Climate Change: water – climate issues in Central Asia

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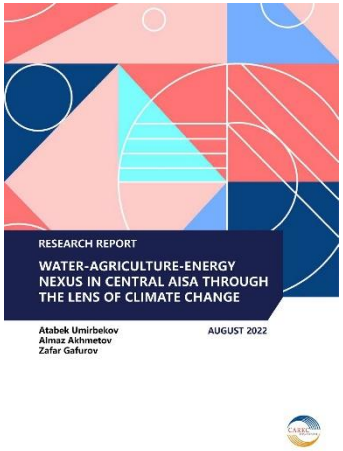
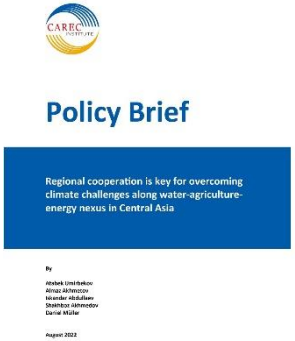
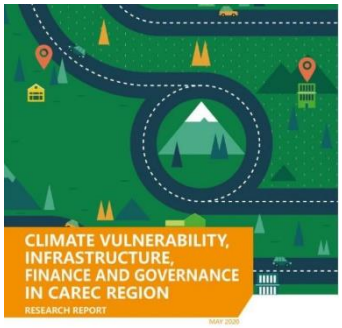
FINDINGS ARE BASED ON:

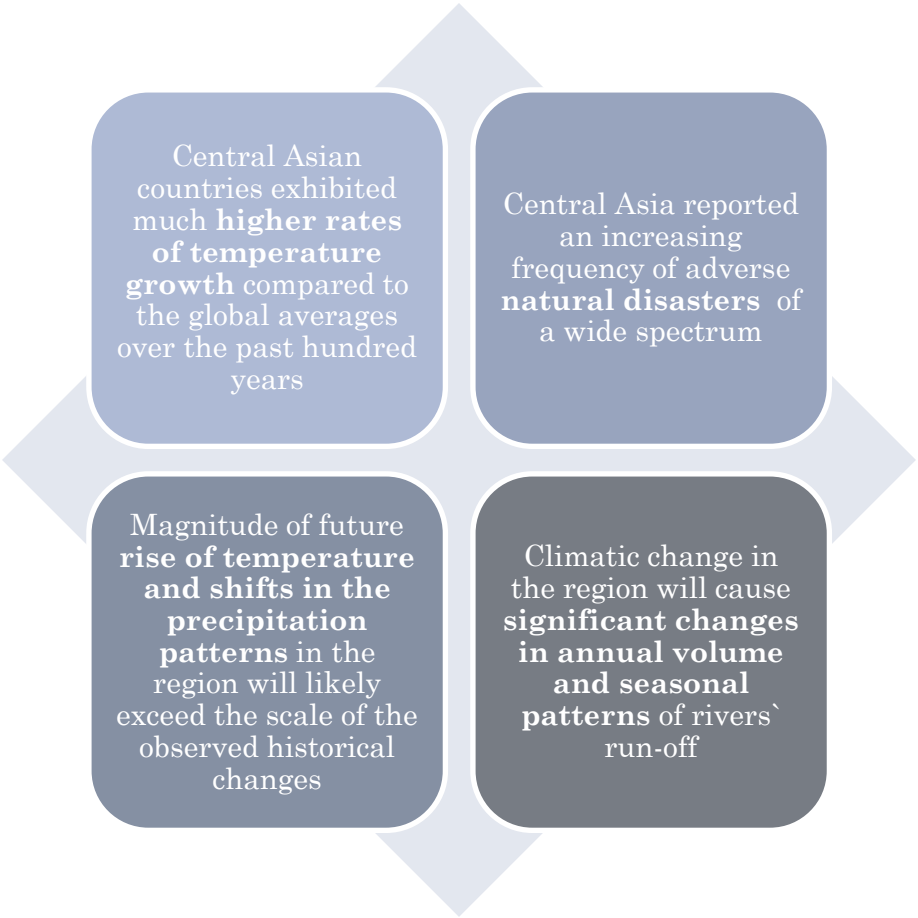
- **Research** since 2019-2023
- Series of **Policy dialogues** on climate-water and energy (CAREC Institute E-Learning-Learn More with Online Courses from CAREC Institute)
- **Think-Tank and Fellowship** Grant Programmes
- **Capacity Building** and Training series



