



The impact of climate change on the dynamics of conflicts in the transboundary river basins of Kyrgyzstan, Kazakhstan and Tajikistan

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Relevance of the research

Climate change and the deterioration of environmental conditions are having increasing impact on countries' socio-economic development, as well as the lives of their communities. Regional tensions are increasing as a result of water scarcity and degrading land, as well as more intense competition for natural resources. However, these issues remain under-researched in the region. Mass and social media attention on these changing dynamics suggest that there is high demand for knowledge among the public – what is happening now? How will the lives of communities change as a result? What are the implications of climate and environmental risks for security in the region? The escalation of local crises over falling water levels in rivers and canals and drought in pasture lands in summer 2021 indicated that, approaching climate change and climate issues in Central, water distribution in river basins would be an ideal entry point. Therefore, International Alert led an analytical process in Kazakhstan, Kyrgyzstan, and Tajikistan from September-November 2021 to inform regional dialogue on the social dimensions of climate change and environmental degradation and their tension- and conflict-generating potential. Geographic coverage of the process included three border areas: Almaty and Zhambyl regions of Kazakhstan; Batken, Talas, and Chui regions of Kyrgyzstan; Sughd region of Tajikistan. The results of the study and recommendations were agreed upon by experts from all three countries, a significant achievement.

Methodology

The study was based on the assumption that climate change and environmental degradation are becoming key conflict drivers due to shrinking natural resources for agriculture and increased competition. Therefore, the focus of the field studies in Kazakhstan, Kyrgyzstan, and Tajikistan was to identify areas of potential tension related to water distribution and its relationship to climate change and conflict, as well as opportunities and mechanisms to prevent them escalating into violent conflict.

The research methodology was based on desk review of a wide range of documents, reports, keynotes, and academic publications, followed up with qualitative data collection from field research - interviews with representatives of state bodies and organisations, local governments, civil society organisations (CSOs), media, the academic community, and independent experts.

Kazakhstan

Zhambyl and Almaty regions

Talas and Chui region

Batken region

Kyrgyzstan

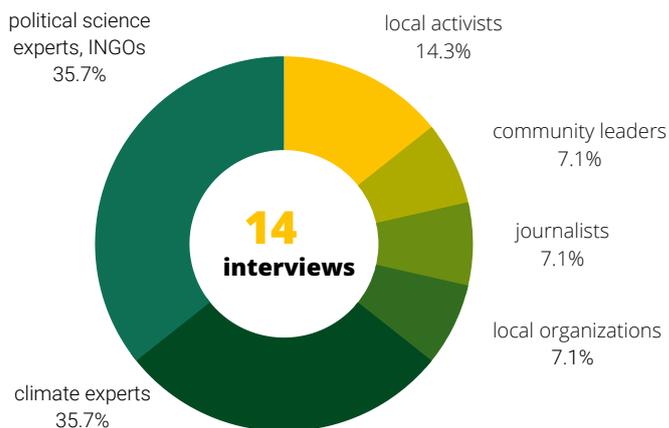
Sughd region

Tajikistan



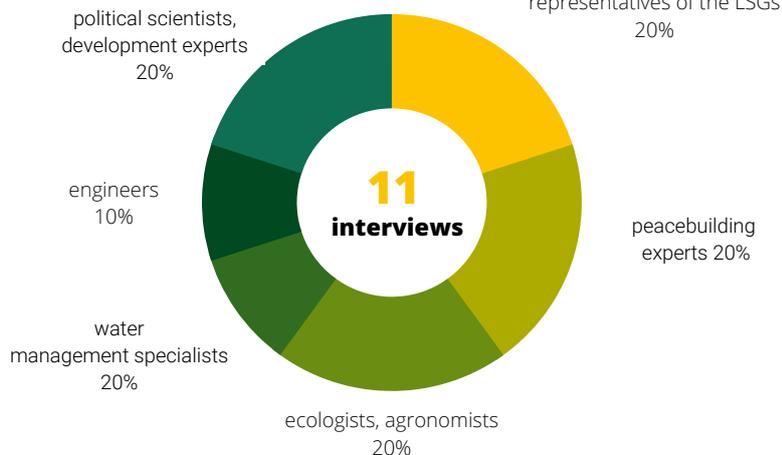
Focus group discussions were also held with representatives of border communities.

