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The Rogun Dam project: evolution from conflict to cooperation between Tajikistan and Uzbekistan

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The Rogun Dam project, designed to be the world's tallest dam, represents a remarkable case of transboundary water conflict transformation in Central Asia. This study examines how relations between Tajikistan and Uzbekistan evolved from near-military confrontation to emerging cooperation over this contentious hydropower project. Initially conceived during the Soviet era as an internal infrastructure development, the dam became a flashpoint for regional tensions following the USSR's collapse in 1991, with downstream Uzbekistan strongly opposing its construction. Through qualitative case study methodology, we analyze how domestic political dynamics—particularly leadership change in Uzbekistan in 2016—fundamentally altered bilateral relations and regional hydropolitics. Our research reveals that while technical assessments by international organizations provided necessary factual foundations, the decisive factor in conflict transformation was the shift in political leadership that prioritized economic integration and mutual benefits over zero-sum competition. This study contributes to transboundary water management literature by demonstrating that internal political transformations can be as significant as international diplomatic frameworks in resolving seemingly intractable water disputes. The Rogun case offers valuable insights for addressing similar conflicts globally, highlighting how leadership-driven diplomatic shifts can transform water conflicts into opportunities for regional cooperation. Through qualitative case study methodology incorporating analysis of publicly available various sorts of documents, we traced the evolution of bilateral relations over three decades while examining the interplay between domestic political transitions and international water diplomacy frameworks. Semi-structured content analysis of documents was supplemented with contextual examination of regional economic and geopolitical factors influencing stakeholder positions.

KEYWORDS

transboundary water management, Rogun Dam, hydropolitics, conflict transformation, Tajikistan-Uzbekistan relations

1 Introduction

1.1 Background

The Rogun Dam Project on a Vakhsh River is a long-standing and ambitious hydropower initiative in Tajikistan. Its history is spanning over several decades ([The Rogun Dam Controversy, 2025; Rogun Dam, 2025](#)). This massive infrastructure project embodies both the promise and challenges of transboundary water management in the post-Soviet era. Initially conceived in 1959 during the Soviet period as an internal project, after the collapse of the Soviet Union in 1991, it became a unique case where a project transformed from being merely

one integral component of a centrally planned water and energy management system to a transboundary issue. What makes this case unique is that the project was initially conceived within a unified state with centralized political, economic, and social systems. This contrasts sharply with the current situation involving two independent neighboring countries with separate political and economic systems, each with their own distinct priorities and objectives.

The project's history reflects the complex political and economic transitions that have shaped Central Asia. The challenges facing the Rogun Dam project extend beyond technical and engineering considerations. The dam's construction has significant implications for regional water distribution, agricultural practices, and energy security. These factors have made the project a focal point for discussions about resource sharing, economic development, and interstate cooperation in Central Asia.

While the Rogun Dam project has been studied from various angles, a significant gap exists in understanding how domestic political transformations influence transboundary water disputes. Most existing research focuses primarily on international diplomacy and institutional frameworks, overlooking the critical role of internal political dynamics in shaping water management outcomes.

Recent scholarship has increasingly recognized the significance of domestic political transitions in transboundary water disputes. Hashimova (2021) documented the shift in Uzbekistan's approach to regional water projects following leadership change, while Muratbekova (2020) analyzed the operational implications of Rogun's first phase completion.

However, these studies have not systematically examined how leadership transitions translate into concrete policy changes in transboundary water governance. Our research fills this gap by providing the first comprehensive analysis of how Mirziyoyev's presidency fundamentally altered the course of the Rogun dispute, demonstrating that domestic political transformation can override longstanding interstate tensions more effectively than traditional diplomatic frameworks.

Previous studies have predominantly assumed that obstacles to effective transboundary water governance lie primarily in the realm of international diplomacy and interstate relations. Our research addresses this gap by examining how changes in domestic leadership and political priorities can fundamentally transform seemingly intractable water conflicts.

For example, a comprehensive analysis of transboundary river management conflicts has been provided by Hossen et al. (2023), whereas the framework appears overly focused on interstate relations as the primary determinant of success or failure. The authors identify factors such as "political will," "institutional arrangements," and "benefit-sharing" as key conflict resolution mechanisms, but largely overlook the complex interplay between domestic politics, local stakeholders, and ecological considerations that significantly influence transboundary water governance. Their classification of river basins as "successful" (53%), "unsuccessful" (35%), or "neutral" (12%) is based primarily on state-level cooperation metrics. It should be noted that power asymmetries within nations and the exclusion of non-state actors from decision-making processes could undermine even technically sound water-sharing agreements among basin countries.

The article by de Bruin et al. (2024) presents a robust methodology for projecting conflict risk in transboundary river basins through three different ambition scenarios. However, their analysis is limited

by an overemphasis on diplomatic and institutional factors as primary determinants of transboundary water conflict. While the authors identify key risk factors including mega-dam construction, institutional resilience, and socio-economic conditions, they largely frame water diplomacy as the primary pathway to addressing these challenges. This water diplomacy-centric approach overlooks the complex interplay of domestic political issues that often fall outside formal diplomatic channels. Furthermore, this study relies on basin-country units (BCUs) as the primary analytical framework. While this approach is methodologically sound for quantitative analysis, it focuses on a state-centric perspective that privileges national interests over the complex local realities.

While Hossen et al. (2023) and de Bruin et al. (2024) provide valuable frameworks for understanding transboundary water conflicts, the literature on this topic encompasses a much broader range of perspectives and approaches.

The classic work of Wolf (1998) challenged the "water wars" narrative by demonstrating that cooperative arrangements far outnumber conflicts in transboundary water management. His comprehensive database of historical water relations showed that countries tend to find innovative solutions rather than engage in violent conflict over shared water resources. Building on this foundation, Zeitoun and Warner (2006) introduced the concept of "hydro-hegemony," arguing that power asymmetries between riparian states fundamentally shape transboundary water interactions, often resulting in inequitable arrangements that nevertheless prevent open conflict. This perspective helps explain the initial Tajikistan-Uzbekistan power dynamics, with Uzbekistan initially wielding greater regional influence despite being downstream.

