

POLICY BRIEF

#91, DECEMBER 2023

Economic-Environmental Interplay in Central Asia

by Dolapo Fakuade

EXECUTIVE SUMMARY

Changes in the climate are seen to have direct impacts on the environment and indirect impacts on the economic landscape of countries affected by it. Though measures are being taken globally to mitigate the direct environmental impacts of climate change, the policy challenge in Central Asia lies in formulating an agenda that addresses the interplay between the environmental and economic issues in the region. The Central Asian region experiences a range of challenges which impact its economic and environmental development as well as the pattern of security policies (Schuck et al., 2021). Countries in this region: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan have shared security concerns regarding the unstable situation in Afghanistan. Border disagreements and limited transportation links are some of the factors that frustrate economic policies and their successful implementation (Stronski, 2020). Low yield harvests due to rising costs of fertilizer are also likely to lead to inflation, which would aggravate the vicious cycle of decreased affordability of food, commodities and resources needed to generate income (Rodell et al., 2022). It is therefore pertinent for this policy brief to explain the factors that exacerbate the high commodity prices and food shortages which further pose a risk to food and water security in the region. Such ongoing challenges and the need for policy change have motivated the writing of this policy brief, which introduces and examines the policy challenges in Central Asia with a focus on the economic and environmental issues collectively encountered by countries in this region. It argues for policy changes that address the challenges associated with the interplay between economic and environmental issues that may increase the vulnerability of the region to foreseeable climate change consequences. Recommendations also include encouraging a review of current policies to accommodate new trends and patterns that have appeared as a result of the global pandemic.

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The OSCE Academy's Policy Briefs became possible with financial support from the Norwegian Ministry of Foreign Affairs via the Academy's Cooperation with the Norwegian Institute of International Affairs.

Introduction and Policy Challenges

1. Environmental Contexts and Climate-Related Hazards

Central Asia is characterised by semi-arid to arid conditions (Blondin, 2019). The environmental effects of climate change and the consequences of its associated hazards are pertinent issues to Central Asian development and security. Existing policy challenges lie in the difficulties faced by mountainous communities in the Pamir and Tien Shan highlands in Tajikistan and Kyrgyzstan in particular, and their ability to deal with environmental issues that affect their livelihoods. In the aforementioned areas, climate change is seen to have serious impacts on communities resulting from the relationship between the impacts of glaciers and snow at high altitudes and their dichotomous nature (Xenarios et al., 2019). Historically, glaciers and snow provide a vital water resource for those nearby as well as downstream. On the other hand, excessive melting due to increasing temperatures causes risk of flooding and avalanches as layers of snow subsequently melt. Existing policy is limited as it falls short in aligning mitigation and response measures for these areas. Without addressing this policy challenge, the situation will worsen, generating other forms of crisis, economic unrest, or conflict resulting from economic factors.

It is important to address the ongoing challenges because climate predictions indicate that there will be a decrease in precipitation as well as an increase in evapotranspiration, meaning there will be fewer water resources available to the communities who utilize them now (Blondin, 2019). Another cascading effect of unaddressed policy challenge is increased environmental risks. For example, increased melting of glaciers and the potential for fluvial flooding and glacial lake outbursts means there is further risk of landslides and mudflows (Wadhawan et al., 2020). As witnessed in other Asian countries, the increasing likelihood of

landslide and mudflow risks is also due to earthquakes, which further aggravates the situation, adding more pressures to land use and the management of arable land for agriculture (Li et al., 2021). The direct impacts of these hazards and the risk of drought have further implications for food production and food security. Furthermore, water is connected to additional risks associated with environmental development and security due to the direct relationship between environmental factors and human activities that adversely impact the environment. The increasing frequency of hazards and the subsequent limitations on food production (and therefore, decreased food security) demonstrates the interplay between environmental issues and the economic issues they exacerbate, both locally and nationally.

2. Natural Capital

Natural capital is being depleted through the extraction of oil and gas. Such extractions encourage environmental degradation, deplete water sources (such as the Aral Sea), and limit the potential for carbon sequestration (Vakulchuk et al., 2023). Transboundary water resources are also threatened by the region's susceptibility to desertification. Approximately 60% of the water in Central Asia is used in the agricultural sector (Saidmamatov et al., 2023). Along with decreasing water supply, the region may experience the inability to use some water sources due to potential contamination caused by other hazards, pollution, degradation, or desertification (Radjabov, 2020). A direct consequence of the decreasing water supply, especially for the agricultural sector, is the hindrance it causes for harvest and production. The agricultural sector plays a greater role in the GDP per capita of certain countries in Central Asia, as depicted by Table 1. It is necessary to note that, whilst the GDP per capita figures for each country have all increased in 2023, the figures from 2019 are used here to allow a direct comparison to the most recent figures for agricultural percentage of GDP per capita.

