

Gaps in the International Legal Framework for the Management of Transboundary Water Resources in the Syr Darya River Basin

Nursultan Mussinov

Executive Summary

The Syr Darya River is a lifeline for over 4.5 million hectares of irrigated agriculture in downstream Kazakhstan and Uzbekistan, while sustaining critical winter hydropower generation for upstream Kyrgyzstan and Tajikistan. Accelerating demographic growth and climate-induced hydrological variability have heightened interstate friction over water release schedules and seasonal energy exchanges.

Contrary to the assumption that regional water governance lacks regulatory rules entirely, allocation mechanisms do exist, as evidenced by the annual quotas approved by the Interstate Commission for Water Coordination (ICWC). However, existing regional agreements (notably the 1992 Almaty Agreement and the 1998 Syr Darya Agreement) suffer from textual ambiguities, irregular enforcement, and the absence of structured conflict-resolution pathways. Regional bodies such as the International Fund for Saving the Aral Sea (IFAS) and the ICWC perform vital technical coordination, but were never constitutionally designed with judicial, arbitral, or coercive enforcement mandates.

Rather than immediately demanding binding arbitration or court litigation, which may face sovereign resistance, regional policymakers should establish a tiered dispute architecture. This begins with institutionalized 'soft' mechanisms (joint fact-finding, regularized ministerial consultations, and mediation) to build mutual trust, with 'hard' mechanisms (binding arbitration) reserved strictly as a clause of last resort. Furthermore, clarifying treaty ambiguities and recognizing customary norms already embedded in basin practice will enhance regional compliance without destabilizing existing cooperation frameworks.

Keywords: *Transboundary water resources, Syr Darya, international water law, IFAS, ICWC, dispute resolution, soft vs. hard mechanisms, compliance.*

Introduction

The Syr Darya River is one of the largest transboundary rivers in Central Asia, flowing through the territories of the Republic of Kazakhstan, the Kyrgyz Republic, the Republic of Tajikistan, and the Republic of Uzbekistan. Its basin encompasses more than 4.5 million hectares of irrigated land

and links a complex network of water management infrastructure, where upstream states – Kyrgyzstan and Tajikistan – utilize water predominantly for hydropower generation, whereas downstream states, including Kazakhstan and Uzbekistan, depend on it for irrigation¹. The divergence between the economic priorities of these states, stemming from their geographical locations along the river course and their distinct political regimes, directly leads to disagreements in their approaches to water resource allocation. A more robust international legal framework could provide clearer standards and procedures for resolving regional water allocation issues – such as national water quotas, reservoir release regimes, and hydropower generation exchanges and buyouts – in a collaborative and mutually beneficial manner on the basis of an effective, universally applicable regional agreement on water resource utilization. However, despite the existence of universally recognized and codified principles of international law regarding the management of transboundary water resources, the absence of legal regulatory and enforcement mechanisms in Central Asian regional agreements undermines states' compliance with these principles and leads to ineffective water resource management in the long term. Furthermore, misaligned water – use interests, climate change, and demographic growth exacerbate regional water disputes, necessitating clearly defined international legal mechanisms.

The objective of this article is to identify missing mechanisms in order to improve the effectiveness of regional cooperation. To this end, the method of comparative legal analysis is employed, examining global conventions on transboundary water resources alongside existing regional agreements among the Syr Darya riparian states. In addition, the case of the primary interstate body for transboundary water cooperation, the International Fund for Saving the Aral Sea (IFAS) and its subsidiary body, the Interstate Commission for Water Coordination (ICWC), is examined to identify weaknesses in regional institutions that fail to serve as effective platforms for arbitration and mediation in resolving interstate disputes beyond their core technical coordination functions. As a result of this analysis, the article highlights the significant potential consequences of these deficiencies in the international legal framework for the region's water security and sustainable development, and puts forward a series of measures aimed at mitigating these risks.