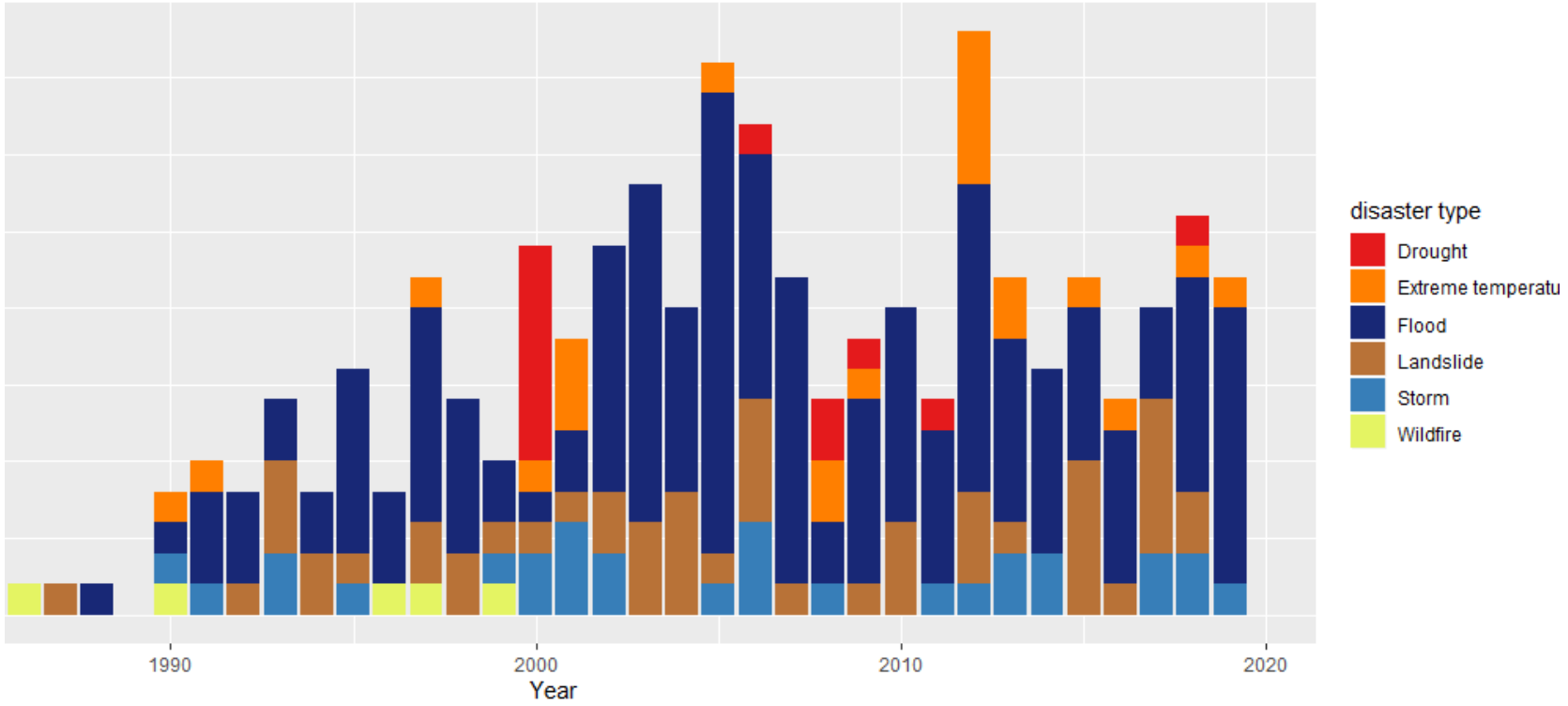




Central Asia: Climate Challenges

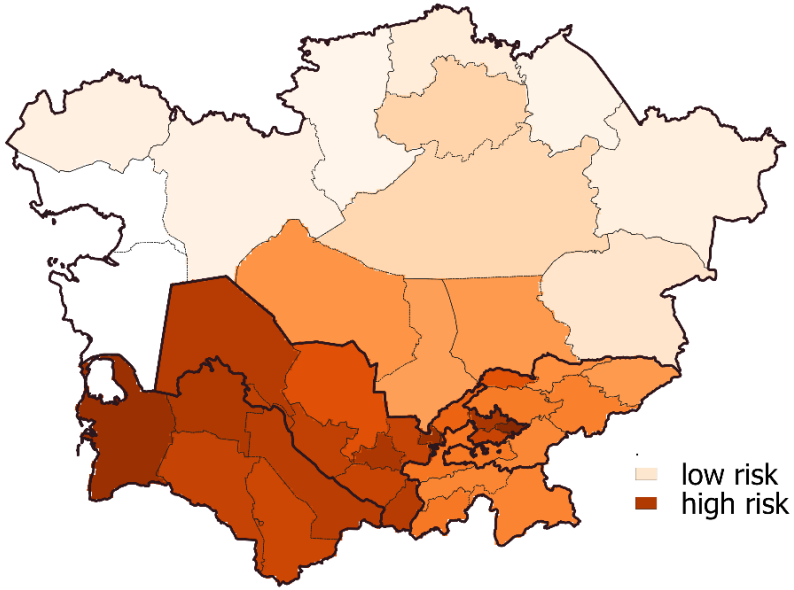


Central Asia: Climate Challenges

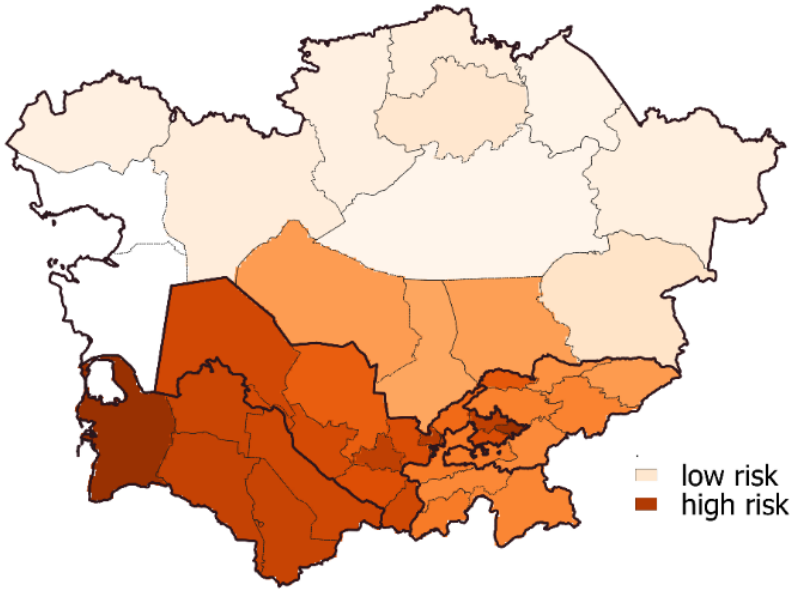


Source: based on EM-DAT 2019 database

Central Asia: Climate Challenges / Vulnerabilities



A. Optimistic



B. Pessimistic

- CAREC Institute.2021

Central Asia: Climate Vulnerability

Countries	Exposure	Sensitivity	Adaptive capacity	Index
Afghanistan	1.20	0.48	0.14	4,14
Azerbaijan	1.40	0.40	0.70	0.80
China	1.00	0.14	0.88	0.16
Georgia	1.40	0.06	0.81	0.11
Kazakhstan	1.00	0.21	1.31	0.16
Kyrgyzstan	1.00	0.22	0.87	0.25
Mongolia	0.83	0.04	0.39	0.08
Pakistan	1.00	0.72	0.27	2.65
Tajikistan	1.00	0.31	0.67	0.47
Turkmenistan	1.20	0.90	0.31	3.52
Uzbekistan	1.20	0.87	0.28	3.71

