

# The Troubled Water Resources of Central Asia Need Better Management

by Chiara Scissa

Eighty-two million people in Central Asia suffer from water insecurity<sup>1</sup> and climate change is worsening the problem. More than 500,000 people in almost 1,400 villages in Kazakhstan currently do not have access to drinking water, while many families have access to water for a few hours a day.<sup>2</sup> In Kyrgyzstan, climate change has already caused many people working in climate-sensitive sectors to migrate abroad in search of better economic opportunities. The country has recently recognised that the lack of drinking water and arable land, low crop productivity, and disasters are among the most common factors of

emigration.<sup>3</sup> Uzbekistan has stated that a third of its population lives in areas prone to disasters and environmental degradation and that 90 per cent of its agricultural land needs artificial irrigation. The country also admits that the difficult climate-environmental conditions and the repercussions on the economy are pushing people to migrate internally from the countryside to the cities.<sup>4</sup> Climate change and water scarcity are hence affecting migration movements within and across the region's borders, with the World Bank predicting that more than 5 million people in Central Asia could become internal climate migrants by 2050,

<sup>1</sup> Ariel Cohen, Wesley Alexander Hill, Wilder Alejandro Sánchez, "Water Insecurity in Central Asia: The Imperative for Regional and International Cooperation", in *Atlantic Council Reports*, February 2025, <https://www.atlanticcouncil.org/?p=823327>.

<sup>2</sup> Almaz Kumenov, "Kazakhstan Sets 2026 Target for Getting Drinking Water to the Regions", in *Eurasianet*, 24 April 2023, <https://eurasianet.org/node/91065>.

<sup>3</sup> Kyrgyzstan Government, *Concept of Migration Policy of the Kyrgyz Republic 2021–2030* [in Russian], 4 May 2021, <https://cbd.minjust.gov.kg/30-168/edition/29639/ru>.

<sup>4</sup> UN Office of the High Commissioner for Human Rights (OHCHR), *Inputs of the Republic of Uzbekistan to the Questionnaire by the UN Special Rapporteur on the Promotion and Protection of Human Rights in the Context of Climate Change*, 2022, <https://www.ohchr.org/en/node/103874>.

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while migration flows from Central Asia to Russia and the European Union are increasing.<sup>5</sup>

Yet, the water challenges that the region is facing are not only linked to the region's exposure to climate change. Rather, they also depend on economic variables as well as the regional mismanagement of the already scarce natural resources.<sup>6</sup> Instead of promoting regional cooperation and transboundary water governance, the response of Central Asian countries to these challenges has often been fragmented and guided by national interests. Lacking effective water diplomacy, States in this region have increasingly resorted to weapons to establish control over contested water resources. Central Asian countries need to leverage existing institutions and cooperation policies on water management to adequately respond to the multifaceted consequences of water scarcity.

### Water mismanagement in Central Asia

Water maladministration was prominent during the domination of the Soviet Union, when large-scale water projects were carried out in Central Asia to promote regional socio-economic development as well as for Moscow to

exercise political control over a highly strategic region from an economic and geopolitical point of view. The Soviet Union built huge hydraulic infrastructures, such as the Karakum Canal, as well as reservoirs, mega-dams and pump stations for drilling groundwater and diverting freshwater to primary and secondary canals.<sup>7</sup> This highly invasive irrigation system was largely constructed to satisfy the Soviet Union's high demand for cotton, which was seen as the most important mission for Central Asia. Overall, this project required the withdrawal of exorbitant amounts of water from the main rivers of Central Asia – Amu Darya and Syr Darya – altering the ecosystems of the rivers and the flow of the Aral Sea where these rivers end. Because of the overexploitation of the Amu Darya and Syr Darya rivers, the amount of water discharged in the Aral Sea decreased dramatically. Since 1960, what was once the fourth largest lake in the world has dried up by 92 per cent and its surface area has shrunk by 88 per cent.<sup>8</sup> The salinity level of the water has increased 20 times, making the lake uninhabitable for marine species. Local communities in Uzbekistan and Kazakhstan who lived near the lake have been forced to leave their homes due to the loss of livelihoods linked to environmental degradation and related socio-economic collapse.<sup>9</sup> Not only did

<sup>5</sup> World Bank, *Groundswell Part II: Internal Climate Migration in Eastern Europe and Central Asia*, September 2021, <https://openknowledge.worldbank.org/server/api/core/bitstreams/1dbab8f5-881d-517c-af10-5315e02f4d44/content>.

<sup>6</sup> Central Asian economies rely on climate-sensitive sectors – such as agriculture, hydropower and cotton production – which are water-intensive.

<sup>7</sup> Flora J. Roberts, "Rival Eco-Anxieties: Legacy of Soviet Water Management in the Syr Darya Basin", in *Security and Human Rights*, Vol. 32 (2022), p. 41-52, <https://doi.org/10.1163/18750230-bja10011>.