Thus, the article argues that the international legal framework for transboundary water allocation in the Syr Darya River basin lacks effective dispute settlement procedures and consistent compliance safeguards. Existing regional agreements do establish rules for water allocation, as evidenced by the annual quotas and release protocols approved by the ICWC, yet their provisions are often applied inconsistently, and they lack effective mechanisms to enforce compliance or resolve emerging disputes through neutral mediation or structured procedures. This gap complicates states' implementation of their commitments under regional agreements and prolongs disputes over water allocation regimes, thereby deepening political discord. Overall, in the absence of an improved legal framework and an equitable regulatory system aligned with modern international conventions following the collapse of the Soviet Union, the legal foundation remains unadapted to the anticipated increase in pressure on the basin's water resources driven by climate

¹ Mar Campins Eritja, 'Transboundary Water Resources Management in Central Asia and Its Role in the Emergence of Conflicts Affecting Regional Stability' (2019) 7 Paix & Sec Int'l 13, 21

change and socio-economic growth. Addressing these vulnerabilities requires a balanced dispute resolution framework that incorporates both flexible 'soft' diplomatic mechanisms and credible 'hard' arbitral backstops.

International Legal Foundations of Transboundary Water Cooperation

Effective management of transboundary water resources is possible only in the presence of a robust legal architecture that ensures interstate coordination, prevents conflicts, and regulates water utilization based on the principles of international law. This article examines key legal mechanisms governing the use of the Syr Darya's water resources, including global UN conventions, regional agreements, and institutional structures. Primary focus is placed on analyzing legal instruments, identifying gaps, and discussing potential avenues for improving existing regulations.

The 1992 and 1997 UN Conventions serve as foundational reference instruments for the principles of international water law and recommended actions for riparian states to resolve conflicts and make joint decisions (through consultations, mediation, arbitration, and other compulsory legal and economic mechanisms). Regional water agreements reflect the extent to which international principles codified in UN Conventions and international practice are applied and integrated at the regional/basin level, providing a benchmark for evaluating the effectiveness of their implementation by Central Asian states. The interplay between regional and global treaties, combined with scholarly analysis, facilitates the identification of substantive and implementation gaps in regional international law, informing recommendations for its reinforcement.

The UN Convention on the Protection and Use of Transboundary Watercourses and International Lakes, adopted in Helsinki on March 17, 1992 (hereinafter the 1992 Convention, also referred to as the Water Convention or Helsinki Convention), provides the foundational framework for regulating and addressing issues concerning transboundary water utilization, quality, protection, and joint management.² First, Article 1 of this Convention defines “transboundary waters” as “*any surface or ground waters which mark, cross or are located on boundaries between two or more States*”. This agreement establishes principles of environmentally sound, rational, and equitable joint management of transboundary waters, as well as the obligation to prevent significant harm to riparian states (Arts. 2.1, 2.2, 3).³ As regional water law expert T. Sarsembekov explains, these principles constitute the “*cornerstone of the law of international watercourses*” and are grounded in close cooperation among riparian states, which serves as a key determinant in achieving “*optimal utilization and adequate protection of an international watercourse*” (Art. 8).⁴

Regarding international legal instruments on these matters, the Convention establishes a baseline by calling upon parties to enter into bilateral and multilateral agreements or adapt existing ones

² Sarsembekov T, Международные принципы сотрудничества в управлении трансграничными реками (International Principles of Cooperation in Transboundary River Management) (2004) стр. 32.

³ Convention on the Protection and Use of Transboundary Watercourses and International Lakes (adopted 17 March 1992, entered into force 6 October 1996) 1936 UNTS 269

⁴ Sarsembekov T, Международные принципы сотрудничества в управлении трансграничными реками (International Principles of Cooperation in Transboundary River Management) (2004) стр. 35.

that require harmonization with its principles (Art. 9). States are recommended to resolve disputes and conflicts through consultations and negotiations, and, where supplementary settlement is required, are obligated to resort to mediation and international arbitration (Art. 22). In effect, these procedures establish a graduated hierarchy: riparian states are encouraged first to exhaust soft diplomatic mechanisms, while having access to arbitration to resolve disagreements over water allocation regimes or water quality on the basis of equity and sovereign equality. In this regard, in their comparative analysis of transboundary water agreements, De Bruyne and Fischhendler (2013) assert that such conflict resolution mechanisms are consistently identified as essential elements of treaty design, enabling parties to manage future uncertainties, enhance treaty flexibility, and mitigate potential disputes arising from shifts in resource availability.⁵ At the same time, such mechanisms remain relatively rare in global practice despite their universally acknowledged importance.⁶ The necessity of incorporating such measures into any effective interstate transboundary water agreement is evident.