More recent scholarship has expanded beyond state-centric analyses. Mirumachi (2015) conceptualized transboundary water interactions as simultaneous processes of conflict and cooperation, rather than as binary outcomes. Her Transboundary Waters Interaction Nexus (TWINS) framework provides a nuanced approach to analyzing the evolution of the Rogun Dam dispute, recognizing that conflict and cooperation often coexist. Similarly, Earle et al. (2010) emphasized the importance of benefit-sharing approaches that move beyond zero-sum calculations of water allocation, which is particularly relevant to understanding the shift in relations after 2016.

The role of domestic politics in shaping transboundary water relations has received increasing attention. Allouche (2007) demonstrated how internal state formation processes and national identity narratives critically influence transboundary water policies. In Central Asia specifically, Menga (2018) examined how the construction of large dams serves as nation-building projects that consolidate state power internally while projecting it externally. This perspective helps explain Tajikistan's persistent commitment to the Rogun project despite international opposition.

Several studies have focused on the unique post-Soviet context of Central Asian water management (Baranovsky, 1994). Bernauer and Siegfried (2012) analyzed how the dissolution of Soviet resource-sharing arrangements created new transboundary challenges in the region. Wegerich (2008) documented how the transition from Soviet management disrupted previously integrated water and energy systems, creating seasonal conflicts between upstream hydropower needs and downstream irrigation demands. These studies provide important historical context for understanding the institutional vacuum in which the Rogun dispute evolved.

Unlike the aforementioned articles, we argue, differently from above articles, that domestic political conditions, power dynamics, and governance structures within basin countries exert significant influence on transboundary water management outcomes. By examining how internal political processes shape national water policies, negotiating positions, and implementation capacities, this study demonstrates that domestic politics are not merely peripheral but central to understanding the challenges and opportunities in transboundary river management.

To highlight what makes the Rogun Dam dispute distinctive, it is valuable to compare it with other prominent transboundary water conflicts that have followed different trajectories. Unlike many transboundary water disputes that emerged from colonial boundaries or long-standing historical tensions, the Rogun case represents a unique post-Soviet scenario where formerly integrated regions within a single state system suddenly became international actors with competing interests.

The Nile Basin conflict between Ethiopia and Egypt over the Grand Ethiopian Renaissance Dam (GERD) offers an instructive contrast. While both the GERD and Rogun involve upstream dam construction affecting downstream agricultural interests, the Nile dispute has remained more intractable despite extensive international mediation. Unlike in Central Asia, leadership changes in the Nile Basin countries have not fundamentally altered negotiating positions, suggesting that the internal political transformations observed in the Tajikistan-Uzbekistan case may be more influential than previously recognized in transboundary water literature (Cascão and Nicol, 2016; Tawfik, 2019).

Similarly, the longstanding disputes over the Mekong River Basin differ significantly from the Rogun case. The Mekong Committee, established in 1957, represents one of the oldest river basin organizations yet has struggled to prevent unilateral dam development by China and Laos. This contrasts with the relatively rapid transformation in Tajik-Uzbek relations following leadership change in Uzbekistan, highlighting how domestic political factors can sometimes override institutional frameworks in determining cooperation outcomes (Suhardiman et al., 2020).

The Rogun Dam case thus offers unique insights into how transboundary water disputes can evolve when they emerge from the dissolution of previously unified systems rather than from long-established interstate boundaries and demonstrates the potentially transformative role of domestic political change in resolving seemingly intractable water conflicts.

This study makes three distinct contributions to the field of transboundary water management. First, it provides empirical evidence of how leadership change can transform water conflicts more effectively than technical solutions alone. Second, it demonstrates the interconnection between domestic politics and international water relations in the post-Soviet context. Third, it offers practical insights for addressing similar conflicts in other regions where political transitions might create opportunities for cooperation.

By analyzing the evolution of the Rogun Dam dispute through the lens of domestic political transformation, this research challenges conventional approaches that prioritize international frameworks over internal political dynamics, offering a more nuanced understanding of how transboundary water conflicts can evolve toward cooperation.

Research progress observed over last years has increasingly emphasized the role of internal political dynamics in forming

transboundary water relations. Ghoreishi et al. (2024) demonstrate how the power-interests-identity (PIIN) nexus influences conflict transformation in the Helmand River basin, showing that state identity and internal political configurations significantly affect international water cooperation.

Similarly, Mamasani et al. (2024) reveal how relative deprivation within domestic political systems serves as a silent driver in hydropolitics, particularly evident in Afghanistan-Iran water diplomacy.

These studies confirm and reinforce our argument that domestic political transformations, rather than merely international frameworks, can be decisive in resolving transboundary water disputes.

The Rogun case provides additional empirical evidence for this emerging understanding, particularly regarding how leadership transitions at the top political level can fundamentally alter hydropolitical developments.

1.2 Research objectives

This study examines the evolution of the Rogun Dam dispute and its transformation from a source of regional tension to an example of gradually growing cooperation between countries involved: Tajikistan and Uzbekistan. The research aims to analyze how changing political climate, recognition of mutual interests, and leadership approaches have influenced the project's development and interstate relations. This investigation is guided by the following specific research questions:

1. How did the Rogun Dam dispute evolve from Soviet-era internal infrastructure development to post-Soviet transboundary conflict, and what were the key turning points in this transformation?
2. What specific domestic political, economic, and institutional factors contributed to the transition from conflict to cooperation between Tajikistan and Uzbekistan regarding the Rogun Dam project?
3. To what extent did leadership change in Uzbekistan in 2016 alter the trajectory of the dispute, and through what specific mechanisms did this change influence bilateral relations?
4. How do the lessons from this case contribute to theoretical understandings of transboundary water conflict resolution, particularly regarding the relative importance of domestic political dynamics versus international frameworks?

This research encompasses both periods of conflict and cooperation, demonstrating for the first time in a comprehensive manner how bilateral relations have transformed over time, with particular attention to the factors that influenced changes in interstate dynamics. The assessment illustrates how the resolution of the Rogun Dam dispute might serve as a model for addressing other transboundary water conflicts in Central Asia and beyond.

2 Methods

2.1 Research design

This study employs a qualitative case study approach to examine the evolution of the Rogun Dam dispute between Tajikistan and

Uzbekistan. We selected this methodology, which combines qualitative analysis with historical information about the system, for its ability to provide deep insights into complex political and social phenomena within their real-world context. This approach allows for detailed examination of how interstate relations have evolved over time and the various factors that have influenced this transformation.

