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Inter-State Water Disputes in South India

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Summary and Keywords

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Water-related disputes in India have been a fraught area of contestation between state governments in the post-colonial period. Since the late 20th century, much of this conflict has been centered on mechanisms of legal adjudication both through the centralized state machinery of tribunals set up by the central government and by legal suits brought by states before the Supreme Court. Formal records of tribunal and court judgments provide skeletal accounts of legal claims, technical evidence, and judiciary responses between unitary state governments with hardened positions and conflicting interests. Tamil Nadu, a lower riparian state is reliant on water-sharing arrangements and the shared management of water-related infrastructure with its three neighboring states of Andhra Pradesh, Karnataka, and Kerala. The water-related agreements that link Tamil Nadu with its neighbors vary in significant ways in terms of the scope of the agreements, the kinds of issues under contention, the political dynamics of the agreement, and the outcome and implementation of each of the agreements. Political, institutional, and agential dimensions of state action are both shaped and constrained by historical structures of political economy. Both centralized structures of the colonial state and the political economy of India's planned developmental state shape this set of interstate water negotiations and disputes that weigh on the states that share water resources and infrastructure in Southern India. While historical processes have produced the structural conditions that have shaped such disputes, recent policies of liberalization have intensified conflicts over water. For instance, processes of urbanization and city-centric models of growth have increased pressures on water resources in India. Social scientific scholarship that has focused on the politics of economic reforms and on the ways in which reforms have been shaped by India's federal structure has tended to treat states as discrete entities. Such scholarship has analyzed the impact of India's federal structure on reforms through a focus on relationships between states and the central government. While this has produced a heightened focus on the significance of federalism in the post-liberalization period, such work has paid less attention to relationships between states. The focus of such social scientific scholarship on particular sectors of the economy (such as telecom, electricity, and land/real estate) that are visibly associated with reform policies has compounded this analytical gap. Unlike such sectors, water is not contained within the territorial boundaries of states. A historical perspective on water disputes provides a means for unsettling the conventional analytical boundaries of political scientific conceptions of federalism in the post-liberalization period.

Keywords: water, interstate disputes, Tamil Nadu, South India, political economy, inequality, colonialism, federalism, state, Supreme Court

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Water-related disputes in India have been a fraught area of contestation between state governments in the post-colonial period. Since the late 20th century, much of this conflict has centered on mechanisms of legal adjudication both through the centralized state machinery of tribunals set up by the central government and by legal suits brought by states before the Supreme Court. Formal records of tribunal and court judgments provide skeletal accounts of legal claims, technical evidence, and judicial responses between unitary state governments with hardened positions and conflicting interests. This article will draw on an analysis of Tamil Nadu's interstate water-related disputes and negotiations with its three neighboring states of Andhra Pradesh, Karnataka, and Kerala to provide a comparative perspective on the dynamics of such conflicts. Political, institutional, and agential dimensions of state action are both shaped and constrained by historical structures of political economy. Colonial and post-colonial patterns of development have produced local and regional political-economic conditions that have sparked the prolonged interstate conflicts over water resources that weigh on the states that share water resources and infrastructure in Southern India.

Tamil Nadu represents a significant case for understanding the central role of interstate relation in contemporary India. Tamil Nadu, a lower riparian state, is reliant on water-sharing arrangements and the shared management of water-related infrastructure with its three neighboring states. The state has also had a history of managing water-related shortages that have intensified in the post-colonial period and produced periods of severe crisis in recent years. The failed northeastern monsoon in 2016, for instance, brought the state to an unprecedented crisis with acute shortages of water for both agricultural and urban areas. The result was a series of failed crops, farmer suicides, and dried up reservoirs that supply water to the city of Chennai. This heightened both the governmental and public political focus on water that was due to be released to the state from Andhra Pradesh and Karnataka according to two interstate agreements with each of the states. However, given that Karnataka and Andhra Pradesh were also facing water resource constraints, both states were in different ways stalling on the release of waters. While Tamil Nadu was unsuccessful in getting Karnataka to abide by the final judgment of the Cauvery River Tribunal award produced by the decades-long mediation between the two states, an emergency trip by Tamil Nadu's chief minister to Andhra Pradesh was at least partially successful in gaining a promise of the release of some water from the Krishna. The contrasting dynamics of these two examples of interstate interaction in the context of a regional crisis point to the importance of developing a comparative analysis of interstate agreements.