In short, the 1992 Convention is one of the pivotal international instruments in the field of transboundary water cooperation. It codifies the principles of equitable and reasonable utilization of water resources and the prevention of significant harm to neighboring states as customary international norms and accepted principles, while also establishing procedural obligations, including information exchange, prior consultations, and environmental impact assessments. Although the Syr Darya River falls within the scope of this Convention, its regional efficacy is constrained by incomplete ratification: only Kazakhstan and Uzbekistan are state parties, illustrating divergent legal approaches and national priorities between upstream and downstream states.

Furthermore, the UN Convention on the Law of the Non-Navigational Uses of International Watercourses, adopted in New York on May 21, 1997 (hereinafter the 1997 Convention), codified and expanded upon the principles of the 1992 Convention, further elaborating the principle of equitable and reasonable utilization “*with a view to attaining optimal and sustainable utilization thereof and benefits therefrom*” (Arts. 5.1, 6). This document introduces the obligation not to cause and to prevent significant harm to other states (Art. 7), mandates interstate cooperation, and recommends the establishment of joint mechanisms or commissions for cooperation (Arts. 8.1, 8.2). At the same time, the Convention affirms the equality and interdependence of all diverse uses of watercourses (such as irrigation, hydropower, and industry), calling for the application of the aforementioned principles and approaches in resolving disputes regarding their prioritization (Arts. 10.1, 10.2).⁷ Kazakhstan and Uzbekistan are likewise the only basin states party to this Convention.

In particular, it is important to emphasize the essential role performed by regional joint mechanisms for cooperation. Barbara Janusz-Pawletta highlights in her study on the legal

⁵ De Bruyne C and Fischhendler I, ‘Negotiating Conflict Resolution Mechanisms for Transboundary Water Treaties: A Transaction Cost Approach’ (2013) 23 Global Environmental Change 1841-1842

⁶ *ibid*, 1850.

⁷ Convention on the Law of the Non-Navigational Uses of International Watercourses (adopted 21 May 1997, entered into force 17 August 2014) 2999 UNTS 77

challenges of transboundary water governance in Central Asia that the establishment of joint mechanisms for managing water resources is widespread state practice, frequently regarded as a prerequisite for the effective implementation of the fundamental principles of water law. Moreover, more than 20% of all identified global transboundary water treaties contain arrangements for the establishment of such mechanisms.⁸ The 1997 Convention obligates states to cooperate and recommends establishing such bodies, underscoring their importance as a mechanism to mandate cooperation and ensure equitable regulation of relations.

A comparative analysis of both conventions demonstrates that, despite the presence of universally recognized principles and established international measures, their implementation across the Syr Darya basin remains limited, as regional agreements often remain unaligned with international norms and fail to provide sufficient legal and institutional mechanisms to eliminate interstate disputes.

Regional Legal Agreements and Their Alignment with International Norms

Following the collapse of the USSR, the imperative to regulate transboundary water utilization in Central Asia led to the signing of several regional agreements aimed at establishing coordination among states and averting potential crises in water resource access. The most significant among them was the Agreement between the Republic of Kazakhstan, the Republic of Kyrgyzstan, the Republic of Uzbekistan, the Republic of Tajikistan, and Turkmenistan on Cooperation in the Joint Management, Use, and Protection of Water Resources of Interstate Sources, signed in Almaty on February 18, 1992 (hereinafter the Almaty Agreement), which provided for coordinated water resource utilization, principles of water allocation among countries, and the creation of coordination mechanisms to resolve disputed matters. However, the lack of effective enforcement mechanisms prevented the agreement from averting a series of water disputes in the region.⁹