The research tracks changes in bilateral relations and project development from the Soviet era through the present, with particular attention to the period following Uzbekistan's 2016 leadership transition. The comparative element examines differences in approaches to the project and bilateral relations across different political periods and leadership regimes.

2.2 Data collection

The study draws upon a diverse range of Information sources to ensure comprehensive coverage. These sources primarily include scientific reports regarding historical documents and official statements, and formal agreements between Tajikistan and Uzbekistan.

Academic literature and expert analyses provide theoretical context and independent assessments of the dispute's development. Reports from international organizations, particularly the World Bank and United Nations, provide technical assessments and neutral third-party perspectives on the project's development and its regional implications. These documents offer crucial insights into the project's technical, environmental, and social dimensions.

2.3 Analysis framework

The analytical framework encompasses three main components that together provide a comprehensive understanding of the dispute's evolution. First, presentation and analysis of project objectives, as seen by the two parties and consequently their timeline evolution allowing to identify turning points in the relationship between Tajikistan and Uzbekistan.

Second, stakeholder analysis examines the positions, interests, and interactions of key actors involved in the dispute. This includes not only the primary state actors, but also international organizations, regional powers, and domestic constituencies affected by the project.

Third, policy analysis investigates how approaches to cooperation have changed over time. This dimension focuses on the evolution of water management policies, diplomatic strategies, and cooperation frameworks, particularly following the 2016 leadership transition in Uzbekistan.

It must be noted that the case considered here is unique because it has its origins in one, already non-existent geo-political set-up and then it gradually developed into new political reality, completely different from previous one that has been achieved after collapse of the Soviet Union.

3 Project objectives

Controversies surrounding the Rogun Dam project began as early as its initial planning and construction phases in the Soviet era (1970s), but they intensified significantly after the collapse of the

Soviet Union in 1991. Initial Planning took place after the project was first proposed in 1959, with technical designs developed by 1965 under the Soviet Union's centralized planning system. The project was envisioned as part of the Vakhsh Cascade, a series of hydropower plants on the Vakhsh River, to meet the energy needs of the Soviet republics in Central Asia. The concerns about its technical feasibility and environmental impacts were already raised during the Soviet era.

3.1 Tajikistan position

Regarding Rogun Dam project we can distinguish between primary and secondary objectives, reflecting its multifaceted importance for Tajikistan and the region.

Primary Objectives are associated with:

- Energy Production aims to generate up to 3,600 MW of electricity, significantly increasing Tajikistan's hydropower capacity and addressing domestic energy shortages, especially during winter (World Bank, 2023; Muratbekova, 2020; Dawes, 2018). This would enable Tajikistan to become a major electricity exporter in Central Asia, contributing to regional energy security (Yakub, 2014).
- Water Resource Management allowing to regulate the flow of the Vakhsh River, ensuring consistent water availability for downstream irrigation and mitigating seasonal floods and droughts (Rizoyon, 2019). The dam is designed to regulate the flow of the Vakhsh River, which is part of the Amu Darya Basin. This regulation will help control seasonal variations in water availability, ensuring consistent water supply for downstream agricultural use and reducing the risks of floods and droughts.
- Economic Growth and Sovereignty, where the dam would serve as a foundation for Tajikistan's economic transformation by fostering industrialization, energy independence, and financial stability. Simultaneously the dam would strengthen national sovereignty by utilizing the country's vast hydropower resources (Garces de Los Fayos and Kereselidze, 2024; Menga and Mirumachi, 2016).

Secondary Objectives are associated with:

- Regional Cooperation that could enhance the regional water management by operating in tandem with other dams like Nurek, maintaining seasonal flow patterns and supporting downstream users during critical summer months.
- Possibility to support initiatives like CASA-1000 to export electricity to Afghanistan and Pakistan, fostering cross-border collaboration (Yakub, 2014).
- Climate Change Mitigation associated with reduced reliance on fossil fuels by providing a renewable energy source, helping to lower CO₂ emissions in Tajikistan and the region (General Information on Rogun HPP Project, 2025),
- Irrigation Support by enhancing water storage capacity to release water during droughts, thus improving agricultural productivity in Tajikistan and downstream countries.
- Symbolic Importance by acting as a unifying national project, symbolizing resilience and progress for Tajikistan after years of economic hardship (Garces de Los Fayos and Kereselidze, 2024).

3.2 Uzbekistan position

From Uzbekistan's perspective, as downstream country, the Rogun Dam project from the very beginning has been a source of significant concern and opposition due to its potential impacts on the country's water resources and economy. Confronted with the perspective of Rogun Dam project completion, the objectives or goals which Uzbekistan seeks to achieve are following:

Primary objectives:

- Ensure sufficient water for irrigation: Since Uzbekistan relies heavily on the Amu Darya River for irrigating its vast cotton fields, which are central to its economy, the country aims to prevent any reduction in water flow caused by the dam's reservoir filling or operational changes that could disrupt irrigation systems critical for agriculture (Blank, 2012; Putz, 2017; [Campaigners Call on Development Banks to Reject Controversial Rogun Mega Dam in Tajikistan, 2025](#)).
- Prevent seasonal water flow disruptions: Uzbekistan seeks to avoid altered seasonal water release patterns, as the Rogun Dam is designed primarily for hydropower, which may prioritize winter releases for electricity generation rather than summer flows needed for irrigation (Blank, 2012; Putz, 2017).
- Minimize environmental and social risks: the country is concerned about the environmental impacts of reduced water flow downstream, including risks to ecosystems like the Aral Sea, and potential flooding during reservoir management (Blank, 2012; [Campaigners Call on Development Banks to Reject Controversial Rogun Mega Dam in Tajikistan, 2025](#)).

