

Central Asia: Challenges and Opportunities by Way of the Middle Corridor

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Climate impacts in Central Asia will be unevenly distributed, potentially leading to competition over scarce resources such as water and land. Yield gains are expected in parts of Kazakhstan, while Tajikistan may see decreases. Hydropower aspirations may be dampened due to recurring droughts. The Afghan Qosh Tepa canal project could decrease water availability in downstream Uzbekistan and Turkmenistan but benefit Afghanistan, which may exacerbate tensions within the region. Women have a crucial role in fostering social cohesion through climate adaptation efforts but must be brought into formalized decision-making processes.

More than Just Neighbours of Afghanistan and Former Soviet Republics: An Introduction to Central Asia

The Russian invasion of Ukraine in February of 2022 changed geopolitical perceptions a lot and has put a spotlight on many of the former Soviet Republics, chiefly among the states comprising Central Asia. Located at the strategic gateway between Europe and the big producers as well as buyers' markets of South and East Asia, lay Kazakhstan, Kyrgyzstan, Uzbekistan, Tajikistan and Turkmenistan. While not representing a cultural and historical monolith, all five countries have a shared cultural as well as political history, given that they all formed part of the Soviet Union from 1918 to 1991. To this day, ties with Russia continue to be strong. Russia is a major trading partner, an ally in the Collective Security Treaty Organization (CSTO) and home to millions of Central Asia migrant labourers, who regularly send remittances to their home countries. For Tajikistan, this has provided 25% of GDP in the year 2020 (GIZ, 2022). In recent years the region has also started to experience increasing social unrest on behalf of the population. Triggers have been of an economic nature as well as perceived ethnic marginalization/ loss of autonomy on behalf of minorities. Protests have been met with sometimes harsh security force response and human rights organizations including different UN bodies have been sounding the alarm about imprison-

ment and mistreatment/torture of protesters in the region (Amnesty International, 2022; United Nations of the High Commissioner on Human Rights, 2022; Human Rights Watch, 2022).

Historically, Central Asia has been and continues to be strongly reliant upon agricultural production, which makes up a major component of GDP and provides jobs for roughly 45% and 25% of the population of Tajikistan and Uzbekistan respectively (USAID, 2021). In addition, many more households engage in agricultural cultivation in their private gardens and fields to supplement their income. Simultaneously, the relations between these countries are dominated by a significant upstream-downstream topography and shared water resources in a region that is mainly located within semi-arid and arid climatic zones, with aridity projected to expand as climate impacts take their course (Wang & Zhang, 2020). Against this backdrop, the countries' respective economies employ vastly different and, at times, opposing strategies to generate income. Unlike other regions, Central Asian river flow is mainly fed by snow and glacial melt. On the one hand, the overwhelmingly mountainous upstream countries Tajikistan and Kyrgyzstan rely heavily on hydro-power production to cover their energy needs as well as for export purposes. For this purpose, water reservoirs need to be filled in spring and summer with snow and glacial melt. On the other hand, the downstream countries Turkmenistan, Uzbekistan and Kazakhstan mainly have been focusing on agricultural production, most notably highly water-intensive cotton. Hence, they rely on snow and glacial melt for cultivation and irrigation.

For this purpose, a vast network of irrigation canals has been built and successfully expanded upon during the Soviet era. Indeed, so successful that it has resulted in a general overuse of the regional water resources, with the most notorious example being the remnants of the formerly great Aral Sea. Where once there were large harbours and fishing towns, there now lie desert and rusty old ships. Little remains of the lake, only a 10th of its size compared to the year 1960. This has brought about losses in fishing livelihoods as well as increases in sandstorms due to the large parts of the exposed seabed, resulting in adverse pulmonary health consequences (Wang et al., 2022).

There are two additional complicating factors to the overuse of water resources within this region. One is the outdated and leaky Soviet irrigation infrastructure that ensures that much of the water that is channelled towards

agricultural fields, does not even make it there, but instead is lost en route. The other major challenge, of course, is climate change. The geopolitical changes since independence from the Soviet Union have led to a stark drop in cooperation. An atmosphere of distrust, brought about by internal as well as external governance factors, had resulted in perpetual zero-sum game attitudes in the 1990s and 2000s, and it had led the path away from cooperation (Pohl et al., 2017). However, despite some outlier incidents, recent developments give rise to cautious hope with respect to trust building efforts. The topic of climate change is generally seen as a less sensitive issue, which nevertheless poses a threat to the entire region and beyond. Hence, it serves as a suitable entry point for increased cooperation and integrated action. The challenges in Central Asia are multifaceted and greater geopolitical developments of the last two years, such as the Russian War of Aggression on Ukraine, have shifted Central Asia into focus. Will the climate crisis exacerbate prospects for stability in the region?