Tajikistan:

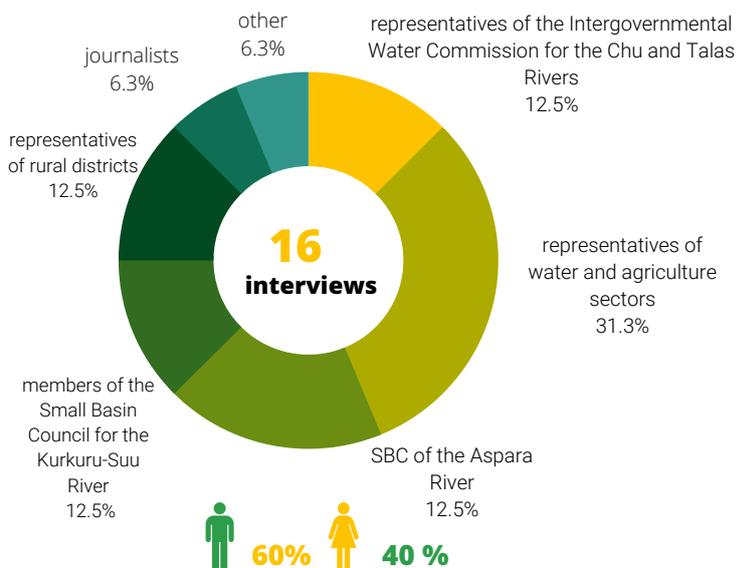


Kyrgyzstan:

Batken region:



Kazakhstan:



Focus groups (Kulundu, Kok-Tash, Samarqandek and Bujum villages): 26 people



Talas region: 16 interviews in Amanbayev and Sheker villages



Chui region: 22 interviews in Chaldovar and Cholok-Aryk villages



10 in-depth interviews were conducted at the state level with Kyrgyz and Kazakh representatives of international organizations, NGOs, government agencies, media, etc.

Overview of the situation

Data on rising temperatures, longer duration of hot weather, and decreasing precipitation shows growth in aridity across the three countries. For Kazakhstan, this concerns Zhambyl, Mangystau, Aktobe, West-Kazakhstan and Kyzylorda regions;^[1] for Kyrgyzstan, valley zones in Talas, Chui, Osh and Jalal-Abad regions;^[2] Sughd region in Tajikistan.^[3]

[1] Annual bulletin for monitoring the state and climate change of Kazakhstan: 2019. RSE "Kazhydromet", Nur-Sultan, 2020, URL: <https://www.kazhydromet.kz/klimat/ezhegodnyy-byulleten-monitoringa-sostoyaniya-i-izmeneniya-klimata-kazahstana>

[2] Report on Assessment of climate change in the Kyrgyz Republic. IFAD Project "Livestock and Market Development-2", Bishkek, 2020, URL: <https://sropasture.kg/page?id=373>

[3] Climate change profile: Tajikistan. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Dushanbe, 2020, URL: https://www.landuse-ca.org/wp-content/uploads/2019/04/2020_GIZ-Climate-Profile-Tajikistan_RU.pdf, Third National Communication of the Republic of Tajikistan under the UN Framework Convention on Climate Change. Dushanbe, 2014, URL: <https://unfccc.int/resource/docs/natc/tjknc3.pdf>

Local economies and community wellbeing in these areas are largely dependent on agriculture, including irrigated agriculture. Numerous studies and forecasts suggest shortages of irrigation water in Central Asia will sharply increase by the middle and end of the 21st century. Greater aridity, growing water scarcity and high vulnerability of agricultural production are key climate risks in Central Asia, yet long-term trends in and forecasts on changes in temperature, precipitation, snowfall and -cover in mountainous areas make it possible to determine the most vulnerable areas in the region. However, many of these studies have been undertaken by internationals and are only available in English, meaning that accessibility to and understanding of these trends has been difficult for many in the region outside a narrow circle. Therefore, there was a need to organise regional dialogue on the social aspects of climate change and environmental degradation with regional experts to allow locals to benefit from the results.

