

# POLICY BRIEF

## Rethinking Water in Central Asia: the costs of inaction and benefits of water cooperation

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International cooperation over water resources that are shared between several countries offers significant opportunities. Cooperation helps minimize the impacts that water use in one country may have on other riparian countries, and allows for a maximization of overall benefits for all basin countries. Despite a general commitment to cooperation, Central Asia is witnessing intense competition over water resources. Water policies are often driven by uncoordinated national strategies. A combination of low water efficiency, strong interdependencies, and competing national priorities has caused disagreements, and contributed to political and diplomatic disputes between Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. Insufficient water cooperation entails significant costs and major risks for the future development of the region. Even if only parts of these costs are taken into account, they amount to more than 4.5 billion US\$ per year.

*By raising awareness of the costs of inaction, and by setting out a variety of pathways towards eliminating them in the future, this policy brief seeks to support the political rationale for improving water cooperation.*

### The Challenge

Until the beginning of the 1990s, Central Asian countries were part of the Soviet Union, which constructed major dams and reservoirs in the upstream countries, Kyrgyzstan and Tajikistan. Water was stored in these reservoirs primarily for irrigating both cotton and wheat in downstream Uzbekistan, Kazakhstan and Turkmenistan, whereas upstream energy needs were satisfied through central planning that drew on downstream fossil fuel deposits. Since 1991, however, the operation regime of upstream dams has shifted towards prioritizing energy over irrigation needs. As energy prices for upstream countries rose, water releases from their reservoirs were increasingly driven by upstream winter electricity rather than downstream summer irrigation needs. This has resulted in tensions between Central Asian states and limited regional cooperation beyond the water sector. As a consequence, insufficient water cooperation hampers economic development in all countries and has the potential to undermine national and regional stability.

### Explaining limited water cooperation

Following the dissolution of the Soviet Union, the region's centrally-driven integrated resource management system fell apart. Attempts to replace it with a more explicit trade system of water against energy proved only moderately successful, as agreements were not systematically implemented. Non-implementation was not necessarily malevolent, but caused, to a certain extent, by a lack of capacity and an inability to ensure inter-sectoral coherence. However, lingering perceptions of intentionality and lack of effort in implementation compounded mutual distrust and fuelled mounting costs resulting from insufficient regional cooperation.

**The causes of limited coordination and cooperation are embedded in interlinked national and regional water governance challenges**

The 'failure' of regional water management institutions that many observers detect in this development can partly be explained by the unrealistic benchmark of an integrated system for water resource management. The regional organizations set up to coordinate and manage regional water resources have not been designed to live up to these expectations. In a context where governments were embarking on distinctive state- and nation-building projects, these institutions were created to prevent ruinous disintegration rather than to foster regional integration – and they were successful in avoiding the disastrous conflict that some observers warned about.

In order to adapt to these new realities of national resource management, countries unilaterally invested into additional infrastructure in order to increase self-sufficiency their water, agriculture and energy sectors. The political and financial capital invested into national strategies to reach self-sufficiency makes a return to the integrated resource management of the past unlikely. Yet in reducing immediate vulnerabilities to water scarcity and flood events, these investments have also reduced the risk of tensions between riparians. As a consequence, Central Asian governments can now embrace water cooperation with greater confidence to build pragmatic and mutually beneficial solutions to shared water-related challenges.