The three interstate water-related agreements that link Tamil Nadu with Andhra Pradesh, Karnataka, and Kerala vary in significant ways in terms of the scope of the agreements, the kinds of issues under contention, the political dynamics of the agreement, and the outcome and implementation of each of the agreements. The first case, the Krishna Water Supply Project (also known as the Telugu Ganga Project) represents a negotiated bilateral agreement (spurred by central government intervention) that channels waters from the Krishna River to supply drinking water to Chennai. The agreement is largely seen as a successful case of interstate cooperation. The second case, the Cauvery waters dispute,

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represents one of India's longest and most politicized conflicts over water sharing between Tamil Nadu and Karnataka. The case has been characterized by prolonged adjudication both in the Supreme Court and the Cauvery Waters Tribunal and by intense politicization in both states that has included the outbreak of periods of ethnic violence. The case was officially concluded with a final judgment from the tribunal in 2007 after thirty-seven years of review, negotiations, and conflict. However, the implementation of the agreement remains a site of political contestation, particularly in distress years when both states faced severe water shortages.¹ The third case involves a prolonged dispute over Kerala's concerns over the safety of the Mullaperiyar dam that is located in Kerala but fully operated by Tamil Nadu. Since this case consisted of a conflict over water infrastructure rather than riparian rights, it unfolded through a long judicial process in the Supreme Court rather than through the tribunal institutional mechanisms. While the Supreme Court ultimately made a judgment in Tamil Nadu's favor and Tamil Nadu's operational control of the dam removes any practical obstacles to implementation of the judgment, the politicization of the issue continues to provide occasional moments of conflict related to water infrastructure-related matters between the two states.

This article provides an overview of the central historical patterns that shape the southern region of India and that structure political and economic relations between Tamil Nadu and its three neighboring states. In particular, the article analyzes the ways in which centralized structures of both the colonial state, the political economy of India's planned developmental state, and more recent policies of liberalization shape this set of interstate water negotiations and disputes. While historical processes have produced the structural conditions that have shaped such disputes, recent policies of liberalization have intensified conflicts over water. For instance, processes of urbanization and city-centric models of growth have increased pressures on water resources in India. However, political scientific scholarship that has focused on the politics of economic reforms and on the ways in which reforms have been shaped by India's federal structure has tended to treat states as discrete entities. Such scholarship has analyzed the impact of India's federal structure on reforms through a focus on relationships between states and the central government. While this has deepened our understanding of the significance of federalism in the post-liberalization period, such work has paid less attention to relationships between states.² The focus of such social scientific scholarship on particular sectors of the economy (such as telecom, electricity, and land/real estate) that are visibly associated with reform policies has compounded this analytical gap. Unlike such sectors, water is not contained within the territorial boundaries of states. A historical perspective on water disputes provides a means for unsettling the conventional analytical boundaries of political scientific conceptions of federalism in the post-liberalization period.

The Historical Roots of the Politics of Interstate Water Disputes and Agreements

Contemporary interstate conflicts over water in the post-liberalization period in Southern India have been shaped in large part by historically produced inequalities and political resentments. A key underlying foundation for such antagonisms can be traced back to the political economy of the colonial state.³ Contemporary political and economic relationships that are centered on the sharing of water and water-related infrastructure between Tamil Nadu, Andhra Pradesh, Karnataka, and Kerala are rooted in the geopolitical power of the British-ruled Madras presidency. As a central site of direct British colonial rule, the dominance of the Madras presidency allowed it to pursue its own interests in water resources with the neighboring princely states of Mysore, Hyderabad, Cochin, and Travancore. The independent princely states were heavily influenced by indirect British control in ways that placed them in a subservient position to the British colonial state. Such unequal relationships allowed the British-ruled Madras presidency to develop legal arrangements, irrigation infrastructure, and modes of agricultural development that placed it in an advantageous position over the princely states.

These underlying inequalities of both state power and economic development were incorporated into the new federal structure that would govern relations between the states. Purely formalistic or legalistic understandings of federalism that have overlooked the realm of interstate relationships thus miss the ways in which as Radha D'Souza has argued, "constitutional federalism is the outcome of colonial history."⁴ Interstate negotiations and disputes over water resources are shaped in significant ways by such colonial patterns of state power and economic development.⁵ Thus, in post-independence India, the formation of Tamil Nadu from the Madras presidency; and the formation of Karnataka, Andhra Pradesh, and Kerala primarily from the princely states of Mysore, Hyderabad, Cochin (Kochi), and Travancore reproduced colonial political and economic inequalities within independent India's federal structure. These colonial formations have shaped, though not always in deterministic or predictable ways, each of the three interstate relationships that the state of Tamil Nadu has been negotiating since the late 20th century.

While the roots of these political and economic tensions between the water-sharing states of the South can be located in colonial history, they were reworked in distinctive ways through the political dynamics that shaped the architecture of Indian federalism. A key element of these dynamics lies in the linguistic reorganization of the states that both drew on popular social movements and culminated in the States Reorganisation Act of 1956. This linguistic reorganization drew the boundaries of the southern states along linguistic lines. For instance, the state of Andhra Pradesh that was formed in response to a popular social movement for a Telugu-speaking state in 1953 was later expanded to incorporate Telugu-speaking districts of Madras state. Karnataka was formed out of Mysore state and the neighboring Kannada-speaking regions of the Madras presidency

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(as well as of the Bombay presidency and princely state of Hyderabad), and Kerala was formed out of the princely states of Cochin and Travancore along with a small Malayalam-speaking taluk (town) from Madras state. And finally, Tamil Nadu was formed out of the Tamil-speaking Madras presidency. The conjuncture between this linguistic reorganization and the underlying legacies of colonial relationships of power has meant that the legal, political relationships between the Madras presidency and the princely states both undergird Tamil Nadu's relationships with its neighboring states and complicate these relationships through an ethnicized linguistic cleavages that can become politicized in volatile ways in the context of disputes over water resources and infrastructure.