Table 1: GDP per capita based on the agricultural sector in Central Asia (Adapted from Suleimenov, 2021 and IMF, 2023).

Country	GDP per capita, 2019 (US Dollar)	Agricultural % of GDP per capita, 2019
Kazakhstan	9.75 thousand	4.4
Turkmenistan	1.81 thousand	11.0
Kyrgyzstan	1.47 thousand	12.1
Tajikistan	8.92 thousand	19.2
Uzbekistan	893.32	25.5

Table 1 depicts the importance of agricultural land in Tajikistan and Uzbekistan in particular. As such, changes to this arable land, be that due to water supply changes, degradation, desertification or hazard (landslide, earthquake etc.) occurrence, pose a greater threat to the natural capital of the aforementioned countries. In Kazakhstan, Turkmenistan and Kyrgyzstan, there is a lesser emphasis on agriculture to support the economy, and this therefore allows for greater redistribution of resources within the respective societies. Therefore, agriculture in Tajikistan and Uzbekistan is of greater socio-economic importance compared to other Central Asian countries such as Kazakhstan, Kyrgyzstan and Turkmenistan. Furthermore, phenomena such as hazards and price increases in agricultural commodities have a lesser impact on the respective agricultural industries of these latter countries compared to those of Tajikistan and Uzbekistan.

Further environmental pressures also include increasing urban pollution through intensive production and extraction practices. Thus, a combination of increasing natural hazards (hydrological and climatological) suggest that water and food scarcity might encourage the migration of people to more favourable conditions (Blondin, 2019). In turn, this will limit the region's economic development and security (Schuck et al., 2021), the two factors required for growth and stability in a region that could benefit from resilience.

3. Economic Contexts

The term “informal economy” is used in the Central Asia to indicate that those employed

in such sectors are not required to pay taxes, and therefore do not benefit from government support in times of crisis (Radjabov, 2020). As noted during the recent global (COVID-19) pandemic, governments struggled to support and were not able to provide financial resources to those involved in informal employment during the pandemic, further exacerbating the economic issues faced in the region (Radjabov, 2020; Schuck et al., 2021). Such a scenario, should it continue or recur in future, would generate a wide variety of developmental and security concerns ranging from regional, national, and international in character. Therefore, in highlighting the factors causing policy challenges in Central Asia, a recognition of the complex relationship between environmental and economic issues with hazardous events as the point of departure indicates that policy change is appropriate.

Policy Change

Different policy options can be explored in order to address the economic and environmental impacts experienced by this region. The cascading effects of these issues on security in Central Asia and for the OSCE area emphasise their importance and the need for policy change or review to address them. In the immediate term, policy should focus on addressing the economic landscape to alleviate economic issues. It is important to note that each option will have varying relevance, applicability, and implementation requirements due to the differing abilities to introduce and enforce such policies. Whilst a “one size fits all” approach is ideal, each country in Central

Asia will need to consider their abilities and willingness to adopt such recommendations in order to improve their situations. Tajikistan and Uzbekistan in particular are recommended to consider each policy change and further recommendations as Table 1 highlights their overt reliance on the role of agriculture within the country's GDP per capita.

1. Digitalising the Economy

First, digitalisation of the economy is pertinent in a globalised world. Pursuing a policy that favours digitalisation where prices are competitive would regulate rising costs and the prices of essential commodities. Digitalisation creates more competition around selling prices as consumers can order elsewhere online for the same product at a lower cost (Li et al., 2020). Such a measure is favourable in the immediate term to alleviate the economic stressors in the region and to encourage more transparent economic activities among countries in the region and beyond. Digitalised economies welcome improvements to education and developed skillsets amongst workers, as well as increased employment opportunities (Degryse, 2016). A digitalised economy would also mean that businesses would have to compete with costs in order to create revenue and therefore could not take advantage of a lack of access via the internet. They also bring about an increase in consumer choice, which allows for greater opportunities for foreign direct investment (FDI) and general investment (Arslan et al., 2021). Additionally, digitalising the economy will allow for improvements and new developments to be made to agricultural practices, which is emphasised in the second recommended policy change. Furthermore, digital commodities, such as computer software, film/entertainment and music prevent post-transaction costs such as delivery fees. The prevention of such post-transaction costs allows for greater use of disposable income for consumers and greater growth in the economy (Li et al., 2020; Radjabov, 2020).

The policy agenda for digitalisation should, however, be set through strategic foresight to ensure it is not implemented to the detriment

of local economy. Economists argue that an effective way to counter some of the economic issues and challenges in the Central Asian region is through countrywide cash distribution (Tleuken et al., 2022). This is where certain amounts of cash are provided to everyone, including the rich, to encourage redistributive effects (Radjabov, 2020). Doing this increases people's purchasing power and can aid in restarting the economy. However, this plan would not work if those who receive cash choose to save it rather than spend (Radjabov, 2020), which is a likely scenario. Thus, while this position by economists is acknowledged, it may not be as effective as the digitalization policy proposed.