<sup>8</sup> NASA Earth Observatory: *World of Change: Shrinking Aral Sea*, <https://earthobservatory.nasa.gov/world-of-change/AralSea>.

<sup>9</sup> Chiara Scissa, "Migration in the Context of Climate and Environmental Changes in

the irrigation system developed by the Soviets turn out to cause huge water losses as well as desertification and soil salinisation, but the institutional framework established to guarantee centralised water management resulted in high inefficiency and lack of coordination, which severely failed to mitigate the damage caused to the Aral Sea.<sup>10</sup> In 1991, when the administrative boundaries of Central Asia became national boundaries, States were left with unequal water allocation and a high level of interdependence of water structures.<sup>11</sup> Conflicting national interests over shared water resources ignited political tensions in Central Asia.

Since the fall of the Soviet Union, clashes over the construction of dams along the Syr Darya and Amu Darya rivers have further exacerbated existing tensions among Central Asian countries, as upstream countries benefitted from hydropower sources at the expense of downstream countries, providing the former with greater power over water resources. To counteract imbalances in access and availability of shared water resources, in 1992 the five countries endorsed the Almaty Agreement, which recognised equal rights to the use of

water and the common responsibility to ensure the rational use of shared water resources.

In the following years, a significant number of regional initiatives have been adopted to manage transboundary water resources, yet most of them lack legal force, while regional water institutions have proven to be mostly inadequate.<sup>12</sup> Among others, the Interstate Commission for Water Coordination (ICWC), established in 1992 in the framework of the Almaty Agreement, has aimed to support the efficient use of, and protection of, water in the Aral Sea basin. Transboundary water organisations are also part of the ICWC, including the Amu Darya and Syr Darya basin water organisations that have enhanced the regional dialogue on water. Yet, cooperation under the ICWC has been insufficient and, so far, its ability to effectively carry out its task of coordinating the management of water resources has been limited.<sup>13</sup>

### Disputes over water

Already in the 2000s, water scarcity and its impact in fuelling dangerous tensions in Central Asia raised concern at the international level.<sup>14</sup>

Non-EU Prague Process States: Exploring Vulnerabilities, Policy Gaps and Available Protection Frameworks", in *Prague Process Analytical Reports*, 2024, p. 12, <https://www.pragueprocess.eu/en/resources/repository/33-reports/495>.

<sup>10</sup> Sarah L. O'Hara, "Lessons from the Past: Water Management in Central Asia", in *Water Policy*, Vol. 2, No. 4-5 (2000), p. 365-384, DOI 10.1016/S1366-7017(00)00010-6.

<sup>11</sup> Kai Wegerich, "Hydro-hegemony in the Amu Darya Basin", in *Water Policy*, Vol. 10, No. S2 (November 2008), p. 71-88, <https://doi.org/10.2166/wp.2008.208>.

<sup>12</sup> Emma Hakala, Katariina Mustasilta and Mohammed Hadi, "Water Diplomacy Analysis for Central Asia. Dynamics of Insecurity and Sources of Resilience", in *FIIA Reports*, No. 73 (April 2023), p. 52, <https://fii.fi/?p=115264>.

<sup>13</sup> ICWC portal: *Water Yearbook: Central Asia and around the Globe*, [http://www.cawater-info.net/yearbook/index\\_e.htm](http://www.cawater-info.net/yearbook/index_e.htm).

<sup>14</sup> International Crisis Group, "Central Asia: Water and Conflict", in *ICG Asia Reports*, No. 34 (30 May 2002), <https://reliefweb.int/node/102301>; UN Office for the Coordination of Humanitarian Affairs (OCHA), *Uzbekistan – Drought. OCHA Situation Reports*, No. 1 (11

In a 2011 dedicated report, the US Senate argued that “the national security implications of this looming water shortage – directly caused or aggravated by agriculture demands, hydroelectric power generation, and climate instability – will be felt all over the world”.<sup>15</sup> The unequal distribution of river basins, more present in some countries than in others, has previously led to clashes on a regular basis. Among others, in 2014 violent clashes broke out between Kyrgyzstan and Tajikistan over the main cross-border water supply point, while in 2021 disputes over water control between these two countries degenerated in the worst violence in decades and escalated into a conflict.<sup>16</sup> In 2022, broader violence erupted during which over 100 people were killed and civilian infrastructure was deliberately destroyed.<sup>17</sup> Military tensions also arose between Kyrgyzstan and Uzbekistan in 2016 due to land and water disputes.

### *The need for stronger regional governance*

Although Central Asian countries face similar challenges related to

worsening climate change and water scarcity, regional cooperation on the matter remains too weak for at least two reasons. First, since their independence, the five countries have focused more on pursuing national interests and establishing their own sovereignty instead of promoting regional integration. Second, regional arrangements for water management are highly ineffective.