Where Are We At?

Observed Climate Impacts in Central Asia

When addressing the climate crisis, often the focus is on future impacts, as projections typically centre around the years 2050, 2080 and 2100. However, in many of the world's regions, we can already observe impacts on the ground. Emerging attribution science is helping to make these already observed impacts of anthropogenic, hence human-made, extreme weather events more visible and provides us with indications of how much more likely specific climatological events have become due to human-environmental interactions. With regard to the availability of observed data, the observation network in the region can be scarce, depending on the particular sub-region. In addition, the data is not always reliable and data sharing between states and authorities can be quite political and interlaced with mistrust (Finaev et al., 2016). However, Haag et al. (2021) note that beyond the technical data, regional communities, particularly those engaging in agricultural cultivation or agro-pastoralism tend to have intricate knowledge of local weather patterns and climate. Where needed this can serve to bolster unreliable data or be used in lieu of meteorological station data, where it is lacking entirely. While impacts are distributed unevenly throughout the region, for the Central Asian region there is already an increase in aridity levels, particularly in mountain landscapes, which already has adverse impacts on the via-

bility of certain shrub species (Costello et al., 2022). Recurring drought in large areas of east-central Asia is leading to lower humidity, temperature increases, as well as drops in soil moisture (Birkmann et al., 2022). Water scarcity represents a formidable challenge for the region, which is particularly true for Turkmenistan and Uzbekistan. Here withdrawal of water is already equal to water availability, hence not leaving much wiggle room for climate impacts to put further stress on the vital resource (Shaw et al., 2022). Risks related to desertification, wildfires, and dust storms have increased as a result of higher temperatures and a decrease in precipitation (Shaw et al., 2022).

While the Aral Sea Disaster is mainly a product of unsustainable cultivation practices related to water-intensive cotton production, increases in water scarcity will put additional stress on an ecosystem already past its breaking point. The long-forgotten dumping of chemicals into the Aral Sea is now coming back to haunt the local as well as more removed populations. As dust storms are increasing in the region, due to increased aridity, sand, salts and long-forgotten chemicals are contributing to pulmonary illnesses and other adverse health risks currently being studied (Wang et al., 2022).

Impacts that are central in debates around climate change in Central Asia are those connected to the deteriorating constitution of the many regional glaciers in the Pamirs and Tian Shan mountain ranges, the water towers of Central Asia. Increases in air temperature influence the hydrological cycle. This in turn influences water availability for the upstream and even more acutely for the downstream population. Over the period between 1970 to 2009, it was determined that the volume of snow in the Pamir Mountains decreased by 0.74% compared to the period between 1927 to 1969 (Finaev et al., 2016). Between 1986 and 2008, Zhou, Aizen, and Aizen (2017) quantified a significant decrease in the number of snow on ground days for all of Central Asia. A study of (Haag et al., 2021) observed for the period between 2001 to 2018 that there is an increasing trend in the timing of snow onset and a decreasing trend in the timing of snow offset, resulting in a shortened snow season for two observed Tajik villages (Savnob and Roshorv) in the Pamir Mountains. Furthermore, Finaev et al. (2016) determined a reduction in winter snow stocks by 2.5% due to a reduction of the entire snow area between 1970 to 2009 compared to 1927 to 1969. Precipitation trends are, in general, less clear than those in temperature and certainly exhibit greater variance between Central Asian States and even within them. In addition, altitude and season-