In the realm of state water policy, the historical formation of the state's institutional framework also inadvertently intensified the potential for water conflicts to arise between states. In the same historical moment as the linguistic reorganization of the states, the central government created two sites for the negotiation of interstate relationships over water—the 1956 Inter-state River Waters Act and the Rivers Board Act. However, as Radha D'Souza has argued, "The States never used the Rivers Boards Act 1956 to develop rivers through interstate planning and development because the Union controlled the purse strings and the planning process."⁶ The Indian state's institutional architecture was thus historically oriented toward the mediation and resolution of disputes once they had arisen rather than a policy framework that would promote models of planning and development that would build and strengthen interstate cooperation over water resources.

Contemporary scholarship on interstate water disputes in India has rightly called attention to the deep problems with the institutional mechanisms of adjudication.⁷ Such procedures bring local state governments together in an adversarial judicial framework that makes dispute resolution difficult, often hardens polarized positions, and results in lengthy judicial processes that often remain unresolved when tribunal awards are not attached to the adequate institutional capacity or political will necessary for implementation. As Padhiari and Ballabh have argued, "Most of the time, inter-state water disputes are accentuated by the lack of adequate water institutions, inadequate administrative capacity, lack of transparency, ambiguous jurisdictions, overlapping functions, fragmented institutional structures and lack of necessary infrastructure."⁸ Such problems have led to some centralized reforms. Thus, in 2002, amendments to the Inter-State Water Disputes Act sought to limit the time for the establishment and operation of the tribunal process and gave the tribunal award the same weight of a Supreme Court decision. However, the time frame still remains lengthy as the amendments allow for the government to take a year to establish a tribunal, three years (with a possible two-year extension) for the tribunal to give its decision, and a further year for its report.⁹ In addition to this potential seven-year period for the resolution of a dispute, R. Iyer, India's most well-known expert on interstate disputes has noted that the amendments still contain potential loopholes for central government action as there is no time limit

provided for publication of the tribunal decision in a gazette (and this publication is a legal requirement for the implementation of an award).¹⁰

A historical perspective on such institutional processes reveals the ways in which deeper structures of political economy undergird political disputes over water and overwhelm such institutional frameworks for the mediation of interstate disputes in South India. Such structures were produced within the colonial period and subsequently deepened in the post-independence period. Both the early decades of planned development and more recent policies of liberalization have exacerbated competition between the states over water resources in the region. The result is the production of a political economy of federalism that has weakened interstate and regional cooperation. In the early decades of independence, the state's planning process emphasized rapid agricultural development and set into place growing strains on water resources for irrigation that are the foundation for disputes such as the Cauvery River dispute between Tamil Nadu and Karnataka.¹¹ State policies in the post-liberalization have intensified rather than broken from this competitive model of state development. In the post-liberalization period, state competition for both private investment and central government resources that are designed to promote city-based models of development exacerbate the strain on water resources and the corresponding competition between states for these resources.¹² The fractured institutional dynamics that surround water-related disputes are thus, in significant ways, an effect of this deeper historically produced political economy of the state.

The Cauvery River Dispute: Institutional Failures and the Political Economy of Interstate Crises

By the beginning of the 20th century, the dispute over the sharing of the Cauvery River between Karnataka and Tamil Nadu had already become one of the most infamous examples of the inability of the Indian state to effectively mediate conflicts over water resources. As with many of India's water-sharing disputes, the initial roots of the conflict can be traced back to colonial legal and political agreements that set up a hierarchical political and developmental relationship between the Madras presidency and the princely state of Mysore. This resulted in a series of legal agreements and political negotiations designed to protect British colonial interests in agricultural development in the Madras presidency by placing limits on Mysore's ability to construct new irrigation projects. Mysore, in effect, needed the consent of the British colonial state in order to engage in new projects that could potentially affect water supplies to the Madras presidency.¹³ However, the unequal political-economic structures of agricultural development that emerged from this colonial history began to change rapidly in the early decades of independence. Irrigation along the Karnataka side of the Cauvery did not begin to