Secondary objectives:

- Maintain Regional Stability, which may suffer as the result of one-sided project implementation. Uzbekistan has expressed fears that water disputes over projects like Rogun could escalate into broader regional conflicts. It seeks to ensure that transboundary water management is handled cooperatively to avoid tensions ([Rogun Dam Conflict Between Tajikistan and Uzbekistan, 2025](#); Putz, 2017).
- Protect Economic Interests by securing sufficient water supply for irrigation purposes.
- The cotton industry, a key part of Uzbekistan's economy and state control mechanisms, depends on consistent water availability. Any disruption could have significant economic consequences (Blank, 2012; Putz, 2017).
- Promote collaborative water governance:
- Uzbekistan advocates for upstream projects like Rogun to be subject to regional agreements and international conventions, ensuring that downstream countries' interests are considered during construction and operation (Putz, 2017; Hashimova, 2021).
- Oppose Tajikistan's Strategic Leverage by opposing Rogun. At this backdrop Uzbekistan aims to limit Tajikistan's ability to use control over water resources as leverage in regional power dynamics (Blank, 2012; Bologov, 2016).

Summarizing, it can be stated that from Tajikistan's perspective the Rogun Dam's primary goals focus on energy generation, water regulation, and economic development, while its secondary objectives include regional cooperation, climate benefits, improved irrigation, and symbolic national significance while Uzbekistan's objectives regarding the Rogun Dam focus on securing its water supply for agriculture, minimizing environmental risks, and ensuring regional stability through cooperative water governance.

4 Course of the dispute

4.1 Starting point

Before the collapse of Soviet Union in 1991, both Tajikistan and Uzbekistan, as Soviet republics, were parts of centrally managed USSR. The Soviet-era water management system, which had maintained a delicate balance between upstream and downstream states, broke down with the emergence of independent states. Under the previous system, Tajikistan would store water during winter months for release during summer irrigation seasons in Uzbekistan, receiving fossil fuel compensation in return. This arrangement, while not perfect, had provided a framework for resource sharing, as it was aimed to balance water use for irrigation in downstream states like Uzbekistan with energy needs in upstream states like Tajikistan.

Key aspects of this policy included three areas of cooperation:

Water-energy exchange system:

- Dams and Reservoirs: The Soviet Union constructed a network of dams (e.g., Nurek Dam) and reservoirs on major rivers like the Amu Darya and Syr Darya. These were designed to store water upstream in Tajikistan and Kyrgyzstan during winter and release it during summer for irrigation in downstream countries, including Uzbekistan.
- Energy Compensation: In return for water releases, downstream countries like Uzbekistan supplied upstream states with fossil fuels (coal, gas, or oil) to meet their energy needs during winter.

Interstate coordination:

- The Soviet government centrally managed this system to ensure equitable distribution of water and energy resources across the region. This coordination minimized disputes by integrating resource management into a single economic system.

National delimitation:

- The Soviet policy of national delimitation in the 1920s created distinct republics (e.g., Tajik SSR, Uzbek SSR) but left many borders ill-defined. This contributed to later tensions over water resources, as rivers like the Amu Darya flowed across multiple republics.

The dissolution of the Soviet Union in 1991 marked a fundamental shift in the political landscape, characterized by the emergence of national interests, the gradual creation of multi-player political scenes, the formation of independent public opinion groups, changes in dispute resolution culture, and the introduction of new mechanisms for the recruitment and development of a new political class and decision makers.

4.2 Evolution of the dispute (1991–2016)

The construction of the dam officially started in 1976, with plans to make Rogun the tallest embankment dam in the world, standing between 280 and 335 meters high (Rogun Hydropower Plant, 2016; Rogun Hydropower, 2025; Tajikistan: Rogun Hydropower Development Project, 2025). The dam was designed to produce 3,600 MW of electricity annually, making it a cornerstone of regional energy production.

Following the Soviet Union's dissolution in 1991, existing centralized system broke down, leading to disputes between Tajikistan and Uzbekistan over water and energy resources. Efforts like the 1992 Interstate Commission for Water Coordination (ICWC) sought to preserve Soviet-era agreements, but these lacked binding mechanisms for enforcement, leaving unresolved tensions.

The disputes over water resources intensified between Tajikistan (upstream) and Uzbekistan (downstream). Uzbekistan opposed the dam due to concerns about reduced water flows for irrigation, potential flooding during winter water releases, and seismic risks (The Rogun Dam Controversy, 2025; Rogun Dam Conflict Between Tajikistan and Uzbekistan, 2025). In 1991, construction stopped following the dissolution of the Soviet Union. Tajikistan, then already independent, lacked the resources and political stability to continue the project. In addition, a severe flood in 1993 destroyed much of the existing infrastructure, further delaying progress.

In the early phase of the post-Soviet era, the attempts were made to revival the project (1994) following signing the agreement between Tajikistan and Russia to complete the dam, but this was later annulled due to lack of implementation. In 2004, an agreement with Russian aluminum giant RUSAL aimed to complete the dam and build related infrastructure. However, disputes over ownership rights and technical specifications led to the cancellation of this partnership in 2007.

The construction of the Rogun Dam has been a major source of contention between upstream Tajikistan and downstream Uzbekistan (Eshchanov et al., 2011). This geopolitical conflict is part of wider international strains between Central Asian states due to the overuse and mismanagement of scarce water resources in the region. The controversies stem from a combination of technical, environmental, social, and geopolitical factors, with Uzbekistan viewing the dam as a threat to its agricultural system and Tajikistan considering it essential for energy security.

Tajikistan believes hydroelectric production is essential for its own energy security, as around 70% of the country regularly faces electricity shortages. Meanwhile, Uzbekistan contends that the dam would severely harm their agricultural system (Bologov, 2016). The tensions over the Rogun Dam have even resulted in disruptions to economic activity and trade relations between the two countries. Transport, for example, faced disruptions as railway connections and direct flights between Dushanbe and Tashkent were suspended due to the dispute (Expert Working Group on Climate-related Security Risks, 2025).

Basically, the nature of Tajikistan – Uzbekistan controversies must be considered in two dimensions: economic and political.

In economic terms, the construction of dam directly impacts one of Uzbekistan's most important economy sectors, namely cotton, which has been accounting for USD 1.3 billion or around 13% of total export value in 2019 (Resource Trade.Earth, 2019). This sector is also vital for employment – cotton picking alone employed around 12.9%

of the population aged 18–50 years in 2020 (International Labour Organization, 2025).

Cotton production is, however, a water-intensive industry requiring frequent irrigation in a region already experiencing increasing demands for water. Uzbekistan fears the completion of the dam will threaten this primary export and pose dangerous socio-economic and environmental risks pertaining to the ecological imbalance of water within the area.