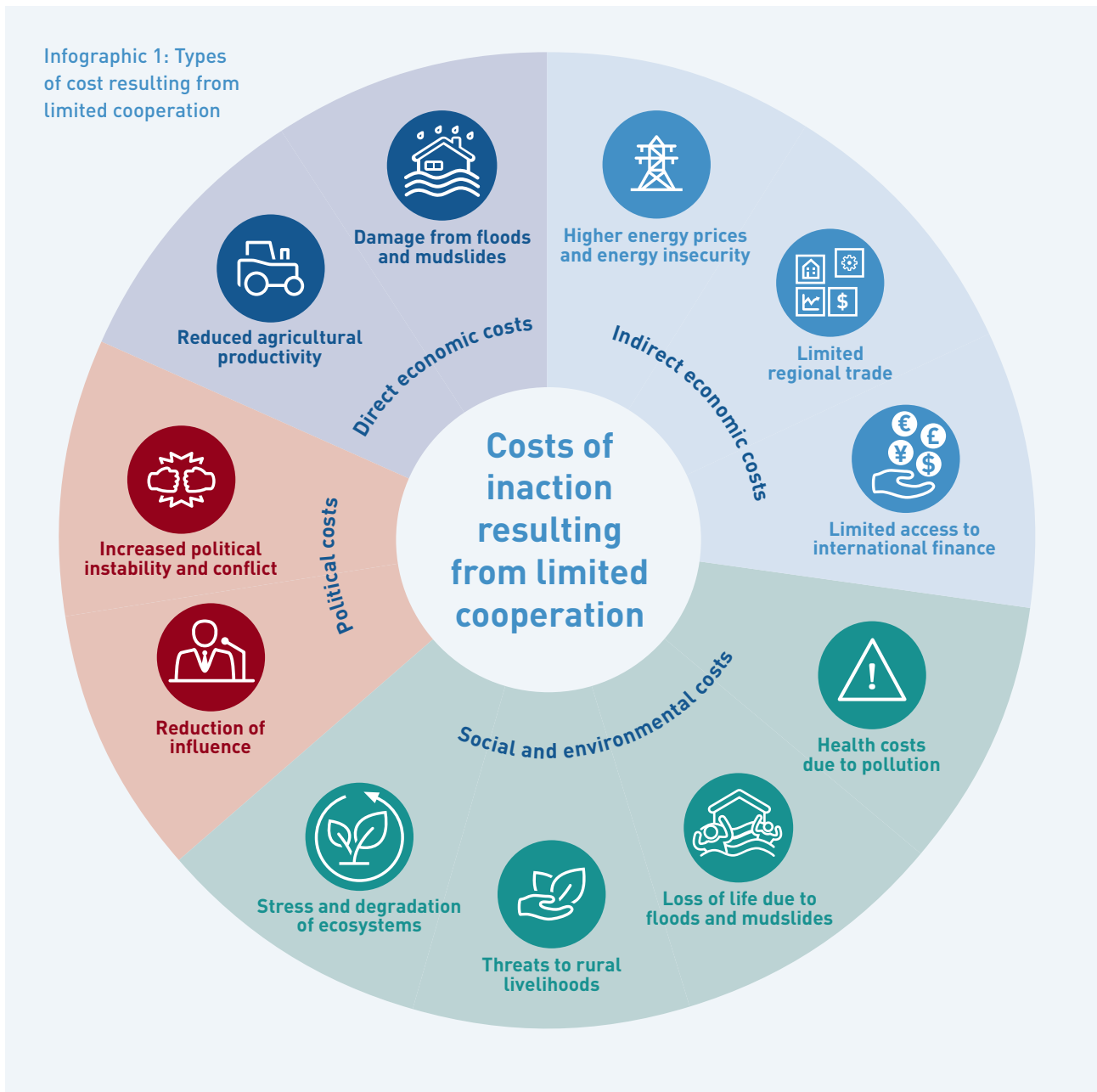
# The costs of inaction in transboundary water management

The costs of inaction comprise both direct and indirect negative impacts of limited and partly insufficient cooperation over water management in the region. Costs directly related to water management primarily concern losses in agricultural production due to inadequate seasonal availability of water for irrigation, losses and damages from winter floods, and the costs of new, regionally 'redundant' infrastructure built to protect countries against the consequences of unilateral water management. These economic costs are accompanied by significant

**The true value of water cooperation is far bigger than the direct economic benefits that can be derived from better water management**

social and environmental costs, such as impacts on livelihoods and ecosystems. In addition to these direct effects, insufficient water cooperation causes further negative impacts indirectly: non-cooperation over water resources affects other sectors, producing significant costs that often surpass those directly related to water management. It leads to inefficient trade in energy and other sectors, constrains countries' access to international finance, and creates political frictions that limit all countries' abilities to shape their region to mutual advantage. Ultimately, it might even foster instability and conflict.

It is important not to neglect these indirect costs of suboptimal water management as they demonstrate that the true value of water cooperation is far greater than the direct economic benefits that can be derived from better water management. Moreover, shedding light on the indirect costs clearly reveals that the suspicion that water cooperation benefits downstream countries more than upstream countries is often not true. Although water cooperation often generates fewer direct economic benefits for upstream countries, these stand to gain as much or even more than downstream countries from closer cooperation once the indirect costs of limited cooperation are taken into account.



## Estimating the costs of inaction in Central Asia

Limited cooperation on transboundary water management will result in significant costs for all basin countries.

The costs of insufficient cooperation are already significant today, and risk rising yet further in the future. Due to deteriorating infrastructure, environmental degradation, and demographic and economic pressures, these costs will inevitably increase if (transboundary) water management remains as it currently is.