2. Agricultural Investment

Closely linked to the proposed economic policy (digitalisation) is another that can immediately improve food security. A policy of agricultural investment is proposed to improve access to fertilisers while simultaneously improving investment in agricultural facilities that are climate resilient. As encouraged by the International Monetary Fund (IMF), investment in agricultural facilities is necessary in the era of climate change and its heightened consequences. This policy is crucial to counter food security threats and also to limit the impacts associated with hydrological and climatological disasters such as flooding and drought (IMF, 2022). While the agricultural investment policy may be viewed as an economic policy, it may also be viewed and implemented as part of a wider environmental policy agenda. In the immediate term, an environmental policy focused on smart water management strategies needs to be implemented in the region. This policy is proposed to bring balance to the circular economy in Central Asia by ensuring that the reliance on specific water sources that are becoming depleted is decreased. For instance, improvements to irrigation practices would limit water wastage. Beyond this, it is further recommended that a smart water management policy should include strategies that encourage the adoption of developing crop types that can withstand drought (Saidmamatov et al., 2023), and that thrive with limited water. This policy

does not discourage water usage nor prevent it, rather it serves as a monitoring and regulatory strategy for water use management without compromising production in the agriculture sector. Less strain on water as a resource means that the government and communities in Central Asia can focus on policy measures that can tackle some of the environmental issues that impact development and security in the region.

Enhancements made to agricultural technologies (in conjunction with digitalising the economy) will improve agricultural productivity and decrease food prices. Understanding the concept of a “Green Revolution” (GR) will promote improvements made to agricultural sectors and subsequently alleviate food insecurity, as well as amplify regional and/or international trade, in turn improving the GDP per capita of the country (Pingali, 2012). GRs include technologies and intellectual understandings of how to promote shorter growing periods of crops, use fertilisers and irrigation systems, and know the best crops to grow depending on the environmental conditions (crop rotation is also included). Without any GRs occurring, global food prices would have been 35-65% higher, which emphasises the potential contribution that Central Asian countries could have to global food production as well as prices (Pingali, 2012). This will also diversify and expand Central Asian economies and decrease the overt reliance on their current narrow base of oil, gold, natural gas, cotton, and aluminium. This policy does not insist on GRs occurring, but more on using some of the learnings from the successes of GRs across the globe and

implementing relevant and applicable aspects based on the contexts and capabilities within each Central Asian country, especially in those which rely heavily on agricultural production (Tajikistan and Uzbekistan).

3. Climate Awareness

Central to the environmental issues is the need for better awareness of the direct and cascading effects of changes in the climate on the region. Though the World Bank is supporting the Central Asia region through its CLIENT Program, which aims to alleviate some of the economic issues, a change or review is proposed. A policy is proposed to revise the pillars used in the CLIENT Program to be more lucid on the environmental factors. With the established link between environmental and economic issues in the region due to the direct and indirect impacts of climate change, a fourth pillar should be included in the CLIENT Program to capture the digitalisation policy agenda, and the first pillar should be revised to include environmental policies for agricultural investment and smart water management strategies. The CLIENT Program pillars should also include an economic policy agenda, such as digitalisation, as one of the strategies through which the circular economy mentioned in the CLIENT pillars would be implemented. Figure 1 shows the World Bank pillars with the addition of the uncoloured fourth pillar as an extension of the Program included to incorporate the environmental and economic challenges and policy changes addressed in this brief.