ality play a crucial role in determining changes in temperature as well as precipitation. (Haag et al., 2021). Considering that Central Asia has much diversity with respect to topography, more high-resolution sub-regional studies are needed to shed light on this notoriously understudied region (Vakulchuk et al., 2023). Studies show that in the Pamirs, there is an overall trend of glacial reduction (Finaev et al., 2016). However, there are sub-regional anomalies. Hence, studies concerning mass change of glaciers in the Pamirs have been inconsistent, increasing the uncertainty about the understanding of glacial changes in the region (Barandun et al., 2020). While the early seasonal river discharge is mostly fed by winter snowfall, by July to September glaciers and permafrost release most of their meltwater and feed into river discharge. However, the melting of glaciers and permafrost does not only affect water availability within this region but indeed leads to many other natural disaster risks associated with high-mountain landscapes, e.g. glacial lake outbursts. Snowfall swiftly followed by temperature around the melting point can lead to increases in avalanches, flash floods, landslides, and other disasters in the Tian Shan ranges as well as the Pamirs (Shaw et al., 2022). The same is true for fast glacial melt and thawing of permafrost. The likelihood of heatwaves, droughts, delays and weakening of the monsoon circulation, floods, and accelerated glacial melting in Central Asia increases due to already observed temperature rises (Shaw et al., 2022). There is a plethora of observed climate impacts in this region, but what does this mean within the context of geopolitical developments human security, infrastructure and gender relations?

Water scarcity and Water Management as a Source for Unrest and Violence in Central Asia

On April 28, 2021, a conflict escalated on the border between Kyrgyzstan and Tajikistan around the Tajik exclave within Kyrgyzstan, Vorukh, which formally lasted 3 days (Imanaliyeva et al., 2021). The clashes were caused, inter alia, by the unclear delimitation of borders and the claims by both sides to the scarce water resources (Gotev, 2021). According to the reports, the installation of surveillance cameras at a water distribution point near the village of K k-Tash triggered the conflict (Radio Free Europe, 2021; Pannier, 2021). Initially, the fights on both sides were fought with fists and stones, however, a new level of escalation was quickly reached and both sides made use of heavy weapons (Reuters, 2021). It is estimated that 10,000 people were evacuated in the border region, and over 50 people died in total (BBC News,

2021). On May 3, both countries executed the withdrawal of their troops from the borders, ending the largest military confrontation in the region since the breakup of the Soviet Union in 1991 (Pannier, 2021).

Conflicts like this one, some violent and some not, have occurred again and again in the region. Tajikistan and Kyrgyzstan seem involved often, but also Kazakhstan, Uzbekistan and Turkmenistan have had their share of outbreaks or at least close calls. Since independence of all five post-Soviet Republics, water and energy have become increasingly sensitive topics. All five states have been involved in some form of latent conflicts and outbreaks of violence with their neighbours. Violence between communities as well as military clashes have been particularly salient between Kyrgyzstan and Tajikistan. Both states are struggling economically, with a large number of the population of both states engaging in labour migration to Russia (Rocheva & Varshaver, 2017). While strides have been made on the Kyrgyz side to move towards democratization, Tajikistan is firmly under autocratic rule. In the past 30 years since independence, tensions have occurred repeatedly along the Kyrgyz-Tajik border. The 970-kilometer-long border is marked by exclaves and unclear borders, which represents a major challenge and is underlying the repeated outbreaks of violence between the two states (Radio Free Europe, 2021; Pannier, 2021). The demarcation process is complicated by other factors such as “smuggling, drug trafficking, as well as the intrusion of criminal groups and violent extremist organizations” (Arynova & Schmeier, 2021). While territorial disputes are underlying the tensions, water and natural resource quarrels as well as disagreements over often inefficient water infrastructure and governance missteps are complicating factors (Arynova & Schmeier, 2021). Shared water has become a trigger and threat multiplier in the conflicts at the Tajik-Kyrgyz border. While the problems related to water scarcity are still largely human-made and indeed governance-related, the climate impacts that are starting to be observed and projected future impacts will undoubtedly serve as conflict multipliers in this already eventful border region. The winter season will also be disproportionately affected, higher temperature changes are expected during winter months. (Lioubimtseva & Henebry, 2009). In line with these studies, projections indicate possible changes in snowpack and seasonal shifts of spring melt as a result of warming trends in upstream regions of Central Asia (IPCC, 2022). This will not only produce adverse impacts on ecosystem services and economic development

but can severely impact intercommunal relations of different ethnic groups residing in those more volatile border regions (Kurmanalieva, 2018).

Indeed, even beyond outright outbreaks of violence, the lack of transboundary water cooperation has costs associated with it. In a 2016 study, the World Bank assessed the cost of good versus bad water governance and found that it was 20% of GDP for Central Asia by 2050. However, this does not include cascading social costs, hence underestimating the actual cost (Pohl et al., 2017).

