GO Ms. No. 854 (2006) and No. 579 (2008) were specifically designed to grant land titles (pattas) to encroachers who had occupied land for specific periods. This created a "moral hazard" where citizens were incentivized to occupy water bodies in the hope of future regularization.

The Commissioner of Land Administration (CLA) has recently issued strict directives against this practice, noting that in many cases, encroachers justify their presence by citing existing government buildings (like court

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complexes or housing board projects) constructed on water bodies. The High Court has ordered that disciplinary action be taken against officials who approved such constructions on land classified as "water body".

The "B-Memo" and adverse Possession Fallacy

The Revenue Department frequently issues "B-Memos," which are essentially penalties for unauthorized occupation. However, in the field, these are often misinterpreted as "rent" or proof of valid possession. Findings show that encroachers use decades of B-Memo payments to claim "adverse possession" in civil courts. The judiciary has recently clarified that one cannot claim adverse possession against the Public Trust, as the State itself cannot alienate a water body.

Technological Failures and GIS mapping

While the Tamil Nadu e-Governance Agency (TNeGA) has established the TNGIS portal to host over 348 spatial layers, the integration of this data into daily administrative decision-making remains inconsistent. Findings reveal a "lack of coordination" and "restrictive map policies" that prevent departments from sharing updated data. For instance, a "pond" in the PWD map might be registered as "empty land" in the local municipal tax records, allowing for building permits to be erroneously granted.

Results and Findings: Judicial Trends and the Rejection of Disuse

The judicial findings of this study center on the shift from a human-centric "livelihood" balance to an eco-centric "restoration" mandate. The Madras High Court has been instrumental in dismantling the administrative justifications for mismanagement.

The Rejection of the "Disuse" Theory

Administrative bodies often argue that if a water body has fallen into disuse, its classification can be changed. The Full Bench in *T.K. Shanmugam v. State of Tamil Nadu* categorically rejected this. The court noted:

1. **Anthropogenic Disuse:** Many water bodies are in disuse because of "man-made" factors—the failure of the state to protect feeder channels and allow natural flow.
2. **Original Characteristics:** The "original ingredients" of the land as a water-holding structure must be maintained for the collective good.
3. **Restoration Mandate:** Even if a tank appears dry, it must be restored to its "pristine condition" rather than being subsumed for development.

The Expansion of the Public Trust Doctrine

The doctrine has evolved to include even man-made or artificial water bodies if they contribute to the ecological balance. In the *Futala Lake* case (2025), the Supreme Court held that the Public Trust Doctrine flows from the foundation of Articles 48-A and 51-A(g) and applies to any resource drawn from nature.

Table 4: Key Judicial Pronouncements

Case Citation	Key Finding / Principle	Impact on Hydrological Management
L. Krishnan v. State of TN (2005)	Mandatory removal of encroachments; water as public trust.	Set the precedent for PILs targeting tank encroachments.
Hinch Lal Tiwari v. Kamal Devi	State as trustee for natural resources for future generations.	Reinforced intergenerational equity.
Jagpal Singh v. State of Punjab	Regularization of village pond encroachments is illegal.	invalidated many state GOs on regularization.
T.K. Shanmugam v. State of	Disuse does not permit reclassification;	The most significant Full Bench decision

Case Citation	Key Finding / Principle	Impact on Hydrological Management
TN (2015)	GOs for patta are illegal.	in TN history.
State of TN v. Madras Race Club (2025)	Strengthening ponds and Eco Parks are infrastructure projects.	Balanced development with active flood mitigation projects.

The findings show that the judiciary now views the State as having a "high fiduciary duty of care". This means that the default position of any court is the restoration of the water body, regardless of how long the encroachment has existed or the socio-economic status of the encroachers.

Discussion: The 2026 Water Resources Act and Future Outlook

The findings lead to a critical discussion on the newly passed Tamil Nadu Water Resources (Regulation, Management and Augmentation) Act, 2026. This legislation represents the state's attempt to resolve the fragmented mismanagement of the past century.