Key climate risks in Central Asia:



**great aridity
of the climate**



**growing
water scarcity**



**high vulnerability of agricultural
production**

In summer 2021, the increase in temperature and water scarcity, and a sharp decrease in the flow of a number of rivers in the target locations attracted considerable public attention. In Kazakhstan, the death of horses, cows, and sheep due to lack of water and feed in the Mangistau and Kyzylorda regions caused considerable public concern.[4] In Zhambyl, there are permanent concerns of shortages of water for irrigation. In Kyrgyzstan, a lack of water for irrigation led 300 farmers to protest outside buildings of the Government of Kyrgyzstan[5] and block the major Bishkek-Osh highway.[6] The authorities promised to implement a number of reservoir projects in response, suggesting the problem was linked to the unfair distribution of water between Kyrgyzstan and Kazakhstan.[7] In Tajikistan, drought led to a lack of fodder being grown on pasture land. Officials suggested the problem of reduced yields and pasture desertification was due to unfair distribution of pasture land. The current imbalance in the use of natural resources (water for irrigation, agricultural land) makes many rural communities in Central Asia extremely vulnerable to the impacts of climate change, namely abnormally high temperatures, droughts, and low levels of water in rivers.



The studies have shown the solidarity of local expert opinion that climate change and environmental factors are one of the key drivers of current and future tensions in Central Asia.



[4] The American media spoke about the mass loss of livestock due to drought in Kazakhstan. Kazakh Telegraph Agency, August 10, 2021, URL: <https://kaztag.kz/ru/news/amerikanskije-smi-rasskazali-o-massovom-padezhe-skota-iz-za-zasukhi-v-kazahstane>

[5] Lack of irrigation water. 300 farmers rallied outside the government building. IA "24.kg" - News of Kyrgyzstan, June 14, 2021, URL: https://24.kg/obschestvo/197535_nehvatka-polivnoj-vodyi300_fermerov_vyishli_namiting_kzdaniyu_pravitelstva/

[6] Farmers blocked the Bishkek-Osh highway, demanding irrigation water. Sputnik Kyrgyzstan, June 28, 2021, URL: <https://ru.sputnik.kg/incidents/20210628/1053027595/perekrytie-trassa-bishkek-osh-polivnaya-voda.html>

[7] Drought in the Chui region. What is really going on? Sputnik Kyrgyzstan, June 17, 2021, URL: <https://ru.sputnik.kg/video/20210617/1052892040/chujskaya-oblast-voda-zasuha-fermer-video.html>

“Conflicts happen every year. Because Kazakhstan is located in the very lower [downstream] reaches. We have to get an agreement with Tajikistan that we will supply them with what they need, and they will dump the amount of water we need. This happens every year. Water is discharged through Uzbekistan (along Syr Darya), and it takes as much water from this volume as it needs. This is also happening along Syr Darya, along Chu-Talas, but already between Kazakhstan and Kyrgyzstan. The problem lies in the fact that countries need warmth in winter.”

Legal expert, Kazakhstan

However, there is a clear lack of knowledge among the expert community about who is most affected by climate change and exact vulnerabilities and tensions in and between conflict-affected communities. The assumption has been that tensions are primarily associated with increased competition for dwindling water resources between countries, strained relationships, and different interests of upstream and downstream stakeholders.

Research findings in Kazakhstan and Kyrgyzstan: Irrigation, agriculture and energy as potential sources of heightened tensions

Field studies in Zhambyl region of Kazakhstan and Talas and Chui regions of Kyrgyzstan revealed several areas of potential tension at the rural community level related to disputes over water and water shortages for agriculture.

Mutual claims and disputes:



non-flow of water along the river from the territory of a neighbouring country for more than a decade;



injustice distribution of water in transboundary rivers between countries, especially during the vegetation season;



injustices in distribution of water from transboundary rivers between countries, especially during the vegetation season;



lack of reliable, timely and complete information on the distribution of river flow among the water-management authorities of Kazakhstan and Kyrgyzstan;



non-effective use of water resources for the mass (and expanding) cultivation of such moisture-loving crops such as beets, beans, and onions. Underuse of water-saving technologies in agricultural development. Significant losses at irrigation facilities that require repair or even reconstruction

These problems affect both sides of the Kazakh and Kyrgyz border and pose a conflict risk. In 2012 and 2013, there were already precedents of border conflicts on the Aspara and Koksay rivers. In 2012, on the Aspara river, violence was avoided through public diplomacy, the creation of small basin council which acted as a negotiating platform, and the automation of water accounting, which removed suspicions about unfair water allocation at the border. In 2013, along the Koksay river, Kazakhstan was forced to hastily implement an expensive project (about KZT6 billion/USD40 million according to 2013 exchange rates[8]) to extend a water conduit from Koksay gorge.

