

ВОДА КАК ДВИЖУЩАЯ СИЛА УСТОЙЧИВОГО ВОССТАНОВЛЕНИЯ: ДОРОЖНАЯ КАРТА ДЛЯ ЦЕНТРАЛЬНОЙ АЗИИ

Часть I.

Определение основных структурных и институциональных реформ для достижения экономической и финансовой устойчивости в водном секторе

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Мартон Краснай

научный директор Центра исследований Центральной Азии
Университета Корвинуса, Будапешт
e-mail: marton.krasznai@uni-corvinus.hu

Аннотация. В статье резюмируются ключевые моменты обсуждений лиц принимающих решения, экспертов и ученых из Средней Азии а также международных экспертов по итогам двух вебинаров, проведенных в рамках Программы «Вода как движущая сила устойчивого восстановления: экономические, институциональные и стратегические аспекты управления водными ресурсами в Центральной Азии». Связанный с COVID-19 кризис, поглощающий финансовые ресурсы и возможности, указал на важность проведения давно назревших экономических реформ. Частичные реформы с упором на сегменты водного сектора важны, однако водный сектор является неотъемлемой частью экономики в целом. Ускорение структурных и институциональных реформ экономики позволит водному сектору достичь экономической и финансовой устойчивости.

Казахстан, благодаря высокому уровню экономического развития, вложил значительные средства в техническое обслуживание и модернизацию своей водной инфраструктуры и провел ряд важных реформ. На протяжении многих лет страна также возглавляла усилия по укреплению регионального сотрудничества. Улучшение регионального сотрудничества в области водных ресурсов позволит улуч-

шить доступ к международному экологическому и климатическому финансированию, а также привлечет государственные и частные инвестиции.

Продолжение межсекторального и межстранового диалога по вопросам улучшения управления водными ресурсами и укреплению регионального сотрудничества по водным ресурсам в Центральной Азии будет способствовать совместным усилиям по подготовке региона к обостряющимся последствиям изменения климата.

Ключевые слова: водный сектор, изменение климата, COVID-19, восстановление, экономическая реформа, региональное сотрудничество

СУ ТҰРАҚТЫ ДАМУ ҚАЛПЫНА КЕЛТІРУ КҮШ РЕТІНДЕ: ОРТА АЗИЯҒА АРНАЛҒАН ЖОЛ КАРТАСЫ

I бөлім. Су секторының экономикалық және қаржылық тұрақтылығына қол жеткізу үшін қажетті құрылымдық және институционалдық реформалар

Мартон Краснай

Будапешт, Корвинус Университеті, Орта Азияны зерттеу орталығының ғылыми директоры, электрондық пошта: marton.krasznai@uni-corvinus.hu

Аңдатпа. Мақалада Орталық Азиядан келген шешім қабылдаушылар, сарапшылар мен ғалымдар, сондай-ақ халықаралық сарапшылар арасындағы «Су тұрақты қалпына келтірудің драйвері: Орталық Азиядағы су ресурстарын басқарудың экономикалық, институционалдық және стратегиялық аспектілері» бағдарламасы шеңберінде өткізілген екі вебинардың қорытындылары бойынша пікірталастардың түйіндері жинақталған.

Қаржы ресурстары мен мүмкіндіктерін тұтынатын COVID-19 дағдарысы экономикалық реформаларының қажеттілігін айқындады. Су секторының экономиканың ажырамас бөлігі болып табылады. Су секторының сегменттеріне бағытталған ішінара реформалар маңызды. Бірақ жалпы экономиканың құрылымдық және институционалдық реформаларын жеделдету су секторына экономикалық және қаржылық тұрақтылыққа қол жеткізуге мүмкіндік береді.