In energy-poor Tajikistan, important social consequences also must be considered. During the cold Central Asian winter of 2007–2008, there was a significant loss of life and livestock due primarily to energy shortages (Libert et al., 2008). The electricity generated by the Rogun Dam would provide a secure and sustainable flow of cheap energy aiding this chronic energy shortage, thus assisting Tajikistan's economy – currently one of Central Asia's weakest (Bologov, 2016).

The economic trade-offs relate in considerable parts to the Rogun dam's operation, and specifically the season when (most of) the water is released. Whereas Tajikistan has clear incentives to release the water during winter months when its energy needs are greatest, Uzbekistan needs the water released during the hot summer months to enable irrigation.

In 2007, Tajikistan asked for the World Bank involvement to conduct an impact assessment. However, Uzbekistan accused Tajikistan of covertly continuing construction during this period, further straining relations (The Rogun Dam Controversy, 2025). Lack of progress in addressing concerns of Uzbekistan lead to escalation of the conflict in 2010s. Consequently, in 2010, Uzbekistan formally filed complaints with the World Bank over environmental and social issues related to the dam. This included concerns about water flow reductions affecting agriculture and displacement of communities (Campaigners Call on Development Banks to Reject Controversial Rogun Mega Dam in Tajikistan, 2025).

4.2.1 Escalation phase (2012)

Under President Islam Karimov, Uzbekistan maintained strong opposition to the Rogun Dam project. This opposition manifested through various diplomatic channels, with Uzbekistan consistently arguing that the dam would severely impact its agricultural sector by reducing water availability during critical growing seasons. The Uzbek government also raised concerns about the dam's safety, citing potential seismic risks in the region.

The most spectacular event of the dispute between Tajikistan and Uzbekistan is associated with the threat made in 2012 by Islam Karimov, the former president of Uzbekistan. The threat (Putz, 2017; Blank, 2012; Lillis, 2012; Hashimova, 2018) was voiced during a public statement, where Karimov expressed his concerns about the dam's potential to disrupt Uzbekistan's water supply, particularly for irrigation, which is critical for its agriculture-based economy. He warned that disputes over water resources in Central Asia could escalate into serious confrontations or even wars.

The key reasons for Karimov's threat include three major areas:

Water resource disputes:

- Uzbekistan heavily relies on the Amu Darya River for irrigation, particularly for its cotton industry, which is central to its economy. The Rogun Dam, located upstream in Tajikistan, was perceived as a threat to Uzbekistan's water supply, especially during critical growing seasons.

- Fear that the dam's reservoir filling and operational priorities (focused on hydropower generation) would disrupt seasonal water flows, leading to reduced water availability for downstream agriculture.

Geopolitical concerns:

- Karimov viewed the dam as a tool that could give Tajikistan strategic leverage over Uzbekistan by controlling water resources. This was seen as a direct challenge to Uzbekistan's influence in the region.

Environmental and social risks:

- Uzbekistan raised alarms about potential environmental consequences, including risks of flooding from the dam's operations and seismic vulnerabilities in the region. These concerns were used to justify opposition to the project.

In response to [Islam Karimov and Weil \(2012\)](#) threat of war over the construction of the Rogun Dam, Tajikistan adopted a resilient and diplomatic approach while continuing its commitment to the project. Tajikistan's response was based on four elements:

Continued Commitment to Rogun:

- Tajikistan viewed the Rogun Dam as essential for its energy independence, economic development, and national pride. Despite Karimov's warnings, Tajikistan pressed forward with the project, emphasizing its importance for addressing chronic energy shortages and ensuring water regulation for its own needs ([Carnegie Endowment for International Peace, 2025](#); [Casey, 2016](#)).
- The dam became a symbol of sovereignty and resilience for Tajikistan, with President Emomali Rahmon framing it as a national priority that could not be compromised ([Lemon, 2016](#)).

Diplomatic engagement:

- Tajikistan sought international support and legitimacy for the Rogun Dam by involving organizations like the World Bank to conduct environmental and social impact assessments. This move was aimed at countering Uzbekistan's claims of potential harm to downstream countries ([Carnegie Endowment for International Peace, 2025](#)).
- The Tajik government also issued public statements accusing Uzbekistan of using economic blockades and gas supply cuts as coercive measures against the dam's construction ([Carnegie Endowment for International Peace, 2025](#)).

Reliance on regional security alliances:

- Tajikistan leaned on its security partnership with Russia to deter any potential military escalation from Uzbekistan. The presence of Russia's 201st Division in Tajikistan acted as a strategic buffer against external threats, including those from Uzbekistan ([Matveeva, 2025](#)).

Strategic patience:

- Despite provocations, including border incidents and economic blockades, Tajikistan avoided escalating tensions into open

conflict. It maintained a focus on long-term goals rather than reacting aggressively to Karimov's threats ([Carnegie Endowment for International Peace, 2025](#); [Lemon, 2016](#)).

4.2.2 World Bank assessment

During this phase the international involvement increased significantly, particularly through the World Bank's role in assessing the project's feasibility and impacts. In response to Uzbekistan's concerns from 2007, the World Bank conducted comprehensive studies examining the dam's environmental, social, and economic implications. These assessments aimed to provide an objective evaluation of the project's potential impacts on downstream countries.

In response to Uzbekistan's request the World Bank provided comprehensive summary of the findings, including technical, economic, and environmental considerations, as well as recommendations for riparian dialogue and international standards compliance ([World Bank, 2014a, 2014b](#); [World Bank, 2025](#)).

Further, the results of Techno-Economic Assessment Study (TEAS) were provided containing evaluation of the technical feasibility and economic viability of different dam design options, including their ability to withstand seismic events and floods ([World Bank, 2014a](#)) and followed by Environmental and Social Impact Assessment (ESIA) containing the assessment of potential environmental and social impacts of the project, including resettlement needs and downstream water flow effects and final report including executive summaries of both TEAS and ESIA assessments ([Rogun Hydropower Project - Final Report of the Environmental and Social Panel of Experts, 2014](#)) ([Figure 1](#)).