[8] <https://www.exchangerates.org.uk/KZT-USD-spot-exchange-rates-history-2013.html>

In an environment of reduced river flows and increased aridity, tensions associated by one side with the unfair and irrational use of shared water resources by the other side are flammable and not grounded in evidence and reason. Looking at persisting water-allocation issues in the Chu and Talas river basins, tensions were at extreme risk of escalation due to the decrease in river flow.

“In August 2021, Orto-Tokoi reservoir, from which water enters the territory of Kazakhstan along the Chu River basin, was depleted to a ‘dead’ volume and functioned in live flow mode: as much water came from the mountains went straight for irrigation.”

Expert from the Chu-Talas Water Commission, Kazakhstan

The crisis situation in 2021 saw a visible drop in water levels in rivers and canals, drying up of pasture land, and mass dying out of livestock. Similar crises in the past has led to urgent unilateral measures by national governments, e.g. bans on the export of fodder, restrictions on the sharing of resources between border communities, and the accelerated construction of reservoirs to accumulate water on national territory. As a general rule, these processes have not included consultation with local stakeholders or vulnerable communities within the countries in question, let alone those on the other side of the border. These unilateral actions, therefore, are not conducive to reduce tensions in the in the longer term and may in fact exacerbate the situation and accelerate conflict from the local to inter-state level.

Despite the lack of irrigation water during the vegetation season, farmers in the Kurkuroo river basin still continue to cultivate the moisture-loving crops. The analysis shows that beans remain the main crop in the Kara-Buura region district (Kg). In 2021, it accounted for 48% of the total area of agricultural crops watered from the Kurkuroo river basin. However, today there are a clear noticeable trend to in the gradually replacement of beans with less moisture-intensive types of crops, in particular cereals. And This trend is can already be already observed in the settlements of the Kara-

“By mid-September 2021, the Kirov reservoir worked up to 7 million cubic metres of water...this is below the dead volume by 3 million cubic metres of water for the first time in 25 years of observations.”

Expert from the Chu-Talas Water Commission, Kazakhstan

Buura region, located further away from sources of irrigation water.

However, today there are noticeable trends in the gradual replacement of beans with less moisture-intensive types of crops, in particular cereals. And this trend is already observed in the settlements of the Kara-Buura region, located farther from sources of irrigation water.

“Since last year, the residents in Amanbayev village have gradually begun to sow grain. The reason is the lack of irrigation water coming from the Kurkuroo river. Although it is beneficial for the population to cultivate beans, however, their irrigation rate is much higher than for cereals, and they have to be watered two to three times more than barley or wheat. Compared to last year, we are seeing an increase in the area of grain crops by 300 hectares, with a simultaneous reduction in bean crops. If this trend continues next year, it is possible that the share of cereals will rise rapidly.”

(Interview in Amanbayev village, Kyrgyzstan).

“... in Shu district, only one farm, Kyzylsha, decided to cultivate sugar beets in 2021. It allotted 905 hectares for this crop, of which 140 had to be written off.”

Journalist from the regional newspaper in Shu District, Kazakhstan

“... the construction of new reservoirs, daily regulation basins, as well as new bypass canals on the territory of Kyrgyzstan will take place, which may mean that, most likely, the water supply to Kazakhstan along the Chu River will be even more limited not only during the vegetation season, but also during the non-vegetation season.”

Climate expert, Kazakhstan

In Zhambyl region, despite the long-term water shortages, very moisture-loving sugar beet continues to be grown in order to support the local sugar centerfactory with raw materials. There is a centralized demand for crops that local farmers cannot meet on a sustainable, and long-term basis. In 2021, a significant part of the sugar beet crops in Kordai, Merken, and Shu regions dried up due to an acute shortages of irrigation water.

Research findings in Kyrgyzstan and Tajikistan: Necessity for inclusive resource management and enhanced cross-border cooperation to reduce tensions



One of the most serious situations related to the distribution of water, which led to an armed clash and scores of casualties in April 2021, was observed in the disputed border areas of Sughd (Tj) and Batken (Kg) regions.

Consultations suggested that the loss of trust has been continually undermined by periodic violations of previously reached agreements on the distribution of water. Competition for limited natural resources further heats up the situation and is a trigger for border conflicts. In addition, populist politics, a rise in nationalism, the effects of climate change, and the impact of the COVID-19 pandemic have caused additional stress, exacerbating political rhetoric and economic instability in both Sughd and Batken regions.