Қазақстан өзінің экономикалық дамуының жоғары деңгейіне байланысты өзінің су инфрақұрылымын ұстауға және жаңартуға көп қаражат жұмсады және бірқатар маңызды реформалар жүргізді. Осы жылдар ішінде ел аймақтық ынтымақтастықты нығайтуға күш салған. Су ресурстары бойынша аймақтық ынтымақтастықтың жақсаруы халықаралық экологиялық және климаттық қаржыландыруға қол жетімділікті жақсартуға, сондай-ақ мемлекеттік және жеке инвестицияларды тартуға мүмкіндік береді.

Су ресурстарын басқаруды жетілдіру және Орта Азиядағы су ресурстары бойынша аймақтық ынтымақтастықты нығайту бойынша салааралық және еларалық диалогты жалғастыру аймақты климаттың өзгеруінің нашарлау әсеріне дайындау бойынша бірлескен күш-жігерге ықпал етеді.

Түйінді сөздер: су секторы, климаттың өзгеруі, COVID-19, қалпына келтіру, экономикалық реформа, аймақтық ынтымақтастық

WATER AS A DRIVER OF SUSTAINABLE RECOVERY: A ROAD MAP FOR CENTRAL ASIA

Part I. Essential structural and institutional reforms to achieve economic and financial sustainability of the water sector

Marton Krasznai

Scientific Director, Center for Central Asia Research of Corvinus University, Budapest, e-mail: marton.krasznai@uni-corvinus.hu

Annotation. The article summarizes discussions by Central Asian and international decision makers, experts and researchers during two webinars held in the framework of the Programme “Water as a driver of sustainable recovery: economic, institutional and strategic aspects of water resources management in Central Asia”. The economic crisis caused by the covid-19 pandemic, absorbing scarce resources and capacities, highlighted the importance of implementing long overdue economic reforms. Piecemeal reforms focusing on segments of the water sector are important but the water sector is an integral part of the economy as a whole. Accelerating structural and institutional reforms of the economy would allow the water sector to achieve economic and financial sustainability.

Kazakhstan, thanks to its high level of economic development, made significant investments in the maintenance and modernization of its water infrastructure and implemented a series of important reforms. It has for many years also spearheaded efforts to strengthen regional cooperation. Improved regional cooperation on water would allow better access to international green and climate finance and attract institutional and private investment too.

Continuation of cross-sector and cross-country dialogue on improved water resources management and strengthened regional cooperation on water in Central Asia would facilitate joint efforts to prepare the region for the increasingly dramatic effects of climate change.

Key words: *water sector, climate change, covid-19, recovery, economic reform, regional cooperation*

Introduction

Water is an important driver of socio-economic development of Central Asian countries. Some 8.4 million hectares of irrigated agriculture uses 90 % of available surface water. The water sector contributes around 20 percent to the GDP of the region and it employs a large percentage of the total population. Upstream countries depend on hydropower for over 90% of their electricity consumption. The table 1 below demonstrates the importance of the water sector for the economies of Central Asian countries:

Access to water is considered to be a human right and is a key precondition of individual, household and economic development. Access to water, food and sanitation are the most important development aspects in Central Asia.

Table 1. Water availability and use profile per country

	Internal renewable surface water per capita	Irrigation water as % of renewable resources	Percentage of population with access to improved water source	Agriculture contribution to GDP	Employment in agriculture	Storage capacity ²⁾ (surface water)	Urbanization
	(m3/cap/yr)	(%)	(%)	(%)	(%)	(million m3)	(%)
Kazakhstan	3,722	13	93	5	42	12,000	53
Kyrgyz Republic	8,385	30	90	15	40	20,260	36
Tajikistan	7,650	48	74	22	54	42,764	27
Turkmenistan	265	106	74	11	30	3,674	50
Uzbekistan	531	103	87	20	43	21,987	36

Building a community of practice to resolve problems of the water sector

At the Stockholm World Water Week in August 2019 and at a workshop organized on the margins of the Budapest Water Summit in October 2019, Central Asian representatives called for a “more focused, structured and result-oriented process” to achieve rational and efficient water resources management in the Aral Sea Basin. The Blue Peace Central Asia Initiative of the Swiss Development Cooperation, the Stockholm International Water Institute, the Center for Central Asia Research of Corvinus University, Budapest and the Regional Environmental Center for Central Asia joined forces to design and support such a process. Four webinars were organized between 3 November 2020 and 20 May 2021 as part of the Process “Water as a driver of sustainable recovery: economic, institutional and strategic aspects of water resources management”. (2)