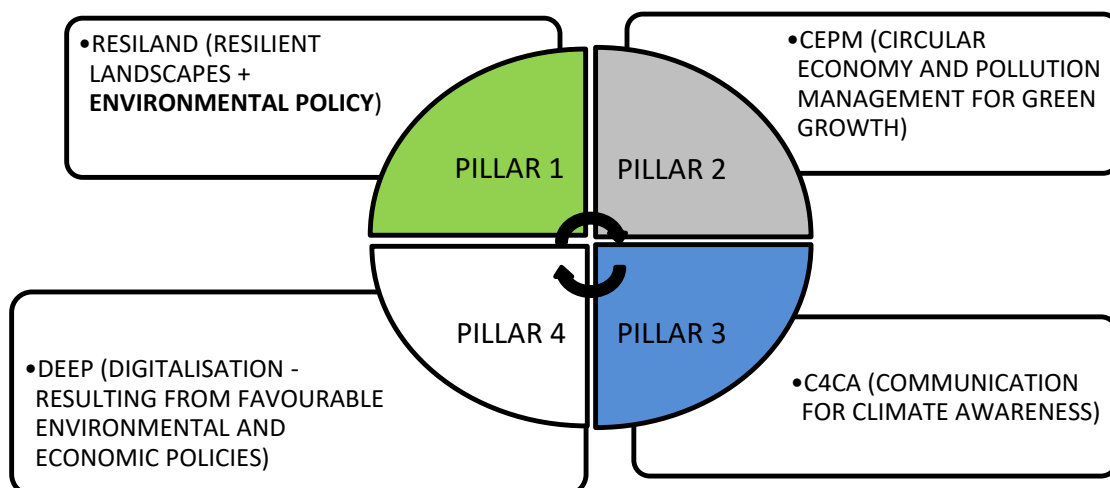


Figure 1: *The CLIENT Program Pillars for Central Asia Revisited (Adapted from World Bank, 2021).*

Revisiting an existing program already driven and funded by the World Bank in the region is important to ensure buy-in from governments and communities for the policies proposed in this brief. Embedding the policy change proposed in an existing relevant project may limit the impact of environmental and economic interplays and concerns in the region. Nonetheless, further recommendations are still required.

Recommendations

This policy brief has revealed some of the underlying challenges in Central Asia and the interplay between environmental and economic issues. Five main recommendations are provided as a result:

- Adopt Adaptive Resilience Strategies. The direct impact of environmental issues on the economies in the region means that policymakers should focus on resilience as an adaptive strategy for climate related risks, hazards and disasters in order to enable effective mitigation, preparedness, response, and recovery to such adverse events and lessen the impacts on local communities (Bossuyt, 2023). Private sector collaboration is encouraged to ensure that an adaptive strategy is focused on mainstreaming climate and environmental solutions (Solutions et al., 2021).
- Improve Environmental Auditing. Environmental auditing in rural areas should also be incorporated into policy to ensure compliance. Since 2009, there have been a number of community-based organisations that have emerged to oversee the management of grasslands in order to improve resilience (Bossuyt, 2023). This has therefore heightened the sense of community and elevated cooperation and willingness to engage with practices to protect local communities and their assets. However, limited or no auditing means that motivation may dwindle, sustainability of measures may not be guaranteed, and there is a lack of accountability.
- Increase Public Climate Education. The knowledge gap witnessed in the region is exemplified by a lack of awareness due to a lack of education and a lesser focus on the impacts of climate crisis. For an adaptive policy to be successful, the knowledge gap around environmental issues and economic consequences in communities needs to be addressed as identified by Blondin (2019). Local knowledge across communities in the region need to improve with respect to climate education. Such education will be improved with the digitalisation of the economy, as there will be greater resources available to understand climate and its environmental and economic impacts. This will address the gaps in knowledge about climate change as well as effective agricultural and economic practices.

- **Increase Disaster Impact Awareness.** Increased awareness of the impacts of climatological and hydrological disasters is needed to mitigate and subsequently address the interplay between the economic and environmental issues experienced in the region. It is impossible to achieve long-lasting change, especially behavioural change, when people are unaware of both the direct and indirect consequences of climate change. Therefore, awareness policies that lead to application of mitigation, adaptation, and preparedness strategies to lessen or inhibit the impacts of economic and environmental effects in the region, and cascading implications for the OSCE, are recommended. The challenges addressed in this document, and limited respite in the foreseeable future, further justify the need for the proposed policy changes and recommendations.
- **Increased Interregional Connectivity.** Connectivity and engagement with countries outside of the Central Asian region should be increased. In the past 30 years, there have been dramatic improvements to connectivity, as seen by pipelines connecting Kazakhstan's oil producing regions to the Black Sea, the Mediterranean, and China, as well as the Turkmenistan-Uzbekistan-Kazakhstan-China gas pipeline. Roads and airports have been developed, but actual engaged connectivity has not increased (Pomfret, 2021). Improving relations with other countries, especially those with a stronger and more stable economy, will increase connectivity and therefore attract more foreign investment. This also relies upon other recommendations being implemented in order to improve the profile of Central Asia as well as its attractiveness for investment from prospective countries (namely those in the West).

Conclusion

In order to tackle some of the environmental issues and challenges that may impact the development and security of Central Asian countries, it is important to consider and adopt the five recommendations proposed in this brief. These recommendations, though policy related, should consider mechanisms for capturing local knowledge to ensure that measures are appropriate for each community within the region (Blondin, 2019). The knowledge gap identified revolves around the environmental issues experienced by communities exemplified by a lack of awareness, due to a lack of education, and should be improved. Awareness campaigns should be joint efforts between community groups and stakeholders in the economic and environmental sectors to ensure that the knowledge of impacts of climatological and hydrological hazards is increased. Such knowledge prepares communities and increases the resilience of the region to future climate change-related environmental and economic consequences.

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