Unlike previous clashes, which were often limited to small skirmishes between the locals on either side, 2021 saw open confrontation between military forces.[9] While the governments of the two countries were able to reach a ceasefire quickly, this violence swiftly undermined previously friendly relations between Kyrgyzstan and Tajikistan.

The events of April 2021 showed that water disputes can become a serious threat to the stability of the region and that countries can no longer delay the development of joint decisions/mechanisms on the management of shared resources.

In the border areas of Sughd and Batken regions, several large rivers flow, including the Isfara, Khodjabakirgan (Kozu-Baglan), Kara-Suu, and Ak-Suu rivers. Many districts and cities of Sughd and Batken regions depend on the water of these rivers, especially for irrigated agriculture.

[9] Filippo Costa Buranelli. «Conflict in the Kyrgyz-Tajik Border – a Potential Turning Point for Central Asia». The Central Asia-Caucasus Analyst, May 55, 2021, URL: <https://www.cacianalyst.org/publications/analytical-articles/item/13672-conflict-in-the-kyrgyz-tajik-border-%E2%80%93-a-potential-turning-point-for-central-asia.html>.

“The main causes of tension are poor water distribution, poor leadership, and a lack of engagement with the local community. Climate change will exacerbate the situation, but the main reason, I would say, is poor management. If [governments] coordinate people on both sides well, then in the future they will be ready for the risks of climate change and adapt accordingly.”

Security expert, Tajikistan

Dozens of large canals and several reservoirs take water from these rivers and provide support to livelihoods, delivering water to hundreds of thousands of people in this densely populated region. The income of residents mainly depends on agriculture, remittances from labour migrants, and cross-border trade. After the April 2021, trade on the border of Tajikistan and Kyrgyzstan has practically ceased, and the importance of irrigated agriculture has increased.

While Kyrgyzstan and Tajikistan are considered vulnerable to climate change, their ability to adapt is limited despite improvements in legislation.[10] It is expected that average annual temperatures will rise gradually in winter and autumn, leading to the shrinking of glaciers and lower snow cover.

As a result, there will likely be less water in rivers, and the peak flow may shift from summer to spring, which will require additional adaptation measures and changes in agricultural practice in two republics. In Tajikistan, this problem will be more acute, because the contribution of snow and glacier meltwater to runoff always serves as a mitigating factor for (hydrological) drought. Forecasts suggest a significant increase in drought in Tajikistan from 3% to 25% by 2050.[11]

In fact, many experts suggested that Tajikistan and Kyrgyzstan have sufficient water in the medium term, and the current disputes are the result of poor water management and degradation of local water infrastructure. Transboundary water infrastructure is located in disputed territories, meaning that neither state takes responsibility for investing and maintaining it.[12] Attempts by local residents to independently repair the infrastructure spark an immediate negative reaction from the population of border villages on the other side.

Unfortunately, the system of Water Users Associations in Sughd and Batken is not yet functioning properly, which reduces the ability of local authorities to change the situation for the better.

At present, cooperation on water issues is limited, which has negative consequences for numerous sectors.[13] In addition, insufficient cooperation in the field of water and other resources has hampered economic development, trade, and is increasing the rate of environmental degradation and securitization of border areas where shared resources are located.

“Both Batken and Leilek are very densely populated areas where the pressure on natural resources is especially high. In the border areas of Tajikistan, the situation is no better, and in the enclaves, the population is even higher. With each passing year, the population on both sides of the border will continue to grow, and thus the competition for limited resources such as water and pasture will also increase. [The conflict] is not about who is of what nationality, but more about who controls what resources.”

Expert on sustainable development, Kyrgyzstan

[10] National Strategy for Adaptation to Climate Change of the Republic of Tajikistan for the Period up to 2030. Government of Republic of Tajikistan, October 2, 2019, URL: <https://leap.unep.org/countries/tj/national-legislation/national-strategy-adaptation-climate-change-republic-tajikistan>, «Climate Risk Country Profile», World Bank Group and Asian Development Bank, 2021, URL: www.climateknowledgeportal.worldbank.org/sites/default/files/2021-06/15814-WB_Kyrgyz%20Republic%20Country%20Profile-WEB.pdf.