- **Downstream countries** face the most direct costs, as population growth upstream will lead to greater food and energy demands that their governments may only know to satisfy through increased water abstraction, storage and pollution. This is likely to involve significant costs in the agricultural sector related to under-irrigation, as a consequence of insufficient levels of seasonal water availability downstream. By undermining rural livelihoods, this may also entail increasing local vulnerabilities, fuelling migration and instability. Limited cooperation will also cause significant downstream costs resulting from water-related hazards, such as floods and mudslides. At the same time, downstream countries risk losing out on the many benefits that more integrated markets might offer, from trade to more integrated transport infrastructure linking them e.g. to China or to the power reserve capacity that upstream reservoirs could provide.
- **Upstream countries** have at least as much to lose from insufficient cooperation. Even if they will not face many direct costs, shortfalls in transboundary cooperation risk affecting them disproportionately through other sectors. A lack of integration of transport infrastructure and energy and labour markets will have a relatively stronger effect on them, due to their land-locked mountainous topography. Moreover, diplomatic conflicts over water imply great difficulties for their attempts to access international finance and know-how for maintenance of existing, as well as investment in new water infrastructure, such as e.g. new hydropower projects – which they consider crucial for socio-economic development, and in which they have invested significant political capital.

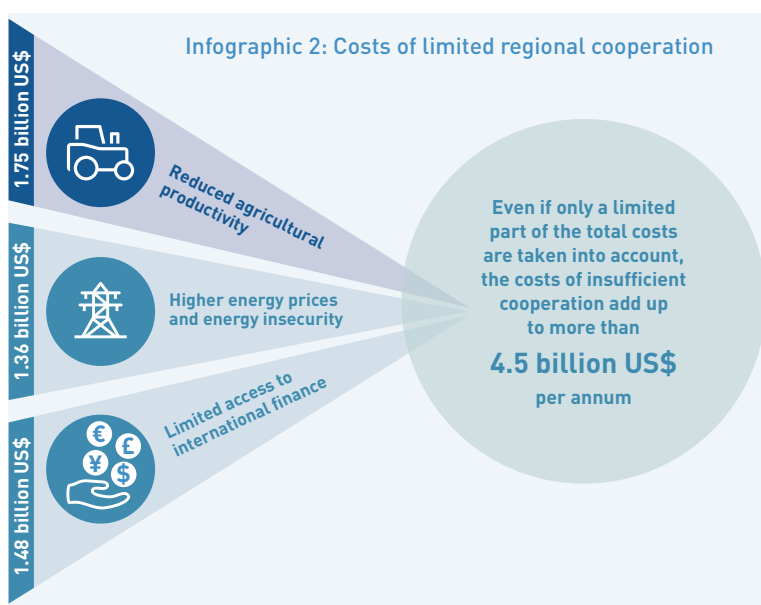
A real quantification of these costs of inaction is difficult, especially if analyses attempt to incorporate the comparatively more substantive indirect costs that cannot directly and unambiguously be attributed to transboundary water governance. However, drawing on three previous studies (*UNDP 2005, World Bank 2016a, Jalilov et al. 2015*) that calculated monetary values of proxies for three cost categories – agricultural losses, inefficient electricity trade and lack of access to finance due to non-cooperation – the resulting costs of insufficient cooperation add up to more than 4.5 billion US\$ per annum.

This number comprises only part of the true cost as some aspects are systematically undervalued. First, the proxies used for calculating the three monetary values do not cover the three corresponding categories comprehensively. Second, for lack of comparatively comprehensive studies, the overall sum does not include any values for important indirect costs such as

e.g. environmental and social costs as well as low likelihood but high impact risks such as violent conflict, or the diffuse but significant negative influence water tensions have on broader integration.

The third issue ensuring undervaluation is that the sum of 4.5 billion US\$ does not account for any interaction effects between sectors and across societies, which are bound to be significant. A global level study by the World Bank from 2016 (b), which used an equilibrium model to examine the overall effects of water governance quality, estimated the difference between good and bad water governance to add up to more than 20% of GDP for Central Asia by 2050. This 20% GDP differential for Central Asia that water governance accounts for is the biggest such gap for any region in the world, underlining the poor state, but also the massive potential which could be leveraged through improving water governance.

**The quality of water governance will have an enormous impact on future economic development**



## Entry points for mutually beneficial solutions

The risks and costs of insufficient water cooperation loom large, and the degree and quality of water cooperation will have enormous impacts on the future development and political stability of the region. Even if the risks faced by individual countries are not symmetric, the benefits of cooperation are frequently complementary – and offer multiple entry points for mutually beneficial solutions.