- CAREC Institute.2021

NATIONALLY DETERMINED CONTRIBUTIONS (NDC'S)

Indicators	Afghanistan	Kazakhstan	Kyrgyzstan	Tajikistan	Turkmenistan	Uzbekistan
Overall target	13.6% reduction in GHG emissions by 2030 compared to a business as usual (BAU- 2005- conditional on external support	15%-25% reduction in GHG emissions by 31 December 2030 compared to the base year (1990)	Unconditionally 16.63% by 2025 and by 15.97% by 2030, under the business-as-usual scenario. International support - 2025 by 36.61% and by 2030 by 43.62%, ()	Not to exceed 60-70% of greenhouse gas (GHG) emissions as of 1990, which is the reference year, by 2030	2030 under favorable economic circumstances could be a long-term goal of low-carbon development, providing gradual reduction of GHG emissions in Turkmenistan and compatible with global objective - not exceeding the 2-degree rise in temperature levels.	Reduce by 2030 specific greenhouse gas emissions per unit of GDP by 35% from the level of 2010.
Sectors	Energy, natural resource management, agriculture, waste management and mining	Energy, Agriculture, Waste, Land Use, Land-Use Change and Forestry	Energy, Agriculture, Forestry and Other Land Uses sector	Energy, Industrial processes and Product Us, Agriculture, Forestry and other Land Use, Waste	Energy, Industrial processes, Agriculture, Waste	Energy, Industrial Processes and Product Use, Agriculture; Forestry and Other Land Use, Waste
Adaptation measures	addressing **environmental challenges, disaster risk reduction, food security**, water security, protection of forest and rangelands, and biodiversity conservation	Waste management, modernization of housing and communal services, **development of sustainable transport, conservation of ecosystems** and enhancement of forest cover	Reduce economic losses **from climate change impacts and cover the most vulnerable sectors**: Water Resources and Agriculture, Energy, Emergencies , Public Health, Forest and Biodiversity, as well as new intersectoral sections: Climate-Resilient Areas and Green Cities	Promoting water-energy-land interaction with **renewable energy** sources equipping large enterprises with **modern energy saving and digital technologies** Reducing the risk of water-related disasters; efficient water purification and water reuse. Achievement of **economically efficient and environmentally sustainable management** of water resources	Adaptation measures for sectors of **water, agriculture, soil and land resources**, **ecosystems**	Improve the use of **water resources and prevent further salinization** and land degradation, **crop diversification** (expansion of perennial tree plantations and perennial grasses), **Raise awareness** and improve access to information on climate change for all population groups

NATIONALLY DETERMINED CONTRIBUTIONS (NDCS)