This paper outlines the main conclusions of the first two webinars, one on “Post-covid-19 recovery strategies: putting the water sector of Central Asia on an economically and financially sustainable path” and the second on “Identifying essential structural and institutional reforms to achieve economic and financial sustainability of the water sector”. It explains why continuation of structural and institutional reforms of the whole economy a key precondition is of achieving economic and financial sustainability of the water sector.

Another important finding of intensive discussions during the webinars was that national solutions alone are insufficient to effectively cope with the tremendous challenges facing the water sector. Slow progress in strengthening regional cooperation on water is aggravating existing problems. The webinars empha-

sized the importance and urgency of translating the emerging political will to cooperate on water into concrete action. The second part of this paper introduces the outcomes of the third and fourth webinars of the Programme. They focused on the development of an economic basis for regional cooperation on water with a smart regional investment concept at its core, and the need for launching a structured regional dialogue on strategic aspects of water resources management in Central Asia.

Methodology

The water sector, for the purposes of this study, includes all sectors of the economy directly dependent on water: irrigated agriculture, hydropower, communal and industrial water supply. The study takes fully into account that economic- and environmental sustainability of the sector are inextricably linked.

The study treats the water sector as an integral part of the economies of individual countries and a fundamental component of any regional economic cooperation framework. It builds on the consensus among participants of the webinars that structural and institutional reforms of the economy as a whole would help increase economic sustainability of the water sector.

Structural reforms include “Policy and institutional reforms ... required to enhance market efficiency and improved conditions for growth and equity. Such reforms typically entail short-run costs – sometimes foreign exchange (or budgetary) needs and/or reduction in consumption for particular economic groups. The benefits of these reforms are in the medium and long run, usually in the form of higher growth and improved efficiency. Examples of such structural reforms include measures that (i) maintain low inflation and manageable fiscal and current account balances, (ii) promote competition and trade openness; (iii) improve a country’s business environment by enforcing contracts and rule of law, enhancing the quality of public bureaucracy, and minimizing corruption; (iv) ensure the safety and soundness of financial institutions; (v) enhance labor productivity by providing infrastructure capital; and (vi) promote equality of opportunity to access public services.(3)

The concept of institution is used in this study in two meanings. When discussing reforms of the economy, institutions comprise informal institutions (customs, culture, religion, codes of conduct, etc.) and formal institutions: legislative frameworks, policies and organizations. Examples of formal institutions are constitutions, contracts and contract enforcement, protection of property rights, government bureaucracies and financial markets. Institutional reforms are primarily designed to change formal institutions. (4)

When addressing the legal and institutional frameworks for regional cooperation, the concept of institutions means geopolitical entities that are established by politically or legally binding agreements, signed by states to foster regional cooperation (e.g. IFAS and its institutions, ICWC and ICSD).

Results and discussion

The consequences of 30 years of underinvestment

Participants of both webinars pointed out that in the Soviet period a stable economic basis guaranteed the sustainability of the water sector. In the transition period that started in 1991 Central Asian countries suffered a dramatic drop of GDP: production in all sectors of the economy declined. Growth picked up at the end of the decade and Central Asian countries developed new production capacities and new economic links. Despite the rapid economic recovery, the water sector has never regained economic sustainability. At present only 40 - 60% of the real investment needs of the sector are covered, overwhelmingly by the state budget. (5) The main reason for the high losses (at places up to 50 %) during storage and transport of water is the dilapidated state of water infrastructure. The other factor contributing to low water productivity is the inefficient irrigation methods applied in the vast majority of the agricultural area. According to a World Bank study, if the present rate of investment in infrastructure is maintained, big parts of the irrigation system of Central Asia may collapse completely in about 40 years. (6) The number of trained staff in irrigated agriculture has been reduced to one fifth of the 1991 level. Water fees are insufficient to cover costs and are not collected systematically. As a result, neither the water management organizations, nor the water users are interested in water saving. Research and development has been especially hard hit: the budget for R and D is one tenth of the 1991 level. Central Asian countries spend about half as much on R and D out of the overall resources available for the water sector as the countries of Sub-Saharan Africa. As a result, they lack capacity for project management, quality control and have limited capacity to develop new solutions and technologies. (7) The present state of the infrastructure makes it very difficult, if not impossible, to manage water resources in an efficient, rational and economically sustainable manner.