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accelerate until the 1960s.¹⁴ As S. Guhan has shown, the area of Cauvery irrigation in Karnataka increased from 4.42 lakhs acres in 1971 to 21.38 gross lakh acres in 1990 with a corresponding increase in water utilization requirements from 110.2 TMC ft to 322.8 TMC ft. Meanwhile, Tamil Nadu's increase in irrigation increased marginally from 25.30 gross lakh acres in 1971 to 25.80 in 1990 with a corresponding increase in water utilization requirement from 494.6 TMC ft in 1971 to 501.5 TMC ft in 1990.¹⁵ This shift meant that Tamil Nadu could no longer rely on a reliable release of water from the Cauvery River. Tamil Nadu's historical advantage was significantly reversed by its geographical location downstream from the river. The political-economic context that provided the need for a resharing of the river had thus been laid. Such changes took place within the contours of broader national patterns of state-led economic development. Policies of both planned development in the early decades of independence and liberalization since the 1990s have expanded the water needs in both states and have intensified the competitive dependence of both Karnataka and Tamil Nadu on the river.

In the early decades after independence, the Indian state embarked on an ambitious developmental agenda designed to engage in the accelerated expansion of both industrial and agricultural production. As Ashok Swain has argued, the harnessing of river waters through large dams and diversion canals was central to India's planned economy, with rapid increases in state investment (1998) in the early decades of independence.¹⁶ As he has noted, in "1948, 160 large water projects were being considered, investigated or executed, and 2 years later 29% of the first five year plan (1951-1955) budget was allocated for this purpose . . . Before the eighth plan, 600 billion rupees had been spent for various major and medium irrigation projects."¹⁷ Budgetary allocations provided important incentives for states to embark on strategies of agricultural growth that would expand the exploitation of water resources for irrigation purposes. This centralized framework of planning did not incorporate within it any focus on regional development that could potentially provide an institutional or economic foundation for cooperation between states. The Rivers Board Act, 1956, for instance, was never integrated within the water-intensive planning model of agricultural development. The result in the case of the Cauvery basin was that Karnataka engaged in the rapid development of irrigation systems including the construction of a series of dams that heavily reduced water available for Tamil Nadu.¹⁸ Thus, the developmental imbalance that had been produced in the colonial period was rapidly reversed in the early decades of independence. In the process, the resulting overexploitation of the Cauvery River set into motion the decades-long conflict between Karnataka and Tamil Nadu that remains unresolved despite the presence of a formal tribunal judgment. The distinctive nature of this conflict is not limited to the question of the sharing of river resources but, as R. Iyer has noted, with the complex task of "re-sharing a heavily used river, involving difficult adjustments."¹⁹ State-led policies of liberalization have continued to exacerbate these pressures on the Cauvery River as rapid urbanization and city-based models of economic development that undergird such policies have intensified demands for water resources for both urban drinking water supplies and industrial sources.

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In the case of the Cauvery River, the city of Bengaluru, which is often branded as the IT capital of the country and serves as one of the most visible symbols of India's economic growth, relies on water from the river as one of its key sources of drinking water supply.²⁰ Thus, while institutional, political, and media narratives focus on the intensity of the conflicts between the states of Karnataka and Tamil Nadu, a political-economic approach to this long-standing dispute points to the ways in which pressures on water resources caused by economic growth and urbanization have deepened the desperation over claims on the river water. The lens of interstate conflict often blurs the ways in which such water-related stress is as much about inequalities and conflicts within the states in question. As Saldhana and Rao have argued, within Karnataka drinking water resources from the Cauvery basin are channeled to Bengaluru at the expense of smaller urban and rural localities.²¹ As they note,

farmers from Mandya and Mysore in Karnataka, who have vehemently objected to the release of Cauvery waters to downstream Tamil Nadu during droughts, have begun targeting the supply of water to Bangalore [Bengaluru] in protest. Farming communities from Chamalapura in the Kabini watershed (a tributary of Cauvery in its upper reaches) have also demonstrated similar diversion of water away from farming and drinking water requirements by successfully blocking the proposal to set up a massive 4,000 megawatt (MW) coal fired thermal plant.²²

Such examples point to the underlying structural conditions of the Cauvery dispute that are as much about inequalities within states produced by national economic policies as they are about the subsequent intransigence of local state governments.²³

The political-economic dimensions of this dispute are evident in the ways in which developmental water-related infrastructure has increasingly become a kind of weapon that continues to exacerbate political tensions over the Cauvery River. Tamil Nadu has sought the central government's intervention to prevent Karnataka from building infrastructure that would impact the use of the river's resources. For example, the Tamil Nadu State government has protested Karnataka's proposal to build a dam and reservoir for the generation of hydroelectric power and for the provision of drinking water for Bengaluru.²⁴ Meanwhile, Tamil Nadu, in turn, has itself sought to build a large dam across the river.²⁵ Such water-related infrastructural projects embody both the planned developmental norms of the early decades of independent India that idealized large scale infrastructure such as dams and the post-liberalization state's urban-based model that has focused on the generation of energy and the provision of resources for the residents of its cities that serve as centers for investment and profitable sectors such as the IT industry. As Saldhana and Rao have noted, this competition over "megaprojects" transform the river "into a landscape for conquest and conflict over its waters, and the need to holistically address the river as a complex yet unitary and interconnected system is almost totally ignored."²⁶ Water-related infrastructure becomes a means for political mobilization within the contours of normative state visions of economic development and

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growth that intensify the very inequalities and forms of scarcity that deepen the distress for local communities in both states.