[11] Alex Chapman, William Davies, and Ciaran Downey. «Climate Risk Country Profile – Tajikistan» World Bank Group, September 30, 2021, URL: <https://reliefweb.int/report/tajikistan/climate-risk-country-profile-tajikistan>.

[12] Kemel Toktomushev, «Promoting Social Cohesion and Conflict Mitigation: Understanding Conflict in the Cross-Border Areas of Kyrgyzstan and Tajikistan», University of Central Asia – Institute of Public Policy and Administration, no. 40 (2017): pp. 4-18, URL: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3023239.

[13] Rethinking Water in Central Asia: The costs of inaction and benefits of water cooperation. CAREC, 2017, URL: <https://www.adelphi.de/en/publication/rethinking-water-central-asia>

“People now say that ‘Every farmer is like a boss’...if he wants to open the water for irrigation, he opens and closes whenever he wants, even though there are (or should be) special people for this. It is very difficult to retain specialist, hydraulic engineers with their very small salary... Only those men in the villages who have no other job agree to work there. These people are not able to adequately respond to the demands of the local population.”

Mountainous communities development specialist, Kyrgyzstan

An excellent opportunity for increased cooperation is that countries are now more self-sufficient and have more confidence in achieving new agreements. This opens a window of opportunity for cooperation, as the level of constructive dialogue among Central Asian states begins to increase. There is growing support and political will from all governments in Central Asia to combat climate change – this is the moment when it will be necessary to discuss and agree on new potential forms of cooperation.

Findings

The study assessed publications on areas of tension in 2021 related to the environmental safety of habitats, reduced access to water resources, increased competition for natural resources, climate change, data on climate change, water resources, and statistical data. The study makes it possible to establish a connection between these tensions and rising temperatures, increasing aridity of the climate, and the current shortage of water resources due to low water levels and overregulated [SM1] rivers in Central Asia. The results of the study also provide a fairly reliable basis for assertions that climate and environmental stress will increase in the future. Additionally, there is a need to simplify climate modelling data to make it accessible to local experts, and also make scientific papers on climate change adaptation available in local languages, not simply in English.

Desk research suggests that the areas most exposed to the impacts of climate change, such as increased temperatures, longer duration of heatwaves, reductions in precipitation and shifting patterns of precipitation, and droughts, are vulnerable beyond these factors. These vulnerabilities include hotter climates and, higher population growth and density. In this regard, the geographic coverage of the study correlates quite well with data on exposure to various tensions and vulnerability development factors.

It is clearly forecast that there will be decreases in river flows in the basins of the Amu Darya, Syr Darya, Chu, and Talas rivers as a result of climate change. There will also be a growing reduction in glaciers and snow cover throughout the 21st century. Current population growth rates will put further pressure on available water reserves.

Central Asian governments reacted to climate crises in 2021, such as lower water levels in rivers and canals, widespread dying out of livestock, and drying out of pasture land, with unilateral measures. Banning fodder exports or accelerating reservoir construction will not solve problems in the shorter term and exacerbate transboundary tension which could escalate to inter-state conflict.

There is a growing need to adapt to climate change, expanding the scope of cooperation to address current and prevent future tensions. Approaches to resolving disputes and disagreements include international legal mechanisms based on established procedures and documentation of processes. Approaches such as arbitration, consultation, compliance, and mediation are not yet developed in Central Asia; preference is given to informal and often even spontaneous methods of discussing disagreements.

General recommendations for Kazakhstan, Kyrgyzstan and Tajikistan



1

Bring both local and international experts into wider discussion processes on climate, water, and ecology to allow local experts to participate and be in a position to convey knowledge and results in a more accessible and comprehensible manner for local audiences. More research must be made available in local languages to expand the expert community beyond a narrow circle.



2

Determine the geographical scope of regional dialogue with a focus on the southern and western border regions of Kazakhstan (Zhambyl, Kyzylorda, Mangistau, Turkestan, Almaty); valley zones in Kyrgyzstan (Jalal-Abad, Osh, Talas, Chui) and Batken region; Sughd and Khatlon regions in Tajikistan.



3

Widen analyses and dialogue on different, intersecting tension-generating factors related to climate, the environment, social issues, and the economy, making sure relevant expert and local voices in these fields are represented.