The region needs to engage in effective water diplomacy and cooperation policies to adequately manage and share transboundary water resources and to respond to the political, economic and social consequences of water scarcity. One area where these countries can intervene is the reinforcement of regional water management agencies, such as the ICWC. Central Asian countries may consider expanding the ICWC’s mandate to include energy in its scope, which is absent from all regional bodies on water, and strengthen the representation of the environmental sector for it to serve as a platform of water diplomacy.

Another area where Central Asian countries may engage in order to enhance water diplomacy is through border demarcation agreements, which may play a relevant role in easing the political tensions over contested water resources. This has been the case for the border demarcation agreement reached in December 2024 between Kyrgyzstan and Tajikistan.<sup>18</sup> This agreement paved

August 2000), <https://reliefweb.int/node/67708>.

<sup>15</sup> US Senate Committee on Foreign Relations, *Avoiding Water Wars: Water Scarcity and Central Asia’s Growing Importance for Stability in Afghanistan and Pakistan*, 22 February 2011, p. 1, <https://www.govinfo.gov/app/details/CPRT-112SPRT64141>.

<sup>16</sup> Chiara Scissa and Susan F. Martin, *Migration in the Context of Climate and Environmental Changes within Central Asia and to the EU and Russian Federation*, Geneva, International Organization for Migration (IOM), 2024, p. 53-54, <https://publications.iom.int/node/7241>.

<sup>17</sup> “Death Toll Rises to 81 in Kyrgyzstan-Tajikistan Border Clashes”, in *Al Jazeera*, 18 September 2022, <https://aje.io/d9y32y>.

<sup>18</sup> Phunchok Stobdan, “A Breakthrough in Central Asia: The Khujand Declaration”, in *DPG Policy Briefs*, Vol. X, No. 14 (16 April 2025), <https://www.delhipolicygroup.org/publication/policy-briefs/a-breakthrough-in-central-asia->



the way for the first trilateral meeting among the Presidents of Kyrgyzstan, Tajikistan and Uzbekistan, who have signed agreements covering, inter alia, issues related to ensuring access to water management and energy facilities. These dialogues culminated in the border agreement signed on 31 March 2025 among Tajikistan, Kyrgyzstan and Uzbekistan, which represents an unprecedented achievement for Central Asian diplomacy.<sup>19</sup> This agreement delineates the trijunction point of their respective borders and aims to end border disputes among these three countries, which have been undermining the region's stability since the dissolution of the Soviet Union. Following this historic momentum, border checkpoints in the Leilek and Batken districts between Kyrgyzstan and Tajikistan are about to reopen. In addition, the three Presidents endorsed a Declaration of Eternal Friendship (Khujand Declaration), which underscores the importance of Central Asian diplomacy and the need for regional economic integration and enhanced security. By effectively upholding their commitments to political and economic collaboration, countries in the region may leverage the tripartite agreement and the related Declaration to support regional cooperation over water.

Finally, Central Asian countries could leverage existing partnerships with the European Union on water resources.

[the-khujand-declaration.html](#).

<sup>19</sup> Dana Omirgazy, "Central Asian Leaders Sign Landmark Treaty and Khujand Declaration to Strengthen Regional Cooperation", in *The Astana Times*, 1 April 2025, <https://astanatimes.com/?p=98973>.

The EU is involved in the fight against water scarcity in the region through several projects, such as the Central Asia Water and Energy Program, namely a partnership among the World Bank, the EU, Switzerland and the United Kingdom, whose aim is to promote regional cooperation on water and energy management by facilitating policy dialogue among relevant regional institutions.<sup>20</sup> In addition, in November 2022, the EU launched a Team Europe Initiative on Water, Energy, and Climate, which aims to help Central Asian countries strengthen the enabling environment to promote water and energy security. With a contribution of 200 million euros, the Team Europe Initiative strives for increasing investment in a regionally integrated green and energy transition. It aims to support the development of transboundary water governance by contributing to water infrastructure in the field of water supply, sanitation and water management, as well as hydropower.

All in all, Central Asia urgently needs to reinforce regional cooperation and diplomacy to face persisting water-related challenges, which will most likely be exacerbated by worsening climate change and which already impact on migration and livelihoods across the region. The resolution of rooted border tensions may facilitate the development of regional partnerships, but it needs at least to be coupled with stronger commitment to making supranational institutions and

<sup>20</sup> World Bank website: *Central Asia Water & Energy Program*, <https://www.worldbank.org/en/region/eca/brief/cawep>.

arrangements more effective. In doing so, partnerships with other relevant actors, such as the EU, could lay ground for stronger commitments in the field of water preservation and supply.

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