The nature of state-society relationships in the context of water-sharing resources in India is not a predetermined configuration. Srinivas Chokkakula has rightly argued that India has a strong record of interstate cooperation over water resources where in “comparison to the handful of interstate water disputes, there are more than 120 interstate agreements on cooperation for water sharing.”²⁷ As the comparative perspective of this article will illustrate, there have been significant variations in Tamil Nadu’s negotiations over water-related matters with its neighbors. The kind of water resharing required under stringent economic conditions and the political paralysis of the prolonged adjudication also makes the Cauvery dispute a unique situation.

The Telugu Ganga Waters/Krishna Water Supply Agreement: Interstate Cooperation and the Spaces of Bureaucratic Agency

If the Cauvery Rivers dispute has become an infamous example of institutional failure, the Telugu Ganga Waters agreement between Tamil Nadu and Andhra Pradesh is often heralded as a model of interstate cooperation.²⁸ The agreement centers around the Telugu Ganga Project (formally known as the Krishna Water Supply Project) that supplies water from the Krishna River for Chennai’s drinking water supply and for irrigation needs in Rayalaseema, a drought-prone area in Andhra Pradesh. The structural conditions and substantive focus of the agreement are fundamentally different from the Cauvery case. Historically, Andhra Pradesh was a part of the Madras presidency, and the state was first carved out of the Telugu-speaking areas of Madras state in 1953 (with Telugu-speaking areas of Hyderabad state joining the state as part of the states reorganization process in 1956). While there is a history of politicized linguistic distinctions between Tamil Nadu and Andhra Pradesh, the two states are not shaped by a colonial history of sharp disputes that have characterized the Tamil Nadu-Karnataka relationship. Bureaucratic officials in Chennai also argue that the two states share strong cultural and economic ties because of the links between members of the state bureaucracy in Andhra Pradesh and the city of Chennai.²⁹ Such ties were accentuated during the early years of negotiation by the shared background of two chief ministers, M. G. Ramachandran of Tamil Nadu and N. T. Rama Rao of Andhra Pradesh. Both chief ministers, representing independent regional parties, came to politics as highly successful stars in regional films. N. T. Rama Rao, in particular, also had film industry ties to the Tamil film industry. Such ties were a highly visible example of more broad-based ties between Andhra Pradesh and Chennai-based cultural and economic activity.

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A second crucial difference between the Cauvery dispute and the Telugu Ganga agreement lies in the nature of the cooperative water sharing that was institutionalized. The agreement, formally signed in 1983, represented cooperation over a set of shared interests. The Krishna River does not run through Tamil Nadu. Disputes over the sharing of the river water have played out through a separate Krishna Waters Tribunal that has mediated between the states of Andhra Pradesh, Karnataka, and Maharashtra.³⁰ The agreement also serves the mutual interests of both states as it allowed Andhra Pradesh to supply water for a drought-prone area in addition to providing drinking water for Chennai.

Finally, the political conditions of the central and state governments also played a significant role in jumpstarting the agreement. Thus, the agreement grew out of a Congress government-led initiative that gained the consent of the states of Maharashtra, Karnataka, and Andhra Pradesh to each provide 5 TMC of the 15 TMC in 1976. This would later become the basis for the bilateral agreement providing 15 TMC from a reservoir in Andhra Pradesh for Chennai's drinking water. The cooperation between the states was in effect a product of Congress's one-party rule in the early decades of independence as well as Indira Gandhi's questionable use of executive authority. The agreement was executed in the context of Indira Gandhi's suspension of democratic rights during the emergency period. More specifically, in the context of Tamil Nadu, Gandhi had dismissed the elected government on February 15, 1976, and instituted President's rule. The announcement of the agreement for Chennai's water supply was thus part of a visible political ritual that Gandhi was using to produce consent to her political actions. Thus, she visited Madras (Chennai) two weeks after instituting President's rule to announce the agreement. The publicity around the project in the context was, of course, a strategy designed to gain popular support within Tamil Nadu in the context of Gandhi's actions at both the national level and in Tamil Nadu. The promise of drinking water through a large infrastructure project for the city of Chennai, given Chennai's water scarcity challenges, thus served as an effective political strategy that Gandhi was able to use. One-party rule provided an important catalyst for the initiation of the Telugu Ganga Project. Seven years later, when the official agreement was signed between the chief ministers of Tamil Nadu and Andhra Pradesh had signed the agreement, Indira Gandhi in power, once again, could attend the public ceremony and hold up the project as an emblem of national unity.