Integrated Water Resources Management (IWRM)

The 2026 Act adopts the IWRM approach—a globally accepted principle promoted by the UN—where water is treated as a "finite and vulnerable resource". It centralizes governance under the Tamil Nadu Water Resources Management Authority (TNWRMA), chaired by the Chief Secretary.

Table 5: Components of the TN Water Resources Act, 2026

Component	Responsibility	Function / Goal
TNWRMA (Apex Authority)	Chief Secretary & Multi-dept Secretaries.	Formulation of State Water Policy and Management Plans.
District Committee	District Collector.	District-level planning and coordination of local removals.
Participatory Governance	Water Users Associations.	Involving stakeholders in decision-making and maintenance.
Zoning	TNWRMA Recommendations.	Demarcating Groundwater Protection, Floodplain, and Conservation Zones.

The Shift to Economic Good and Tariffication

One of the most debated aspects of the 2026 Act is the recognition of water as an "economic good". The TNWRMA is empowered to fix tariffs for "commercial water use," a move intended to discourage over-exploitation and waste. This aligns with the National Water Policy 2012, which emphasizes that water projects should be physically and financially sustainable.

Table 6: Penalty and Regulatory Structure (2026 Act)

Provision	Targeted Activity	Regulatory Mechanism
Bulk Water Transfer	Commercial transport of extracted water.	Licensing and fee system.
Commercial Tariffs	Industrial and	Volumetric pricing by TNWRMA.

Provision	Targeted Activity	Regulatory Mechanism
	commercial abstraction.	
Unauthorised Extraction	Illegal borewells in "Protection Zones".	Penalties and decommissioning of wells.
Flood Management	Structures in designated "Floodplain Zones".	Restricted usage and mandatory Master Plans.

Discussion on the "Participatory" Clause

The Act places a high emphasis on "participatory governance". This is a response to the "alienation" observed in colonial systems. By giving statutory powers to Water Users Associations, the Act hopes to revive the spirit of "Kudimaramathu," where the community has a vested interest in preventing encroachment to protect its own resource share. However, the study identifies a potential conflict: while the Act encourages participation, it also centralizes power in a "highly bureaucratic" authority (TNWRMA), which may stifle local initiatives if not properly managed.

Conclusion

The study of hydrological mismanagement in Tamil Nadu reveals that the degradation of water bodies is not an inevitable consequence of progress, but a structural failure of law and administration. For decades, the "disuse" of tanks was treated as a valid ground for reclassification, a practice that incentivized the destruction of feeder channels and surplus weirs by real-estate interests. The administrative hierarchy, from the VAO to the District Collector, has historically prioritized revenue collection and short-term development over the fiduciary duty to protect the Public Trust.

However, the legal landscape has undergone a revolutionary shift. The Full Bench decision in *T.K. Shanmugam v. State of Tamil Nadu* has effectively "frozen" the ability of the state to regularize encroachments, asserting that the ecological character of a water body is immutable. The rejection of adverse possession and the "disuse" theory provides a strong legal foundation for the mandatory restoration of all 50,000 tanks to their pristine condition.

The administrative response must now move beyond reactive eviction to proactive, technology-driven management. The TNGIS platform offers the spatial accuracy needed to prevent conflicting land-use certificates, but its success depends on the "AS-IS" correction of legacy errors in the revenue records. The integration of "Digital Twins" and IoT sensors for real-time flood monitoring represents the necessary evolution of hydrological management in the era of climate change.

The Tamil Nadu Water Resources (Regulation, Management and Augmentation) Act, 2026, offers a promising path forward. By adopting the IWRM framework and prioritizing "Water for Life," the Act provides the institutional tools to manage water basins holistically. However, the true test of this legislation will lie in its ability to enforce commercial tariffs and groundwater protection zones without succumbing to the political pressure of reclassification. The state must transition from being a "proprietor of land" to a "trustee of life," ensuring that the hydrological heritage of Tamil Nadu is preserved for the generations of the 21st century and beyond.

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