The World Bank's studies and recommendations regarding the Rogun Dam significantly influenced the positions of Tajikistan and Uzbekistan, leading to notable shifts in their policies and relations, since the dispute became "facts-based."

4.3 Transition to cooperation (2016 – present)

The accession of Shavkat Mirziyoyev to Uzbekistan's presidency after the death of Islam Karimov in 2016 marked a turning point in bilateral relations.

After Karimov's death in 2016, his successor Shavkat Mirziyoyev adopted a policy of regional cooperation and reconciliation. Improving relations with neighbors, including Tajikistan, became a priority ([Putz, 2017](#); [Maranda-Bouchard, 2025](#); [Tolipov, 2016](#)). This new approach can be characterized by Softened Stance:

- Mirziyoyev's administration dropped the confrontational rhetoric and began engaging in dialogue with Tajikistan. For instance, Uzbek officials acknowledged the need to address both upstream and downstream interests under international conventions ([AzerNews, 2017](#)).
- Unlike Karimov's outright rejection of the project, Mirziyoyev expressed willingness to work within internationally accepted frameworks to manage shared water resources ([AzerNews, 2017](#)).
- Mirziyoyev's administration adopted a more cooperative tone, emphasizing regional dialogue and mutual respect in addressing water resource issues.
- Uzbekistan stopped publicly opposing the Rogun Dam and refrained from issuing strong statements against it. For instance,

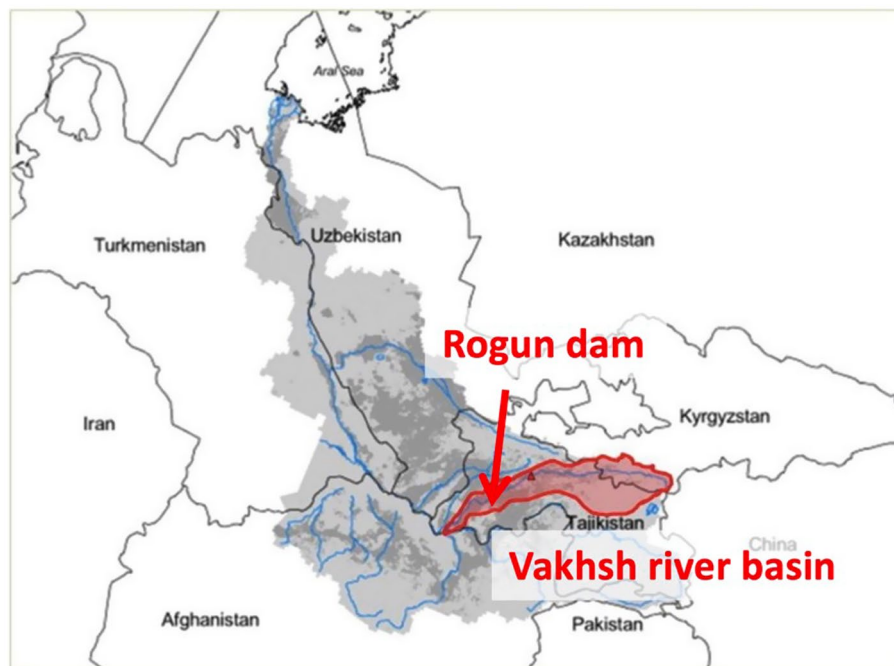


FIGURE 1

The figure shows schematically shaded in red Vakhsh River basin extending across Tajikistan. The location of the Rogun Dam is indicated by an arrow.

Tashkent remained silent when Tajikistan officially restarted construction in late 2016.

- In 2017, Uzbek Foreign Minister Abdulaziz Kamilov stated that while Uzbekistan still had concerns about the dam's potential impacts, it was willing to engage in discussions based on internationally accepted rules and guarantees. During a public Q&A session, Komilov stated that while Uzbekistan still had concerns about the dam, it would no longer oppose its construction outright. Instead, he emphasized that Tajikistan should ensure the project adheres to international conventions and considers the interests of downstream countries like Uzbekistan. Komilov's statement marked a departure from the hardline opposition under former President Islam Karimov. He acknowledged that friendly relations with neighbors, including Tajikistan, were an important foreign policy priority for Uzbekistan. This reflected the broader policy shift initiated by President Shavkat Mirziyoyev, who sought to improve regional cooperation and reduce tensions over transboundary water issues (Putz, 2017; Weiz, 2018; Dawes, 2018).

In a course of softened approach, the focus has been laid on Economic and Diplomatic Engagement and on Collaboration:

- In 2018, Mirziyoyev visited Tajikistan, marking a significant thaw in relations. The two countries signed agreements on trade and border cooperation, signaling a broader shift in Uzbekistan's approach to bilateral issues (Maranda-Bouchard, 2025; AzerNews, 2017).
- Uzbekistan also focused on diversifying its economy away from water-intensive cotton farming, reducing its dependency on Amu Darya flows.

- Instead of opposing Rogun outright, Uzbekistan began exploring alternative projects with Tajikistan, such as joint hydroelectric power plants on the Zarafshan River. These projects aim to address regional energy needs without exacerbating water disputes and involve the construction of two hydroelectric power plants: (i) Yavan Hydroelectric Power Plant: 140 MW capacity, expected to generate 800 million kWh annually, with an estimated cost of \$282 million and (ii) Fandaryo Hydroelectric Power Plant: 135 MW capacity, projected to produce 600 million kWh annually, with a forecast cost of \$270 million (Sultanov, 2021; Uzbekistan and Tajikistan Launched the Construction of Two Hydroelectric Power Plants on the Zarafshan River, 2025; Uzbekistan Launches Construction of 140MW Yavan Hydroelectric Plant, 2022).

Creation of joint hydroelectric power plants increases energy security through addressing electricity shortages in both countries by providing clean, renewable energy and significantly strengthen ties between Uzbekistan and Tajikistan through shared infrastructure projects. What is even more important, this project marks a turning point in Uzbekistan-Tajikistan relations, which have improved significantly under Uzbek President Shavkat Mirziyoyev. Previously tense relations over water resources have shifted toward collaboration, with Uzbekistan now actively supporting hydropower projects in Tajikistan. The Zarafshan River initiative is seen as a model for regional cooperation in Central Asia (Sultanov, 2021; Uzbekistan and Tajikistan Launched the Construction of Two Hydroelectric Power Plants on the Zarafshan River, 2025; Abakirov, 2024).