Kazakhstan's sustained efforts to modernize water infrastructure

There is a direct relationship between the level of economic development of a country (as measured by per capita GDP) and its ability to invest in the modernization of its water infrastructure and support maintenance and operational costs of the water sector. Kazakhstan with the biggest economy of the region is in a particularly good position to gradually make up for the consequences of decades of underinvestment. Agriculture is a priority area of economic policy of Kazakhstan as almost half of the population depends on income from the agro-industrial complex. Out of 5894 water management installations 230 are in private hands. Most of the water infrastructure was built in the Soviet period: 60-80% of irrigation canals, 40% of hydraulic installations and 75% of drainage systems. The main reason for the high losses during storage and transport of water is the dilapidated state of water infrastructure. Between 2002 and 2020 the government spent USD 230 M on the maintenance and USD 300 M on the

modernization and reconstruction of water infrastructure. International financial institutions were actively involved in financing the water sector: the World Bank, the Islamic Development Bank and the EBRD have provided USD 370 million that made possible the modernization of irrigation systems on 240 thousand hectares. Increasing investment in the water sector aims to improve the socio-economic situation of the population as well as achieve environmental sustainability. The main objectives of the Programme of water resources management till 2030 are the preservation of water resources at an economically and environmentally optimal level, spreading the efficient and rational use of water resources, including through strengthened international cooperation, monitoring, reconstruction of irrigation systems, building new reservoirs, supporting scientific research and improving legislation. (8)

The spiralling costs of climate change adaptation

Scientists keep warning of the looming threat of climate change that already causes higher average temperatures, irregular weather patterns, like multi-year droughts and earlier snowmelt. According to the World Economic Forum water crises and climate action failure are among the most likely and dramatic global risks (9). Water stress threatens to become a constraint for future growth in Central Asia where the contribution of a cubic meter of freshwater withdrawal to the GDP is among the lowest in the world (10).

The academic community and international development partners have for years called for improved water resource management and strengthened regional cooperation on water in the interest of greater resilience and more effective adaptation to climate change. Central Asian countries also need to speed up their own greening and cope with the effects of international decarbonization. A whole set of greening policies is needed, combined with upgraded social policies to cope with the consequences of change. Green recovery is economically sensible: this fully applies to the water sector, with its potential for sustainable growth and job creation. Good water and environmental governance is a necessity as climate change has to be embedded in any sectoral policy in a comprehensive manner.

Most Central Asian countries have already produced comprehensive green strategies. Kyrgyzstan has committed to aligning its recovery strategy with the sustainable development goals, Tajikistan aims to become a top green energy producer for which joint investment and regional cooperation are needed. Kazakhstan and Uzbekistan have also made important steps towards energy efficiency and decarbonisation. (11)

The climate change impact is growing bigger each passing year. Mitigation and adaptation measures may be more efficient if applied at the regional level. The crisis offers an opportunity to build back better. Recovery efforts should be consistent with climate action, lowering emissions, accelerating transition to clean energy and aiming for the broader use of modern water and irriga-

tion technologies. Investments should not undermine the objectives of the Paris Agreement and the shared objectives of climate neutrality and SDG-s. Global warming is a global problem that calls for global responses and at the same time local and regional solutions. (12)

The pandemic highlighted the importance of the water sector

The covid-19 epidemic was a dramatic reminder of the need to improve water resources management and regional cooperation on water: the economic crisis caused by the pandemic highlighted the critical importance of the water sector for Central Asia and at the same time exposed its vulnerabilities. The crisis revealed the socio-economic and institutional strengths and weaknesses of every country of the world, including Central Asia. It exposed the inequalities still persisting in access to clean drinking water and sanitation, as well as the intrinsic link between sustainable access to water and economic development.