The agreement codified key principles of international water law, including rational joint water utilization (Art. 2), the prevention of harm (Art. 3), and dispute settlement by “*the heads of water management organizations of the republics, if necessary with the participation of a representative of an uninterested party*” (Art. 13). Furthermore, it made a seminal contribution to the regional water regulation framework by establishing the Interstate Commission for Water Coordination (ICWC) (Arts. 7-11), which serves as the primary body for annual interstate consultations on technical aspects of water distribution, such as seasonal quotas and release regimes. The agreement also recorded the parties’ agreement “*to develop a mechanism of economic and other liability for*

⁸ Janusz-Pawletta B, ‘Current Legal Challenges to Institutional Governance of Transboundary Water Resources in Central Asia and Joint Management Arrangements’ (2014) 73 Environmental Earth Sciences 887

⁹ Mar Campins Eritja, ‘Transboundary Water Resources Management in Central Asia and Its Role in the Emergence of Conflicts Affecting Regional Stability’ (2019) 7 Paix & Sec Int’l 13

violation of the established regime and limits of water use” by the end of 1992 (Art. 12) - a commitment whose implementation remained ultimately indeterminate.¹⁰

While critics frequently emphasize the divergence between Central Asian practice and global treaties, legal scholars provide an important counterargument that contextualizes this framework. Authors such as Ziganshina (2009) and Rahaman (2012) point out that existing regional treaties in the Aral Sea basin already incorporate fundamental substantive norms found in the 1992 UNECE and 1997 UN Water Conventions.^{11 12} The Almaty Agreement explicitly embraced sovereign equality, equitable utilization, the prevention of transboundary harm, and the obligation to cooperate through joint management bodies. Therefore, the core challenge in Central Asian water governance is not a complete absence of legal principles or allocation rules, but rather the translation of these shared principles into consistent operational execution and durable compliance mechanisms.

In 1998 in Bishkek, the parties signed a new Agreement between the Government of the Republic of Kazakhstan, the Government of the Kyrgyz Republic, and the Government of the Republic of Uzbekistan on the Use of Water and Energy Resources of the Syr Darya River Basin, which specified state obligations regarding reservoir operations, instituted water-use quotas, and attempted to build an institutional framework for water resource management. However, this agreement likewise suffers from several deficiencies, including the absence of mandatory enforcement mechanisms and weak integration with international norms. The implementation of its objectives remains partial and no longer reflects the original terms of the agreement, as parties resolve water-for-hydropower exchanges on a bilateral basis. In addition, Janusz-Pawletta characterizes this document as *“technical, but not of a general nature”* and assesses its contemporary implementation as nonexistent.¹³

An analysis of regional agreements indicates that although they establish the foundations for cooperation, their efficacy is undermined by the absence of legally binding mechanisms.

Institutional and Regulatory Mechanisms

A central role in transboundary water governance in the region is played by the International Fund for Saving the Aral Sea (IFAS), established in 1993 to coordinate Central Asian efforts to preserve water ecosystems. Its legal architecture includes regulatory documents on water resource utilization, platforms for interstate negotiations, and programs for basin ecosystem protection.

¹⁰ Janusz-Pawletta B, 'Current Legal Challenges to Institutional Governance of Transboundary Water Resources in Central Asia and Joint Management Arrangements' (2014) 73 Environmental Earth Sciences 890

¹¹ Dinara Ziganshina, 'International Water Law in Central Asia: Commitments, Compliance and Beyond' (2009) 20(2/3) Journal of Water Law 96

¹² Muhammad Mizanur Rahaman, 'Principles of Transboundary Water Resources Management and Water-related Agreements in Central Asia: An Analysis' (2012) 28 International Journal of Water Resources Development 475

¹³ *ibid*, 891.