4

Promote transboundary dialogue based on the use of inclusive consultation tools, access to information, and holding public hearings as part of the transboundary environmental impact assessment procedure. Alert's working group must continue its work to bring to the attention of decision makers at the regional level the opinion of local communities.



5

Consider the possibility of holding regional mediation, consultation process, arbitration, including training and mentorship on conflict sensitivity, instruments for resolving interstate disputes, procedure, and documentation of processes.

Recommendations for Kyrgyzstan and Kazakhstan (Aspara, Kurkuroo, Talas and Chui river basins)



To the Government of the Republic of Kazakhstan, the Cabinet of Ministers of the Kyrgyz Republic and the Commission of the Republic of Kazakhstan and the Kyrgyz Republic on the use of inter-state water facilities on the Chu and Talas rivers:

- ✓ create independent automated accounting of transboundary water allocation to increase conflict sensitivity in water partnership, ensure its functioning based on bilateral legislative acts, and provide free access of interested persons to information on water allocation through online resources;
- ✓ gradually move towards the basin ecosystem principle of socio-economic development at the national and regional level;
- ✓ create and institutionalise transboundary basin councils with a focus on the joint development of conflict-sensitive measures for adaptation to climate change and mitigation of conflict potential in the basins of the transboundary Aspara, Kurkuroo, Talas, and Chui rivers;
- ✓ create consortia and other structures (where feasible including internationals) that ensure that concerns and economic interests of upstream and downstream businesses along transboundary rivers are shared, discussed, and understood in the development of economic activities;

The Government of the Republic of Kazakhstan should upgrade the status of national basin councils to the status of public councils to implement recommendations and make them binding within existing legal frameworks. Executive bodies should be tasked with making sure that basin councils fulfil their obligations;

The Commission of the Republic of Kazakhstan and the Kyrgyz Republic on the use of interstate water facilities on the Chu and Talas rivers should conduct an inventory of irrigated lands on the territory of the Kyrgyz Republic and in the territory of the Republic of Kazakhstan in the Kurkuroo river basin to assess the reserves and losses of water resources. They should also give an expert assessment of the prospects for water allocation, the feasibility of including the Ak-Moldo, Kara-Taky and Tomon-Tamga canals (as well as the Kozh canal in the Talas river basin) in the 2000 Agreement to finance their repair and reconstruction at the expense of Kazakhstan's share in the maintenance joint water management facilities and resume water supply to the fields of Zhualynsky district;

The Ministry of Natural Resources, Ecology, and Technical Supervision of the Kyrgyz Republic is encouraged to develop climate change-response measures and integrate them into policies, strategies, and planning at the national level (for example, in the National Adaptation Plan of the Kyrgyz Republic and component "Agriculture and irrigation" of the state sectoral programs of the Kyrgyz Republic on adaptation to climate change, the development of which is scheduled for 2022), particularly given growing shortages of irrigation water in the regions;

The State Agency for Water Resources of the Kyrgyz Republic, district state administrations, and local governments of Panfilov and Kara-Buura districts should conduct an informational and explanatory campaign in cooperation with non-governmental and international organisations on the specificities of irrigation norms for individual crops, the need for crop rotation, the introduction of moisture-saving technologies, and soil-processing methods;

The State Agency for Local Government Affairs and Inter-ethnic Relations, regional state administrations and local government bodies of Panfilov and Kara-Buura districts, together with development partners, should develop climate change-adaptation measures based on consultations with local communities and integrate them into Territorial Development Plans;

District state administrations and local governments of Panfilov and Kara-Buurinsky districts, together with the Ministry of Agriculture of the Kyrgyz Republic and the National Academy of Sciences of the Kyrgyz Republic, should develop options for diversifying crop cultivation to stabilise and increase sources of income for local communities;

The State Agency for Local Government Affairs and Inter-ethnic Relations, the State Agency for Water Resources of the Kyrgyz Republic, district state administrations and local governments of Panfilov and Kara-Buura districts should organise conflict-sensitive dialogue platforms involving representatives of local authorities, water-distribution institutions and local water users, with the possibility of holding exchange visits and regular online meetings. For example, it is possible to consider the possibility of drawing on the experience of Small Basin Councils;