In seeking to strengthen water cooperation in the service of all countries, Central Asian governments can build on three important assets and developments. First, Central Asia is home to numerous existing cooperation frameworks at different levels whose functioning can either be enhanced or serve as inspiration for the extension of cooperation to other locales and issues. Second, the new 'redundant' infrastructure has reduced dependencies and vulnerabilities and has thereby removed or mitigated potential 'flashpoints' of political conflict. Third, the intensified political dialogue between Central Asian countries during the past year creates new potential and a promising environment for reinforced cooperation, as long as all countries agree to a long-term commitment.

In trying to harness these entry points, Central Asian governments and third parties interested in strengthening cooperation should draw on the following considerations:

- **Start by focusing on uncontested issues that provide complementary benefits to actors and embrace mutually shared interests:** These could, for example, include topics like dam safety, improved irrigation practices, joint water quality monitoring or shared management agreements on smaller sub-basins. Such an approach assists in building trust that provides the basis for any deeper cooperation. External actors could support such an approach by capacity-building and providing financial resources.
- **Embrace a pragmatic sub-regional approach:** Whilst the regional level offers the greatest benefits of scale, substantial progress in fostering cooperation at this stage is most likely to be realized at the (sub-) basin level. The current emphasis on leveraging the existing top-down regional water cooperation framework, therefore, needs to be complemented by efforts to strengthen bi-/trilateral technical and political cooperation below the regional level. Decentralized approaches at the (sub-) basin level, including agreements for the Amu and Syr Darya, could be a way out of the current difficulties at the regional level.
- **Pursue a poly-centric approach to cooperation but ensure consistency with regional approach:** In order to increase chances of success, actors should focus on different water related topics (irrigation, energy) at different scales (local, national, sub-regional) and administrative levels to leverage water cooperation. A poly-centric approach to cooperation is more promising and may in time also foster regional-level cooperation, as the benefits of pragmatic cooperation leave non-participants concerned about being left behind. However, whilst pursuing a poly-centric approach, it is important to ensure compatibility and consistency with a regional cooperation approach, e.g. by avoiding unintended negative effects on other riparians, by identifying co-benefits, or by ensuring regional compatibility of national data and information systems. This also implies an important role for international actors, as they will be required to think carefully about the incentives they set and communicate when supporting sub-regional activities.



This policy brief is based on the report "Rethinking Water in Central Asia: the costs of inaction and benefits of water cooperation" prepared by adelphi and CAREC for SDC. The report assesses the costs of inaction on transboundary cooperation in the region, drawing on existing literature and insights from national expert groups. The study identifies current costs resulting from suboptimal water management and assesses future risks related to continued limited cooperation by describing four different future scenarios that allow comparing the risks related to doing 'business as usual' with three scenarios of cooperation.

### Literature cited

Jalilov, Shokhrukh-Mirzo; Olli Varis and Marko Keskinen 2015: Sharing Benefits in Transboundary Rivers: An Experimental Case Study of Central Asian Water-Energy-Agriculture Nexus. In: *Water* 7(9), 4778-4805.

UNDP 2005: Central Asia Human Development Report: Bringing Down Barriers: Regional Cooperation for Human Development and Human Security. Bratislava, Slovakia: UNDP 2005. Available online at [http://hdr.undp.org/sites/default/files/central\\_asia\\_2005\\_en.pdf](http://hdr.undp.org/sites/default/files/central_asia_2005_en.pdf) (retrieved March 16, 2017).

World Bank 2016a: Regional Power Trade. Unrealized Benefits for Central Asia for 2010-2014. Available online at [http://www.carecprogram.org/uploads/events/2016/04-21st-ESCC-Meeting/Presentation-Materials/ESCC-Meeting/Element%202.%20CA%20Power%20Trade\\_ESCC%20Islamabad%20April%202016.pdf](http://www.carecprogram.org/uploads/events/2016/04-21st-ESCC-Meeting/Presentation-Materials/ESCC-Meeting/Element%202.%20CA%20Power%20Trade_ESCC%20Islamabad%20April%202016.pdf) (retrieved March 16, 2017).

World Bank 2016b: High and Dry Climate Change, Water, and the Economy. Available online at <http://www.worldbank.org/en/topic/water/publication/high-and-dry-climate-change-water-and-the-economy> (retrieved May 6, 2017).