The contrast between the interventionist and incapacitated nature of state action in the Telugu Ganga and Cauvery cases would seem to provide an argument in favor of centralized state action. However, while state action in the Telugu Ganga case did provide a critical factor that set up the foundation for the project, similar action did not unfold in the Cauvery River dispute during the same time frame. That is, the state did not intervene in a parallel way during Congress's one-party dominance in the 1970s or in the early 1980s prior to the Cauvery dispute accelerating to an irreconcilable conflict that was referred to the tribunal in 1990. The comparison thus points to the weight of the

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structural constraints on political calculations in the light of competing developmental needs over irrigation water in the Cauvery case.

The confluence of a set of shared central government and state interests in both Tamil Nadu and Karnataka would then seem to explain the apparent success of the Telugu Ganga Project. However, a careful analysis of the process and politics surrounding this infrastructure project reveal a messier process. Consider, for instance, the passage of time between the initial agreement in 1976 and the completion of the project. The signing of the bilateral agreement in 1983 itself took seven years and the public inauguration marking implementation of the project took place an additional thirteen years later. Since then, the supply of water to Chennai has been uneven. Institutional records of the Public Works department show a much more complex process that moved forward in the face of continued political obstacles in large part due to effective technical and bureaucratic agency at the local level. While the formal bilateral 1983 agreement has often been heralded as a model of interstate cooperation, the successful implementation was not an inevitable outcome. Numerous bureaucratic delays and political roadblocks could have potentially derailed the successful implementation of the agreement. Such implementation—which entailed the physical creation of the infrastructure needed for the water supply—was successful because of prolonged and persistent cooperative efforts at the local state level. A key foundation for this cooperation was the creation of micro-institutional mechanisms for communication and cooperation between state actors and technical experts from the two states. Thus, for instance, two committees, a liaison committee comprised of state officials and a committee of technical officers provided crucial means for communication that allowed for the management of the project in ways that circumvented the escalation of differences into wider political battles.

Consider, for instance, the question of shared interests between the two states. The interstate agreement is often heralded as a model because it served the interests of both states. However, this establishment of shared interests was formulated after the initial agreement that was ratified in 1977. The 1977 agreement did not contain any provisions for providing irrigation waters for Andhra Pradesh. In fact, Andhra Pradesh did not make this demand until the fourth meeting of the liaison committee in 1979. The demand was then reiterated through specific proposals to irrigate Andhra Pradesh's drought-prone area that were made in 1980. While this would become part of the final agreement, key local decisions produced a pragmatic solution to what could in a more polarized political context have escalated into an obstacle to the project. Patient negotiations within the committee structure that provided the space for technical solutions and funding compromises eventually produced a foundation for the actual implementation of the agreement.

The idealized narrative of the Telugu Ganga/Krishna Waters Supply project as a successful model of interstate cooperation thus masks a more entangled process of negotiation whose successful implementation was not predetermined. The decades since the first flow of water in 1996 have shown often limited and uneven successes when measured among the goal of providing 12 TMC of water for Chennai.³¹ Both technical and

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political factors have posed obstacles to the delivery of water. Officials from Chennai's water utility company (Metrowater) confirmed that the city was not gaining the water resources they had hoped for from the project.³² In the initial years, technical complications with the canal posed problems for delivery. In more recent years, pressures from farmers within Andhra Pradesh and Andhra Pradesh's construction of new infrastructure projects have impacted the supply of water to Chennai. As Ramadevi and Nikku have argued,

They [local farmers] do not object to the supply of water to Chennai, but insist that their fields be supplied water first. With the completion of branch canals, majors and minors, the demands for irrigation water will increase manifold. Even now, farmers next to the canals irrigate their lands by siphons or diesel pumps. The practice of pumping water has been legitimized by local political leaders. These practices too are bound to continue in future.³³

Such obstacles to the delivery of water to Chennai have been further complicated by the creation of the new state of Telangana in response to an ongoing popular movement in 2014. While the Srisailem reservoir used for the Telugu Ganga project remains within the newly bifurcated state of Andhra Pradesh, Telangana receives a portion water from the reservoir. Since Telangana is not an official signatory to either the 1977 or 1983 agreements, this has resulted in Andhra Pradesh in arguing that a share of the water for Chennai should come from Telangana.³⁴

Despite the serious disjunctures between the original promise of the supply of 12 TMC of water for Chennai and the limited delivery of water, there are significant ways in which this interstate agreement remains a relative case of success. Most significantly, the bureaucratic and technical work of producing various mechanisms of communication and institutional cooperation has meant that continued disputes over the agreement are managed through negotiations rather than time-consuming and polarized forms of adjudication that occur when bilateral state conflicts over water-related matters become intractable. In the context of the severe drought that placed Chennai's water supply in crisis in 2016, Tamil Nadu's chief minister made an unprecedented personal trip to Andhra Pradesh and was able to gain a public commitment from Andhra's chief minister that water would be released.³⁵ While the release of water was far short of both the formal agreement and of Chennai's water supply, the significance of such attempts at reconciliation between the states' interests should not be underestimated.