However, when evaluating the performance of IFAS and its executive body, the ICWC, it is crucial to recognize their constitutional design: both organizations were established as platforms for high-level political dialogue and technical-administrative coordination, rather than judicial or arbitral tribunals. They were never endowed with legal mandates for dispute adjudication, binding arbitration, or coercive enforcement. The institutional challenge, therefore, is not that IFAS and the ICWC 'failed' to arbitrate disputes, but that the regional architecture lacks a dedicated body or mechanism equipped to handle legal disputes when technical consensus breaks down.

Furthermore, the organization is vulnerable to political fragmentation by the divergent interests of member states, as evidenced by Kyrgyzstan's formal decision to "freeze" its participation in the organization's activities in 2016.¹⁴

The lack of an independent dispute resolution mechanism to bridge political standoffs creates an institutional impasse, resulting in states occasionally acting unilaterally regarding water release, such as upstream reservoirs adjusting discharge volumes to prioritize domestic winter heating needs despite downstream agricultural requirements. As a result, political and bilateral negotiations often overshadow multilateral frameworks, complicating the uniform application of transboundary water management principles codified in the 1992 and 1997 Conventions.

According to Janusz-Pawletta (2014), decisions of the IFAS Heads of State are primarily political and declaratory in nature; while they carry high political weight, they lack direct legal enforceability.¹⁵ Similarly, the ICWC possesses the technical competence to calculate and approve seasonal limits, but lacks jurisdiction to sanction non-compliance or adjudicate formal interstate disputes over modified flow regimes.¹⁶ underscoring the need to equip regional institutions with appropriate mediation and conflict-management tools.¹⁷

Implementation Challenges and Existing Gaps in Legal Mechanisms

One of the principal problems in governing transboundary water use in the Syr Darya basin is not that agreements are legally non-binding, as treaties such as the 1992 Almaty Agreement and 1998 Syr Darya Agreement are formal, binding international treaties under international law, but rather that their provisions are in many cases ambiguous and their practical implementation is inconsistent. Many treaty commitments lack precise operational guidelines, standardized data-sharing protocols, or objective compliance benchmarks, enabling states to interpret their obligations selectively during periods of acute water scarcity or energy deficits.

Another critical issue is the absence of an institutionalized dispute resolution ladder. While soft diplomatic consultations are frequently conducted, they remain ad hoc and heavily politicized,

¹⁴ 'Kyrgyzstan Has "Frozen" Participation in Operation of the International Fund for Saving the Aral Sea' (*Silkroadnews*, 20 May 2016) <<https://silkroadnews.org/en/news/kyrgyzstan-has-frozen-participation-in-operation-of-the-international-fund-for-saving-the-aral-sea>> accessed 2 March 2025

¹⁵ Janusz-Pawletta B, 'Current Legal Challenges to Institutional Governance of Transboundary Water Resources in Central Asia and Joint Management Arrangements' (2014) 73 *Environmental Earth Sciences* 894

¹⁶ *ibid*, 894.

¹⁷ *ibid*, 895.

lacking structured procedures for impartial fact-finding or professional mediation. When bilateral talks stall, states have no intermediate legal mechanism to de-escalate tensions, and the lack of accepted arbitral procedures leaves disputes unresolved for extended periods. Establishing accessible soft mechanisms, supplemented by voluntary or compulsory arbitral options, could significantly enhance the resilience of regional cooperation.

Furthermore, the legal instruments regulating water use in the Syr Darya basin require modernization and harmonization with international standards. Differences between global UN conventions and regional agreements create legal uncertainty, impeding the implementation of unified approaches to water resource governance.

Recommendations for Enhancing Legal Regulation

To increase the effectiveness of international legal mechanisms governing water use in the Syr Darya basin, it is imperative to strengthen legally binding norms within regional agreements. Reinforcing enforcement mechanisms, including the introduction of sanctions for violations of water agreements, would elevate the level of compliance with legal obligations by regional states.