Environmental challenges, disaster risk reduction, food security

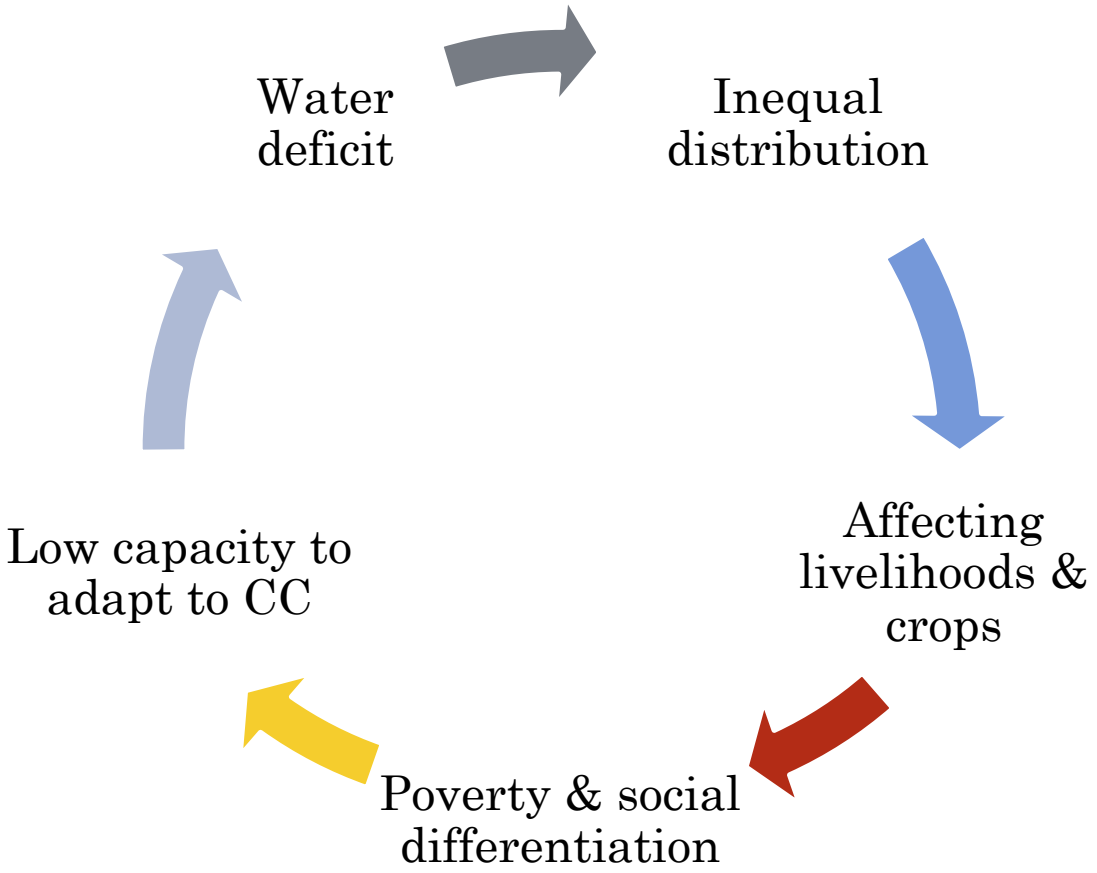
Development of **sustainable transport**, conservation of ecosystems

Climate change impacts and cover the most **vulnerable sectors** economically efficient and environmentally sustainable management of water resources