Taken together, the Cauvery dispute and the Telugu Ganga project exemplify the serious constraints that the state of Tamil Nadu must negotiate as a lower riparian state. While the historical legacies of colonialism gave the state legal advantages, the realities of water governance when it has come to the implementation of formal judgments and agreements have placed Tamil Nadu in a structurally disadvantaged position. The ineffectiveness of the central state in providing either an effective national institutional

framework for shared river governance or adequate machinery for the implementation of Supreme Court judgments or interstate agreements has meant that states have resorted to the aggressive pursuit of their own interests. Such dynamics are well illustrated in an interstate dispute between Tamil Nadu and its third neighbor, the state of Kerala.

The Mullaperiyar Dam: Conflict, Adjudication, and the Securitization of Water Infrastructure

On March 14, 2014, a team of engineers from Tamil Nadu's Public Works Department (PWD) attempted to begin work on repairs of the floor of the Mullaperiyar dam in Kerala. The engineers' work was halted after protests from Kerala's irrigation department despite the PWD's arguments that they had received permission from Kerala's forest department.³⁶ Kerala's objection was that the maintenance work amounted to an effort at "strengthening the dam" and was in violation of their efforts at stopping strengthening that could lead to the dam's height being raised in the context of a long-standing dispute between the two states that was under adjudication with the Supreme Court. The dispute was marked by a unique set of circumstances in which the dam was located in Kerala but owned and operated by Tamil Nadu. Kerala had been raising issues regarding the safety of the dam and had been trying to decommission the dam. However, Tamil Nadu was attempting to press for the dam to operate at a full water-level height. On May 14, 2014, the Supreme Court would deliver a verdict in favor of Tamil Nadu. However, the court decision has not provided either state or societal consent within Kerala. The result has been a legal resolution of this interstate dispute but a concurrent securitization of the infrastructure that has produced distrust and conflict between the two states.

The Kerala-Tamil Nadu dispute is shaped by both similarities and differences from the two other major cases of interstate water agreements and disputes that Tamil Nadu has had with its neighboring states. As with the Cauvery case, the contours of contemporary conflict have been shaped by the historical policies of the colonial state. However, in terms of the substance of the matter under consideration, the dam has stronger parallels with the Telugu Ganga Project as it pertains to an infrastructural project that must be managed between the two states. The issue at hand is not a dispute over water sharing but over the management of water infrastructure. Finally, underlying the overt focus on safety are political-economic interests in both states. In Tamil Nadu, an explicit reliance on water from the dam for both irrigation and drinking water in the context of systemic water insecurity heightened by Tamil Nadu's lack of control of river waters in post-colonial India has strengthened its resolve over gaining full control of the dam and its water height. Meanwhile, in Kerala, more nuanced interests in land and tourism have emerged in the context of liberalization and now intersect with the state's concerns over the safety of the dam.

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The Mullaperiyar dam was constructed by the British colonial state in the second half of the 19th century and was specifically designed to divert waters from the Periyar River to serve the irrigation needs of Madurai in the Madras presidency. In 1886, the colonial state entered in a 999-year lease agreement with the princely state of Travancore that allowed the British to lease the land needed, construct the dam, and maintain full ownership and control of its operation. This structure of ownership and operation was carried over into the post-colonial period with Tamil Nadu owning and operating the dam under the terms of the 999-year lease. As with the Cauvery case, the terms of this arrangement mirrored the relationship of power between the British state and the independent princely states in the colonial period. However, in contrast to the Cauvery case, there has been no political-economic conflict over the sharing of the Periyar River between the two states. In contrast to Kerala, Tamil Nadu has a heavy dependence on water provided by the dam both for irrigation needs as well as for a hydroelectric power generation that Tamil Nadu began in 1959.³⁷ Tamil Nadu's dependence on resources from the dam has only intensified with the growing challenge of water scarcity. For example, the city of Madurai, Tamil Nadu's third largest city, has begun planning to use water from this source to meet its growing drinking water needs.³⁸ The agreement between the two states was successfully renegotiated in 1970 with Tamil Nadu providing Kerala with fishing rights and Kerala agreeing to Tamil Nadu's right to construct facilities for power generation.³⁹ As with the case of the Andhra Pradesh agreement, the two states were able in this context to negotiate an agreement that merged their economic interests at the time.