TABLE 1 Timeline of key events in Rogun Dam dispute.

Period	Key event	Uzbekistan position	Tajikistan position
1976–1991	Construction begins; collapse of Soviet Union	In accordance with integrated Soviet planning methodology	In accordance with integrated Soviet planning methodology
1991–2012	Construction stalled, rising tensions	Strong opposition	Strong, persistent commitment
2012–2016	Political escalation, military threats	Rogun Dam treated as existential threat	Dam as national priority
2016–2025	Personal change at presidential position in Uzbekistan	Conditional acceptance	Continued development

Following Table 1 provides compact chronological summary of key events associated with the course of Rogun Dam dispute:

4.4 Detailed analysis of the cooperation period (2016–2025)

Following Mirziyoyev's accession to the post of state president several events took place, as shown below:

2016–2017: Initial Diplomatic Signals: Within months of taking office, Mirziyoyev's administration signaled policy shifts through diplomatic channels. The December 2016 visit by Uzbek Foreign Minister Abdulaziz Kamilov to Dushanbe marked the first high-level diplomatic engagement in over a decade and is seen as a major thaw in previously frozen relation (Sobirzoda, 2021; Valiyev and Mamadaliyev, 2021). During this visit, Kamilov explicitly stated that Uzbekistan would no longer oppose Rogun provided international standards were met.

2018–2019: Institutional Cooperation: March 2018 presidential visit to Tajikistan (Horsman, 2020; Valiyev and Mamadaliyev, 2021), marking the culmination of a rapid rapprochement that began in late 2016, resulted in 27 bilateral agreements covering transport, energy, and water management. While the *Rogun Dam* issue remained complex, the leaders agreed to establish a joint commission of experts to study the project's impact, moving from confrontation to technical dialogue.

2020–2021: Joint Project Development: Zarafshan River (Groll and Stulina, 2022) project agreements signed in June 2021 represented the culmination of this cooperative turn. The Zarafshan River is a critical transboundary waterway, flowing from Tajikistan into Uzbekistan, and has been a source of both tension and, more recently, cooperation. The year 2021 was significant as it saw concrete agreements building on the broader Uzbekistan-Tajikistan rapprochement that began in 2016–2017. Unlike previous failed attempts at cooperation, these agreements included specific timelines, financing mechanisms, and dispute resolution procedures.

2022–Present: Consolidating Cooperation: Developments taking place over recent time period include Uzbekistan's participation in the Central Asian Power System coordination, which tacitly accepts Rogun's role in regional energy balancing (Cabar.asia, 2018). The absence of Uzbek objections to international financing for Rogun's completion represents a complete reversal from the Karimov era.

5 Current situation regarding Rogun Dam project

Recent developments in 2023–2024 have further validated the transformation in bilateral relations. Abakirov (2024) reports increased international investment interest in Tajikistan's hydropower sector, while the Asian Development Bank (2018) documented successful reconnection of Tajikistan to the Central Asian Power System.

These developments, occurring without significant Uzbek opposition, represent a significant contrast to the confrontational period under presidency of Karimov and underscore the durability of the policy shift we analyze.

As of January 2025, Uzbekistan's position regarding the Rogun Dam remains cautious, but significantly less confrontational compared to the era of former President Islam Karimov. Under President Shavkat Mirziyoyev, Uzbekistan has shifted from outright opposition to a more cooperative and pragmatic approach, focusing on regional dialogue and mutual benefits.

In a current situation there is no open opposition regarding dam construction and Uzbekistan no longer categorically opposes the construction of the Rogun Dam. This shift began in 2018, when Mirziyoyev visited Tajikistan and expressed willingness to negotiate on the project, provided it considers Uzbekistan's national interests and downstream water needs (Muratbekova, 2020).

Instead of confrontational tones, the emphasis is on regional cooperation, which means that Uzbekistan now prioritizes regional stability and collaboration over unilateral opposition. For instance, both countries have engaged in joint energy projects, such as building hydroelectric plants on the Zarafshan River, which reduce Uzbekistan's reliance on Rogun's potential electricity exports (Muratbekova, 2020). The countries have also resumed electricity trade under agreements facilitated by regional frameworks like the Central Asian Power System (CAPS) (Asian Development Bank, 2018).

Nevertheless, the concerns remain. While Uzbekistan has softened its stance, concerns about water flow disruptions during the filling of Rogun's reservoir persist. The dam's potential impact on agriculture and water availability in Uzbekistan remains a sensitive issue (Muratbekova, 2020). In addition, new element in Uzbekistan's policy is focus on renewable energy alternatives, namely Uzbekistan is actively investing in renewable energy projects, such as solar and wind power plants, to diversify its energy sources and reduce dependence on transboundary water resources like those regulated by the Rogun Dam (Ibragimov, 2024).

6 Concluding remarks

This unique case study example demonstrates how many various, in terms of their nature, time occurrence and intensity, factors finally contributed to avoid military confrontation and move towards constructive peace solution.

Until his death on September 2, 2016, Islam Karimov's rule in Uzbekistan (1991–2016) was marked by authoritarianism, repression, and centralized control, which included: strict political control and repression, human rights abuses and economic policies differing not much from Soviet-style, with limited economic reforms during his tenure. Foreign policy focused rather on defensive self-reliance

limiting Uzbekistan's engagement with foreign powers except when strategically necessary.

Under such circumstances, achieving any substantive progress in resolving controversies around the Rogun Dam was effectively doomed to failure.

The rule of Shavkat Mirziyoyev (2016–present) differs significantly from that of his predecessor, however some authoritarian traits persist.

Mirziyoyev introduced reforms aimed at greater openness and accountability. He implemented measures to improve government transparency, reduce corruption, and hold officials accountable. Further, he eliminated forced labor (notably in the cotton industry) and undertook significant economic liberalization, such as firing corrupt or ineffective bureaucrats. Regarding foreign policy Mirziyoyev shifted to a more cooperative regional policy, repairing ties with neighbors and fostering regional integration. He also strengthened Uzbekistan's engagement with international organizations and global markets.