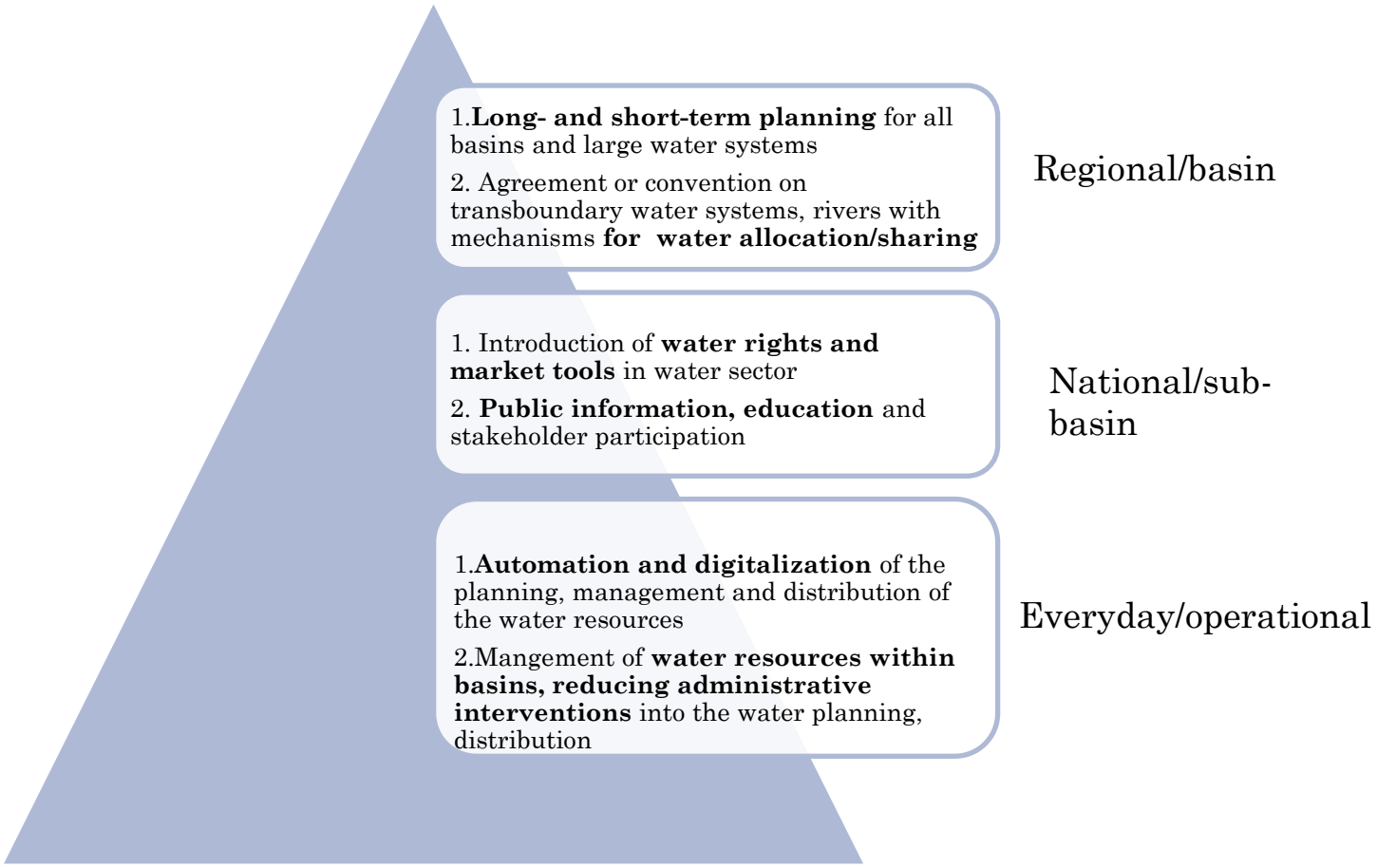
Water, agriculture, soil and land resources, ecosystems

Water resources and prevent further **salinization and land degradation**, crop diversification

Climate Challenge: Vicious circle (water)



Climate Change- Multi Layer interventions (example water sector)



CLIMATE CHANGE: OUTLOOK

Climatic change-economy

- Economic losses in Central Asian countries- highest in agricultural sector
- Prioritize investment strategies in the future.
- Suitable mitigation and adaptation mechanisms -reduce environmental externalities, vulnerability of population, especially in rural areas

Suitable adaptation and mitigation mechanisms

- increase water use efficiency
- establishment of early warning systems for climate related extreme events
- implementation of no-till technologies and crop diversification, afforestation, improved crop management
- regional cooperation is a must for effective adaptation

Financial tools and mechanisms:

- credit, insurance, subsidies
- carbon market and taxation
- suitable financial mechanisms- yet underdeveloped in the region, except few cases and countries

POLICY MESSAGES (WATER)

- ✓ Introduce **stronger water rights and water distribution principles** within regional and national legal documents

- ✓ Focus on preventing of major water risk under climate change in Central Asia- emergence of **higher demand and reduced water availability** which will lead to the **regular water shortages**

- ✓ **Introduce regular, long-term planning of water resources** for basins, sub-basins under different climate scenarios would be most important tool to reduce impact of the climate change

- ✓ Prepare **regularly updated local action plans** are produced for each sensitive basins, sub-basins in Central Asia to cope with climate change risks in local areas

- ✓ Improve quality and density of **climate and water monitoring systems in** the crucial, transboundary systems

- ✓ **Build up information openness and digital means** as tools for major analysis, communication on climate related risk in water sector

THANK YOU

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