The ensuing contours of the dispute between the two states were first sparked in 1979 when concerns about the safety of the dam began to take root in the public sphere in Kerala. Media reports in Kerala first began publicizing damage in the dam that was causing leakage.⁴⁰ The publicized damage, in conjunction with fears of the effects of an earthquake after a perilous dam failure caused by an earthquake in Gujarat in 1979,⁴¹ produced both societal and governmental concerns about the dam within Kerala. In response to a request from the government of Kerala, the Central Water Commission (CWC) inspected the dam and instructed the Tamil Nadu government to engage in a series of dam-strengthening measures. At this time, the CWC recommended that the water-level height of the dam be kept at 136 feet until the strengthening work had been completed.⁴² This question of the height of the water level would become one of the central sources of contention in the dispute. As with the Cauvery River dispute, years of adjudication, the politicization of the issue by both political parties and civil society organizations, and a complex set of political-economic factors transformed this issue of dam maintenance into a decades-long dispute between the two states. The intensification of the conflict occurred in the late 1990s after Tamil Nadu had completed the dam-strengthening measures and requested that the height of the dam be raised. The two states could not come to an agreement about raising the height of the water level and Tamil Nadu eventually filed a petition in the High Court in 1998. This would spark a chain of events comprised of legal proceedings, state governmental maneuvers, increasingly inflamed political rhetoric, and public and social protests in both states until a final

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Supreme Court verdict deemed the dam safe and allowed Tamil Nadu to raise the water to 142 feet with the possibility of further raising the level to its earlier 2006 judgment of 152 feet.

As with the Cauvery River dispute, existing scholarly work and media reports document in detail the history of the legal proceedings, the various political postures by political leaders, and protests by social groups. There are striking parallels between the two disputes in the underlying institutional contradictions that play out in visible ways in court proceedings and political conflicts in the public sphere. The judicial and political conflicts were unfolding in a context where policies of economic liberalization were accelerating at both the national and state levels in the 1990s. Such policies intensified the political and economic stakes in both states. As we have seen, in the case of Tamil Nadu, continued urbanization and increasing pressures on already scarce water resources in the context of both city needs for drinking water and industrial uses were intensified. The intersection of such factors with the pressures of being a lower riparian state with unresolved water issues with its other two neighbors increased the stakes of control of the dam for Tamil Nadu. In the context of the three sets of interstate relations between Tamil Nadu and its neighbors, the Mullaperiyar dam is the only case where Tamil Nadu has full ownership and control of the infrastructure in question. While Kerala's safety concerns were real, the question of the water height also came with a set of less visible but important economic factors. The area around the Mullaperiyar dam is a lucrative tourist area in an economy where a new embrace of globalization heightened the importance of sectors of the economy such as tourism. A report commissioned by Kerala found that there would be a negative impact on revenues from tourism in the area.⁴³ With the restraint on the height of the dam at 136 feet, numerous local businesses cropped up in the 1980s and 1990s; raising the height of the dam would mean a submergence of these businesses and a loss of the land. Policies of economic liberalization were not the cause of the dispute between the two states. However such policies have intensified the stakes over two of the scarcest and valuable commodities—land and water.

In contrast to the case of Karnataka, shared economic interests and dependencies between Tamil Nadu and Karnataka have produced more space for conflict resolution and for cooperation over water resources in other arenas. Shared economic ties between Tamil Nadu and Kerala provided the underpinning for Tamil Nadu's effective use of a boycott during the dispute over the Mullaperiyar dam in 2006. Kerala's reliance on low-cost agricultural products from Tamil Nadu had a serious impact on the state. Meanwhile, even during the prolonged dispute over the dam, the two states have cooperated over other water-sharing issues as they rely on each other for water sharing. For instance, they have cooperated in sharing water through the Parambikulam-Aliyar Project (PAP). Similar to the case of the Telugu Ganga case, this project has been managed by an institutional structure, a Joint River Water Regulation Board that meets regularly in ways that keep open lines of communication between the states.⁴⁴ Meanwhile, the Siruvani dam in Kerala has served as a source of drinking water for the major city of Coimbatore in Tamil Nadu. The two states have been able to engage in negotiations that build on such

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mutual dependencies. For instance, in the context of drought periods the states have struck deals to release water from PAP to Kerala and from the Siruvani dam for Coimbatore's drinking water supply needs.⁴⁵ Such spaces for interstate cooperation are increasingly critical as the conjunctural effects of economic development, climate change, and natural stresses will provide acute stresses on shared resources between states in South India.

Conclusion

Tamil Nadu's riparian position has placed it in a position where the management of water resources has enmeshed the state in ongoing interstate negotiations with all three of its neighbors. The historical legacies of both colonial rule and the impact of planned development in the early decades of independence shape current disputes in significant ways. Policies of liberalization have intensified pressures on water resources as water-intensive irrigation needs now compete with fast-paced urbanization and national policies that have encouraged states to accelerate power production through sources such as hydropower and aggressively pursue investment in new industries that in turn add new demands for water resources. A comparative historical analysis provides an important perspective that reveals the ways in which colonial and post-colonial historical political-economic formations shape conflicts and cooperation over water and deepens our understanding of the political economy of federalism in the post-liberalization period.

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- (29.) Based on interviews conducted in January 2017.
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