The covid crisis is absorbing capacities and financial resources: the governments and their international partners cannot wait until the health crisis is over with developing strategies for sustainable post-covid recovery. Foreign direct investment and official development assistance are expected to drop in the coming years. The crisis revealed deficiencies and shortcomings which need to be addressed on a priority basis. Therefore, attention to water must be in the center of efficient responses to the covid-19 outbreak.

The recovery from Covid 19 should not compromise environmental ambitions. On the contrary: it should be used to promote transition to more sustainable, low-carbon and circular economies and the responsible and sustainable use and management of natural resources, including water.

Continued structural and institutional reforms are a precondition of achieving economic and financial sustainability of the water sector

Structural and institutional problems of Central Asia economies that hinder the rational and efficient management of water resources are mostly the result of incomplete processes of economic and political transition. The drain on capacities and resources by the pandemic reduces fiscal space when governments design and carry through recovery programmes. This increases the urgency to implement long overdue economic reforms.

While Central Asian countries have made important strides in reforming their legal and administrative environment, a lot remains to be done: according to an OECD study the legal and regulatory framework for firms remains opaque and unstable in several countries of the region. Unpredictability of tax policies and shortcomings in commercial justice - despite recent developments in alternative dispute resolution - still complicate private sector development and discourage investors (including in the infrastructure sector). A major challenge is the lack of human, administrative and financial capacities. Development partners, includ-

ing the EU, as well as OECD, EBRD and EIB can support green transition by policy advice, capacity building as well as green finance and investment. EU initiatives, like the European Green Deal can underpin these efforts. (13)

Structural reforms

Piecemeal reforms focusing on segments of the water sector are important but the water sector is an integral part of the economy as a whole. Policy makers should focus on the water sector when implementing economic reforms in support of sustainable recovery as it is the biggest employer, has a key role in food and energy security and in improving public health through the provision of clean drinking water. Improved performance of the sector would benefit broad segments of the population, contribute to poverty reduction and lessen inequalities that have increased as a result of the pandemic. Focusing on the water sector would mitigate risks posed by an unpredictable external environment, as it is less exposed to market volatilities than many other sectors of Central Asian economies (e.g. export of hard commodities, especially fossil fuels). The water sector plays a leading role in climate change adaptation and mitigation. It is in a good position to attract “green investment”. (14)

Targeted, sectoral reforms need to go hand in hand with structural and institutional reforms of the whole economy to bring sustainable results. Structural reforms improving the business and investment climate create favourable conditions for the reform of the water sector: competitive markets provide a level playing field for private farms, production clusters, cooperatives or state-owned companies. E.g. tackling burdensome regulations would allow private, collective and state-owned producers to more rapidly adapt to market changes or more easily export their produce. Removing obstacles to entrepreneurship would open up the possibility for farmers to develop their own business or form cooperatives on their own initiative, without too much intervention by the state. (15)

Structural reforms would facilitate foreign direct investment in the water sector too. Competitive markets and transparent regulations would allow governments to continue opening sectors dependent on water to those foreign investors who bring innovative technologies and guarantee the involvement of local actors into their global value chains. At the same time, the social and economic effects of the reforms need to be carefully monitored, as the fate of millions of farmers should not depend entirely on the vagaries of the market.