The Ministry of Agriculture of the Republic of Kazakhstan, the Ministry of Industry and Infrastructure Development of the Republic of Kazakhstan, the Ministry of Emergency Situations of the Republic of Kazakhstan, the Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan and the Akimat of the Zhambyl region must ensure the implementation of the national action plan for the Chu and Talas river basins for 2022-2030, taking into account possible changes in the hydrological regime of transboundary rivers linked to the construction of upstream hydroelectric projects;

The Commission of the Republic of Kazakhstan and the Kyrgyz Republic on the use of water facilities for inter-state use on the Chu and Talas rivers should undertake a scientifically based environmental impact assessment in the transboundary context on the construction of upstream hydroelectric structures along the transboundary Chu and Talas rivers;

The Water Resources Committee of the Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan and the Shu-Talas Basin Inspectorate for Regulation and Protection of Water Resources should clarify groundwater reserves, ensure their constant monitoring, set limits on their use, automate their accounting, mandate the introduction of water-saving technologies in fields/pasture linked to artesian wells, and create an automated network of gauging stations that control the state and level of groundwater and provide access to this information for the population;

The Ministries of Foreign Affairs of the Republic of Kazakhstan and the Kyrgyz Republic should open a border post on the border between the Zhualyn district of Zhambyl region of the Republic of Kazakhstan and the Kara-Buura district of Talas region of the Kyrgyz Republic to establish social and economic cooperation and improve transboundary water partnership in the Kurkuroo river basin;

Development partners are encouraged to consider financing individual mini-projects to promote up-to-date water-saving irrigation technologies in local communities and scale up where successful.

Recommendations for Kyrgyzstan and Tajikistan (basins of the Isfara, Khodjabakirgan, Kara-Suu and Ak-Suu rivers)



The Cabinet of Ministers of the Kyrgyz Republic and the Government of the Republic of Tajikistan are recommended to:

- ✓ take measures to increase transparency and accountability in decision making, conduct joint consultations, and implement existing agreements in the field of transboundary water-resource management to reduce tensions between local population, strengthen mutual trust, and improve communications between the authorities and civil society;
- ✓ promote the development of cross-border trade between Batken and Sughd regions on the principles of mutually beneficial cooperation with the strengthening of trade dependence between border communities, which in the long term will strengthen their interests in easing tensions and building sustainable peace;
- ✓ strengthen efforts to collect reliable and timely meteorological data at the country and local level to improve the analysis of climate change and more accurately predict and assess its impacts;

The Cabinet of Ministers of the Kyrgyz Republic should revise the current approach to water management in Batken region and consider delegating certain water-management functions to local government to increase the efficiency of local water planning and distribution, as well as improve financial management in Water Users Associations;

The Government of the Republic of Tajikistan should increase access to Sughd region for independent researchers and journalists to better study and cover the problems of climate change and border conflicts, which will also improve the dialogue between the authorities and civil society;



The Ministries of Agriculture of the Kyrgyz Republic and the Republic of Tajikistan, together with local state administrations and local governments of Batken and Sughd regions, should develop a detailed plan for the introduction, development and further support of water-saving and “green” technologies and practices (e.g. drip irrigation and pump irrigation) and spreading crops with low water consumption (e.g. almonds and pistachios) in the basins of the transboundary Isfara, Khodzhabakirgan, Kara-Suu, and Ak-Suu rivers in Batken and Sughd regions;



The Ministry of Agriculture of the Kyrgyz Republic should pay special attention to the supporting existing cluster production chains for regional development as they have considerable potential. This could include financial and administrative support, such as high-quality homogeneous seeds and assistance in the preparation of documentation for export products;



Local government bodies of Batken and Sughd regions should strengthen measures to raise awareness about climate change, its impact and its consequences, among local populations. Populations should be supported to develop climate change-adaptation measures and increase conflict sensitivity to strengthen opportunities for peace;



Development partners, together with the local governments of Batken and Sughd regions should continue to increase the capacity of local Water User Associations to improve planning and management of water resources at the village level;



Development partners together with the authorised state bodies of the Kyrgyz Republic and the Republic of Tajikistan should develop measures to increase investment in the rehabilitation and development of irrigation infrastructure to reduce water losses and provide technical support to local Water User Associations to improve populations’ access to irrigation water;



Development partners are encouraged to promote intergovernmental dialogue between the Kyrgyz Republic and the Republic of Tajikistan on border delimitation and demarcation, development of joint solutions to reduce climate risks, and rational water use through the creation and development of bilateral and regional dialogue platforms, which can also include Small Basin Councils.

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