Energy Security for Whom?

Energy production in light of Geopolitics and the Climate Crisis

The energy sector is another area where monetary losses caused by inadequate governance and climate change, could be detrimental. Energy production and consumption are intricately linked to emissions and can thus be a powerful avenue for mitigation. Since the start of the Russian war of aggression against Ukraine, the European Union has certainly realized the level of vulnerability they have to energy security. The utilization of gas supplies as a bargaining chip by Russia has made it painfully clear that energy supplies need to be diversified, while also being green(-er). The geopolitical shifts brought about by this major war in Europe have put a spotlight on Central Asia. Since then, the European Union, the United States as well as other bi- and multilateral cooperation with the region has intensified.

Looking at regional energy consumption, the record is quite mixed. While the upstream countries generally take advantage of the regional water resources to produce hydropower, the downstream countries still have a high reliance on coal, oil and gas for energy production. There have been heavy investments into the relevant infrastructure, including power grids, yet power shortages are common. This can have detrimental impacts on the affected populations, including life-threatening emergencies. Reasons for such disruptions in power supply are multifaceted. For upstream countries Kyrgyzstan and Tajikistan, which are highly dependent on hydropower, the ever-increasing number of droughts has led to water reservoirs that cannot be filled. Without sufficient water levels, there is no electricity. Projections for the region indicate above global average warming in the future due to climate change, suggesting temperature changes of about 2 to 7°C when comparing

mean temperatures from 2071-2100 and 1971-2000 with hot spots of warming in mountainous regions such as the Pamir Mountains (Mannig et al., 2013). Water scarcity will increase due to a significant rise in temperatures across Central Asia and the associated increase in evapotranspiration, even if mean precipitation does not decline. The number of extremely hot will likely increase significantly, with detrimental impacts on labour and the economy as a whole. (Shaw et al., 2022). However, Tajikistan is home to some of the largest hydropower plants and is looking to further expand its hydropower production as it is taking advantage of only 4% of its hydropower potential, instead of the 527 terawatt-hours (TWh) that are estimated to be the maximum the country could produce (IEA, 2022). The climate crisis could have dire consequences for hydropower production in the region, with negative feedback loops being a potential outcome. Further complicating matters, the energy infrastructure in the region is outdated and in desperate need of restoration/ reconstruction. Both are crucial factors that require further consideration by funders and implementing states.

While the Central Asian governments are keenly aware of the necessity to phase out fossil fuels, especially within the energy sector, the reliance on oil, coal and gas continues to be high. There are many reasons why this is the case and why it will be a formidable challenge to move into this direction. Similar to other coal mining regions, there are entire regions and their respective communities that are built around the coal mining industry (Kizeková, 2022). Hence, the structural changes that need to occur are not only related to putting novel infrastructure in place, but indeed it will take concerted efforts to address the socio-economic needs of the affected communities. This may include re-training workers in new professions, transforming former coal mining landscapes into environments that restore quality of life and potentially even supported resettlements for very remote communities, where this industry cannot simply be replaced. This process can be quite disruptive and stir up additional grievances within the respective communities (Pai et al., 2021). With the governments of Uzbekistan, as well as Kazakhstan and Tajikistan, already having struggled with local social movements over the last two years, governments may consider wide-reaching structural changes more carefully (Amnesty International, 2022; United Nations of the High Commissioner on Human Rights, 2022; Human Rights Watch, 2022). After violent clashes between protesters and state-based security forces, social cohesion and relations between government and the public

have suffered greatly and trust in governmental institutions has taken a big hit. Another complicating factor with regards to a social-ecological transformation in Central Asia is the tight personal relations between the fossil fuel industry and government officials. Challenging the business-as-usual model through wide-reaching structural changes also threatens profits. It is to be expected that the heads of affected industries are likely to lobby their network in positions of regulatory power. A promising avenue could be foreign investment. The EU as well as particular EU countries, such as Germany, are trying to intensify cooperative mechanisms with Central Asian partners with respect to energy, in particular Green Hydrogen production. This may be the way to transform coal communities, without the socio-economic ripple effects that a simple discontinuation might have. How these partnerships will be filled with life and concrete measures is still unclear, with joint statement remaining vague and aspirational in nature. However, well thought out, it could further cement EU-Central Asia relations and build mutual trust by providing long-term win-win engagement in the region. In addition, EU support for building infrastructure to support the completion of the Middle Corridor, a supply chain route that circumvents Russian territory via the Caspian Sea, will open up opportunities for further exchange.