One of the key directions for reforming the legal regime must be the improvement of dispute resolution mechanisms. Legal scholarship on transboundary water governance underscores that sustainable basin management requires moving beyond declaratory commitments by constructing an institutionalized, graduated framework for compliance, facilitation, and dispute resolution. At the foundational level, procedural instruments like mandatory fact-finding and standardized data exchange mitigate information asymmetries, which, as Ronald Coase's bargaining framework suggests, enables riparians to resolve resource disputes autonomously while prioritizing stability and preventing the risk of politicization of water issues.^{18 19 20} Impartial fact-finding commissions, modeled after Article 33 of the 1997 UN Convention, wield critical soft power: while their empirical determinations are not legally binding, they neutralize claims of partiality in regional bodies and establish an objective basis for subsequent negotiations or conciliation.²¹ Where direct negotiations stall, mediation offers a cost-effective, sovereignty-preserving mechanism that introduces neutral third parties to facilitate mutually beneficial compromises and balance upstream

¹⁸ Tamar Meshel & Moin A Yahya, 'International Water Law and Fresh Water Dispute Resolution: A Cosean Perspective' (2021) 92 U Colo L Rev 509

¹⁹ Owen McIntyre, 'International Water Resources Law and the International Commission Draft Articles on Transboundary Aquifers: A Missed Opportunity for Cross-Fertilisation?' (2011) 13 Int'l Comm L Rev 237

²⁰ Laurence Boisson de Chazournes, Christina Leb and Mara Tignino, 'The UNECE Water Convention and Multilateral Environmental Agreements' in Attila Tanzi et al (eds), *The UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes: Its Contribution to International Water Cooperation* (Brill Nijhoff 2015) 60

²¹ Anvar Aslanov, 'Mediation and International Water Disputes: A Strong Marriage? An Analysis of Mediation in the Context of Methods of International Dispute Resolution' (2021) 28 Willamette J Int'l L & Disp Resol 121

infrastructure operations with downstream irrigation demands.²² Finally, while sovereign states often resist third-party binding adjudication due to perceived transaction costs and loss of autonomy, establishing arbitral tribunals or judicial recourse of last resort provides essential legal certainty.²³

Crucially, compliance procedures should not function as punitive instruments, but as facilitative regimes that incentivize treaty adherence, stabilize state expectations, and induce cooperative compromise before regional disputes reach an impasse.²⁴ Inclusion of these measures as foundational components of a dispute resolution clause within a potential new framework convention for regulation of transboundary water resources in the Syr Darya river basin in a tiered structure would offer the Central Asian states a versatile yet structured playbook to adeptly handle any potential disagreements over water and water-adjacent policy as they arise. Taking into account the considerable risk of water scarcity and demographic pressures in future decades in the region, such a mechanism would make states more capable of navigating these challenges with a robust international legal system.

Overall, harmonization of regional agreements with international legal norms by implementing more recommendations of the relevant UN Water conventions is evidently necessary. Bringing the provisions of the 1992 and 1998 regional agreements, potentially in the form of a new overarching regional water agreement, into alignment with the UN conventions would enable the creation of a more coherent and effective system of water regulation in the region.

Conclusion

The legal regulation of transboundary water use in the Syr Darya basin faces serious challenges related to the ambiguity of existing treaty provisions, inconsistent practical implementation, and the absence of structured conflict-resolution mechanisms. The regional agreements are legally binding, and annual allocation rules are established through the ICWC; however, the framework lacks durable operational compliance tools. Strengthening regional governance does not require dismantling existing institutions, but rather complementing technical bodies like IFAS and the ICWC with accessible soft mediation mechanisms, clarifying ambiguous legal clauses, and developing arbitral pathways to ensure long-term regional water and energy security.

²² Richard Kyle Paisley, 'International Watercourses, International Water Law and Central Asia' (2018) 4 Central Asian Journal of Water Research 1

²³ Balraj K. Sidhu, 'The Kishenganga Arbitration - Transboundary Water Resources Governance' (2013) 43 *Env'tl Pol'y & L* 147

²⁴ John G. Laylin & Rinaldo L. Bianchi, 'The Role of Adjudication in International River Disputes' (1959) 53 *Am J Int'l L* 30