The governance system of Tajikistan does not significantly differ from the system in Uzbekistan. While both countries share a legacy of authoritarianism and centralized governance, Uzbekistan under Mirziyoyev has shown more openness to reform and modernization compared to Tajikistan's entrenched autocratic system under President Rahmon.

Contribution of this study to transboundary water literature lies in demonstrating that the Rogun case represents a unique model of conflict transformation through domestic political change. Unlike recent analyses that focus primarily on institutional mechanisms (Hossen et al., 2023) or diplomatic frameworks (de Bruin et al., 2024), our research reveals how internal political transitions can rapidly transform water conflicts that had previously resisted international mediation efforts. The speed and durability of change following Mirziyoyev's accession to presidency challenges conventional assumptions about the primacy of international frameworks in resolving transboundary water disputes.

Conclusions drawn from the conflict resolution efforts surrounding the Rogun Dam project highlight the most promising approaches that can be applied to similar transboundary water disputes. These approaches can be expressed as follows:

1. Importance of international mediation and neutral, unbiased assessment

The involvement of the World Bank in conducting feasibility studies and environmental assessments helped provide an impartial, technical basis for discussions between Tajikistan and Uzbekistan. This reduced tensions by introducing a neutral third party to validate claims and address concerns (Kleingeld, 2016; Blank, 2012; Bologov, 2016).

The success of this approach can be seen in the Nile Basin, where the Eastern Nile Technical Regional Office (ENTRO) has facilitated technical discussions between Ethiopia, Sudan, and Egypt regarding the Grand Ethiopian Renaissance Dam (GERD), though political tensions persist [see Nile Basin Initiative (NBI), 2012; Wheeler et al., 2016].

Nevertheless, the effectiveness of international mediation depends heavily on all parties accepting the mediator's legitimacy and the willingness to act on technical findings. In the Rogun case, this approach proved successful because both countries eventually accepted the World Bank's neutral status, but such acceptance cannot be assumed in all transboundary disputes.

2. Regional cooperation as an alternative to conflict

Shifting focus from contentious projects like the Rogun Dam to mutually beneficial initiatives, such as joint hydroelectric projects on shared rivers, demonstrated the value of regional cooperation. For example, Uzbekistan and Tajikistan's agreement to build smaller hydroelectric plants on the Zarafshan River helped bypass direct conflict over Rogun while addressing energy deficit and satisfying Tajikistan's energy needs (Hashimova, 2021).

This approach mirrors successful joint initiatives in the Mekong Basin, where the Mekong River Commission [Mekong River Commission (MRC), 2018] has facilitated smaller collaborative projects despite ongoing tensions over major dams (Suhardiman et al., 2011) using "functional cooperation" or "step-by-step" diplomacy (Mitrany, 1966; Mirumachi, 2015; Hunt, 2019).

The advantage of alternative cooperation projects is that they allow states to build trust incrementally while avoiding direct confrontation over contentious issues. However, such approaches require significant time and may not address urgent water security needs. In Central Asia's case, the joint Zarafshan River projects succeeded because they offered immediate benefits to both countries without threatening existing water allocations.

3. Flexibility and leadership changes

Naturally caused leadership changes in Uzbekistan (from Islam Karimov to Shavkat Mirziyoyev) played a crucial role in de-escalating tensions. Mirziyoyev's more cooperative approach allowed for dialogue and reduced the likelihood of conflict, illustrating how shifts in leadership can create opportunities for compromise (Hashimova, 2021; Kucera, 2013).

4. Addressing underlying economic and security concerns

The Rogun Dam conflict was not just about water but also about economic dependencies (e.g., Uzbekistan's reliance on water for its cotton industry) and security fears (e.g., potential flooding). Recognizing and addressing these broader concerns through alternative solutions or guarantees is critical for resolving such disputes (Blank, 2012).

Similar comprehensive approaches have been attempted in the Indus Basin, where the Indus Waters Treaty (The World Bank, 1960; Biswas, 1992; Sinha, 2016), a landmark case in international water law and diplomacy, addresses both irrigation needs and flood control concerns of India and Pakistan.

The advantage of addressing broader concerns is that it creates multiple pathways for mutual benefit and reduces the likelihood of zero-sum competition. However, this approach can also complicate negotiations by expanding the scope of issues that must be resolved simultaneously.

In the Rogun case, acknowledging Uzbekistan's cotton industry concerns while addressing Tajikistan's energy security needs was crucial, but required years of confidence-building measures.

5. Avoiding zero-sum approaches

Tajikistan's insistence on the Rogun Dam as a centerpiece of its development strategy initially created a zero-sum dynamic with Uzbekistan. Lessons from this dispute emphasize the importance of exploring win-win solutions, such as shared energy projects or agreements on water flow management, to avoid escalating conflicts (Keene, 2013; Bologov, 2016).

6. Role of public discourse

Official rhetoric from both sides played a significant role in shaping public perceptions and escalating or de-escalating tensions. Constructive discourse that avoids inflammatory language can help create an environment conducive to negotiation (Kleingeld, 2016).

7. Long-term vision for regional stability

The conflict highlighted the interconnectedness of Central Asian countries' water and energy needs. A long-term vision that prioritizes regional stability and shared resources over unilateral projects is essential for sustainable development and peace (Blank, 2012).

The Rogun case thus offers a novel analytical framework for understanding post-Soviet transboundary water disputes, where shared institutional memory and sudden political transitions can create unique opportunities for cooperation that differ markedly from conflicts in other regions. This domestic politics-centered approach provides new insights for both scholars and practitioners dealing with similar disputes in transitional political contexts.

7 Practical implications and limitations

While these recommendations offer valuable guidance for transboundary water dispute resolution, their implementation faces several contextual limitations. The Rogun case's unique post-Soviet context, where both countries shared institutional memory of cooperative resource management, may not exist in other regions.

Additionally, the catalytic role of leadership change at the country presidency level cannot be engineered or predicted, making this factor difficult to replicate systematically. Furthermore, the relative power balance between Tajikistan and Uzbekistan differs significantly from cases like the Nile Basin, where downstream Egypt possesses greater economic and political leverage than upstream Ethiopia. These factors suggest that while the Rogun experience provides valuable lessons, successful application requires careful adaptation to local political, economic, and institutional reality.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

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KS was employed by the MP Industries.

The remaining author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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