The Power of Gender: How Inclusivity Can Provide Appropriate Measures for Dealing with the Climate Crisis

Understanding the gender dimensions of the climate-security nexus in Central Asia is essential for a comprehensive analysis of the region's challenges. Gender considerations intersect with the climate crisis and security in various ways. However, the approach gender is often addressed in the political, journalistic and academic spheres is through the narrative of vulnerability only. While this is of course the case to some extent, there is much more to gender dimensions than just victimhood. Women are indeed more likely to be engaged in agriculture, a sector that is particularly vulnerable to climate impacts (Thornton et al., 2014). The summers in most of Central Asia are already marked by extreme heat. According to climate projections, the climate crisis is set to increase the occurrence of heatwaves as well as the number of very hot days (Shaw et al., 2022). This will result in detrimental health impacts for those working in fields such as agriculture and construction as well as the sick and the elderly (ILO, 2019). When resources are scarce, women's workload typically increases. Given that they are often the primary caregivers for

children and elderly, they are particularly vulnerable to natural disasters. Natural disasters such as large rock falls, associated with glacier and permafrost degradation are predicted to increase in frequency and magnitude as global temperatures rise, gravely affecting the human security of women, the elderly, people with disabilities and children (Barandun et al., 2020). Access to resources represents another crucial factor that often contributes to the vulnerability and marginalization of women. In Central Asian societies, women's access to land and other vital resources, natural as well as monetary, remains limited.

Central Asian out-migration is highly gendered. Statistics provided by the Russian Federation for the year 2016, which is representative for other years, indicate that only 16% of Tajik migrants in Russia were female, while 18% of Uzbek migrants were counted as female. Kyrgyzstan however exhibits a higher rate of 38%. Women mostly stay behind in Central Asia because of gendered norms. Research for the context of Central Asia is still sparse, but in their 2017 study, Rocheva and Varshaver elaborate on the differing social pressure that leads to gendered migration within the regional context:

“The social legitimacy of female migration and, more broadly, perceptions of female migration are closely connected with concepts of femininity and masculinity in the sending societies. Migration in Central Asia is tied to fulfilling a man's ability to perform the roles of a good son, husband, father and neighbour even though it is fraught with existential and emotional risks, whereas staying behind can challenge his masculinity.” (Rocheva & Varshaver, 2017, p.95)

Most often, the women who stay behind, work in agriculture. Hence projections are particularly worrying in light of highly gendered migration in Tajikistan and Uzbekistan and climate projections for the South of Central Asia. The agricultural sector serves as a poignant example, with positive income gains being projected for large-scale commercial farms in northern regions of Kazakhstan and adverse impacts for the economically worse-off states to the South, especially for small-scale farms in arid zones such as Tajikistan (Shaw et al., 2022).

While migration and displacement can further erode women's resilience, they can also disrupt traditional gender roles and power dynamics within households and communities. Women may become the primary breadwinners and

gain more freedom with regard to day-to-day household decision-making processes. Indeed, due to their involvement in the agricultural sector, they often possess unique traditional knowledge, which can be beneficial for designing climate-related resilience and coping strategies for their households as well as communities.

Despite their knowledge being an asset to their communities, women tend to be noticeably absent from the decision-making table. Decisions with regards to the vital topic of water governance as well as climate adaptation and connected disaster risk reduction and management, are often taken without harnessing the expertise of this knowledgeable and large part of the population. Hence, female perspectives are lacking entirely in the design of resilience-enhancing strategies and governmental policies. However, there are some promising examples of active inclusion of women in Central Asia. The example of Uguloy Abdullaeva serves as a lighthouse example of the agency of women and what they can accomplish for their communities when included in decision-making bodies. Furthermore, it serves as an example of how men can act as allies to support inclusivity within their respective communities. Uguloy was nominated by the men of her community to form a local association of water users and become chair of said organization. Feeling the responsibility, she went to work immediately and started collecting money from the community. She was able to collect 1811 Somoni or about 155 €. She used these funds to travel to Dushanbe to engage in fundraising for her organization. She was able to raise significant funding from international donors for her community. With said funds, she was able to finance an excavator, build an office, as well as treat the community's water. The organization was able to install pipes and drainage and build in controls to monitor and manage water distribution. In addition, she received relevant trainings through international cooperation agencies, which she was able to share and thus multiply within her village (UN Women, 2020). While Ugoly's story is a tale of success and women's agency, it is far away from being the norm. As Zhyldyz Ysmanova, a gender expert at the Central Asian Alliance on Water puts it:

“We observed that when women are board members of these associations they are more efficient because women are the main water users. For example, when men only are board members, they decide on water supply for four consecutive hours a day and do not take into account the needs of the house-

hold. Overall, I can say that women are much more informed on water needs and they know exactly where the next pipe should be built to ease the burden on them.” (Delgado & Mukhamedova, 2020, p.7)

Intensified efforts in this direction are needed to not only produce isolated best practice examples but to foster an entire network of such female activists and experts. As a specialized network, women will be in a better position to demand a seat at the decision-making tables and have more clout with respect to influencing and crafting climate-related policies that serve the entire population.

Complicating Matters: The Afghan Qosh Tepa Canal

Bordering Tajikistan, Uzbekistan and Turkmenistan, Afghanistan has for decades been the fragile neighbour to the South. Fears of spillover effects of extremist or jihadist ideology from Afghanistan have guided the strong pushback regarding security policy of particularly the Uzbek and Tajik governments. However, since the Taliban takeover of the Afghan government, diplomatic relations have been slowly re-established between the Taliban-led government and the Central Asian Republics. However, news broke in 2022 regarding the initiation of construction of the Qosh Tepa Canal on behalf of the Afghan government. In efforts to restore infrastructure, intensify agricultural production and bolster economic development, the 285 km canal will redirect water from the Amu Darya river, which downstream Uzbekistan and Turkmenistan largely depend on for water-intensive cotton production, along with the production of other crops. The project is planned across three construction phases over five years and will allow Afghanistan to divert up to a staggering 25% of current Amu Darya flow will be redirected towards Afghanistan through the Qosh Tepa canal (Gafurov et al., 2023). The canal was first envisioned some 50 years ago. While this is causing much concern within the neighbourhood, the direct neighbours have not put into question the right of Afghanistan to build it and withdraw its equitable share. However, causing concern is not only the mere fact that the canal is being built but indeed the quality of the construction. As the project is being undertaken right now, the canal will lose much water en route due to the inefficiency of the construction itself. Hence, Uzbekistan has proposed technical assistance for the project in order to support the efficiency of the redirected water resources (OpinioJuris, 2022). No wonder, Uzbekistan is looking to get in-

volved. The potential downstream impacts are grave. Uzbekistan is highly dependent on irrigation systems for agricultural production, a sector that accounts for 25% of GDP. In Uzbekistan, cotton and wheat take up the largest cropping area. The country has made great strides in terms of economic development and its population has been growing steadily, leading to an increase in water demand. This already meets a decreasing water supply due to old irrigation infrastructure and climate change (Garfurov et al., 2023). Increases in drought occurrence as well as increases in evapo-transpiration due to higher temperatures have adverse consequences for the availability of water already. For the foreseeable future projections show that water stress is likely to increase further due to increases in drought and decreasing precipitation trends in parts of Central Asia, which are likely to add to the incidence as well as severity of droughts (Shaw et al., 2022). The massive water withdrawal could lead to an overall decline in suitable cropland of up to 18.9% in Uzbekistan alone. Cascading risks of losses of crops or cropland include food insecurity and rising food prices within the entire region and beyond (Garfurov et al., 2023). This of course can lead to internal instability and civil unrest, as we have seen in the Arab Spring and the genesis of the war in Syria. The Qosh Tepa Canal is yet one more element in a perfect storm for instability in a region that has generally managed to remain stable, despite the decade-long instability to the South of its borders.

Ways Forward:

How to Mitigate the Worst and Peacefully Adapt to the Inevitable

The climate-security nexus in Central Asia is a complex and evolving challenge that requires a multifaceted and cooperative approach. Climate risks are intricately intertwined with already existing, underlying challenges in the region. The upstream-downstream topography determines the opposing economic interests, with transboundary waters being central for both, hydro-power production as well as agriculture.

It is important to note that as of yet, it is unclear whether the international community will manage to comply with the warming and thus emissions targets set at the Paris Conference of Parties (COP), the United Nations climate conference. The climate research community has worked out several emissions and socio-economic pathways scenarios, but it is not yet clear which path will be taken. This means that projections can indeed go many different ways. However, general trends with varying severity can be identified already.

As climate impacts are beginning to unfold across Central Asia, projections indicate significant variation across the region. Indeed, climatic trends will be distributed unevenly, not only between states, but across sub-regions, altitude, and seasonality (Shaw et al., 2022). Increases in drought occurrence, heatwaves, and rainstorms can cause widespread crop failure (Shaw et al., 2022) Moreover, glaciers located below 3200 m are projected to decrease in size (Finaev et al., 2016).

The generally uneven distribution of impacts within the region with its distinct implications for agriculture, ecosystems, and human well-being, may lead to increased resentment between the five post-Soviet republics and increased tensions, particularly in the not clearly demarcated border regions. Remnants of distrust between governments are at times stifling efforts for increased cooperation. This is particularly true with regard to climatic risks. Hence, trust-building measures will be vital as the region moves forward in addressing the climate impacts that are already visible as well as those to come.

Disagreements over access to water, exacerbated by recurring droughts, can be the trigger that ignites violence and instability within and between countries, as is already the case on a lower level today. While all of this may sound very gloomy, it shouldn't paralyze us into inaction. Two vital toolboxes promise relief and potential opportunities through co-benefits. Mitigation and adaptation efforts can help to prevent some of the worst climate impacts as well as help us manage those that we are no longer able to stop. Designing Disaster Risk Reduction and Management measures and protocols will be vital to protect those that are most vulnerable. Existing multilateral institutions, such as the Centre for Emergency Situations and Disaster Risk Reduction, need to be supported and strengthened. The active involvement of women in this process will help to ensure not only representation and equality but also measures that take into account the needs of all household members, regardless of how strong or weak they are. (Kogutenko et al., 2022). Along the same line, water governance should increasingly include women on all levels of decision-making, from communal to state-level. To build up trust between Central Asian States, topics that are less political in the region, yet concern all, can be used as entry points for improved cooperation. While water is still a sensitive topic, the climate crisis can serve as an entry point for dialogue. This is already being done through science diplomacy and the facilitation of high-level dialogue between heads of state. The recent presen-

tation of a joint Regional Strategy for Adaptation to Climate Change at COP28 in Dubai is a case in point with respect to positive developments and increased cooperation (CAREC, 2023). Moreover, efforts such as the establishment of the Central Asian University for the Study of Environment and Climate Change-Green University on behalf of the government of Uzbekistan, demonstrate an increased commitment to confronting the threat of the climate crisis while also using it to bolster cooperation (Green University, 2023). However, the design of mitigation and adaptation interventions will be pivotal. Interventions must be peace-positive. Peacebuilding organizations in the region are making great strides to include a climate sensitivity lens. Implementing organization of mitigation and adaptation projects are however slow to include a conflict sensitivity perspective in their planning. Water-saving technologies such as drip irrigation, water harvesting and potentially agro-forestry and agroPV (shared use of lands for agriculture and energy generation through photovoltaic) may deliver co-benefits and will be key in addition to the much-needed restoration of irrigation systems in the region. However, the adaptation toolbox will have to be diverse and plentiful. In addition, viewing these interconnected challenges through the lens of Feminist Foreign Policy would also shed light on other vulnerable and marginalized groups, such as ethnic or religious minorities. Addressing these groups specifically and supporting civil society through targeted adaptation and mitigation finance should produce co-benefits, increasing resilience as well as improving social cohesion and thus stability in the region. The OSCE Ministerial Decision No. 3/21 - Strengthening co-operation to address the challenges caused by climate change- serves as a joint landmark declaration. Indeed, the OSCE already has projects running in Central Asia that try to mitigate some of the adverse security-relevant impacts of the climate crisis. The six-year project “Strengthening Responses to Security Risks from Climate Change in South-Eastern Europe, Eastern Europe, the South Caucasus and Central Asia” and the project “Women, Water Management and Conflict Prevention – Phase III” both demonstrate that the commitments stated in the ministerial decision from December 2021 is not mere lip service. If enacted in concert with other on-going and planned initiatives such as efforts on behalf of the Team Europe Initiative, the U.S. Government’s Central Asia Strategy or the German Green Central Asia Initiative, these projects will serve to make the region more resilient towards the impacts that can no longer be averted and thereby foster a climate for a positive peace in the region.

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