Institutional reforms

Thirty years after the beginning of political and economic transition, key water infrastructure in Central Asia - large and medium sized irrigation canals, HPS, reservoirs, pumping stations - remains overwhelmingly in state ownership. Participants of the webinars pointed to the central role of governments in managing and financing the water sector. The pandemic has further increased the importance of the state: governments became the capital-allocators-in-chief

all over the world. Taxes paid by water users are used to maintain and modernize large water infrastructure through the state budget. Large reservoirs built by the state (with low depreciation expenses), too, contribute to water infrastructure maintenance and modernization via the state budget. Private investment in large water infrastructure is likely to remain modest in the foreseeable future, due to illiquid markets, low profitability and uncertain legal environment, and in the case of Afghanistan, persisting instability and security risks.

Enabling governments to close the gap between investment needs and actual capacities of their economies is of crucial importance for the long-term stability and prosperity of the region. Accelerating institutional reforms is a *sine qua non* for increasing the ability of the state to shoulder the burden of maintaining and modernizing the crumbling water infrastructure, partly responsible for low water efficiency due to high losses, and cover its operational costs, thanks, among others, to more efficient resource allocation.

The countries of the region need to develop more efficient, inclusive economic institutions to improve the capacity of the state to manage water resources. The academic community, experts and policy makers need to design and implement institutional reforms that are rooted in the rich institutional heritage of the region and shaped by modern economic science. More open, inclusive institutions would spread the benefits of a thriving water sector evenly among the population and facilitate the gradual handover of certain tasks of the public sector to private or collective players and the civil society.

Kazakhstan' economic reforms benefit the water sector

Resources available for Central Asian governments to implement recovery strategies differ vastly. Kazakhstan is able to tap into the National Oil Fund (that held about USD 60 billion in the middle of 2020) and Samruk-Kazyna to bail out companies or entire sectors hit by the crisis and to provide economic stimulus, including support to the water sector. Thanks to the steady implementation of economic reforms the investment climate of Kazakhstan is about to reach international standards; this creates favorable conditions for the development of the water sector.

Since 1991 Kazakhstan has progressed towards a market economy: particular attention was paid to increasing the competitiveness of the agro-industrial complex. Agriculture is the main water user of the country: reforms of the sector have facilitated the increase of productivity and growing export of processed agricultural goods. Further investment in the sector depends on the improvement of water infrastructure.

The legal basis of water resources management has also developed significantly. The first Water Code of the country was adopted on 31 March 1993. It was replaced by the new Water Code adopted on 9 July 2003. The Code has been modified many times: changes reflected economic and policy developments. A new water code is under development.

The legal basis of environmental protection has been established, as well as the system of water protection, a cadaster of water polluters and the map of their geographical location. A system of payment for the provision of water, water use and water pollution has been established. Kazakhstan signed and ratified a number of international conventions on the use and protection of water resources. This development has been made possible by the adoption and implementation of important state programmes: the Concept of development of the water sector of the economy and the policy of water resources management till 2010 (adopted in 2002) and the State program of the development of the agro-industrial complex (2017 - 2021). These programs also cover supply of drinking water and canalisation.

Today, water resources management in Kazakhstan is based on the basin principle that allows for the optimization of water supply to various sectors of the economy, for the efficient functioning of the water sector and the resolution of economic and socio-economic problems of the country. In June 2019 the Ministry of ecology, geology and natural resources was created by a presidential decree: its responsibilities include the development and operation of water infrastructure as well as the complex use and protection of water resources. The ministry, among others, works on the modernization and automation of water monitoring and planning and operation of water infrastructure.

Analysis of the economy of Kazakhstan reveals the continuous increase of GDP per cubic meter of total freshwater withdrawal as a result of the introduction of water saving technologies and circular economy water cycle that result in increased water productivity.

The law on "Natural monopolies" was adopted on 27 December 2018, covering water supply services and canalisation. The normative acts on tariff policy are aimed at ensuring the profitability of service providers and attracting investors. As a result, water supply systems face less, and less technical problems and their maintenance and operation are improving. The quality of water supply in the cities and larger communities of Kazakhstan is ranking high among CIS countries and is improving thanks to rapid growth of the economy. The Ministry in 2020 elaborated the State Programme on water resources management till 2030: it will continue improving the supply of drinking water, increase investment in agriculture, the management of water infrastructure and create favourable conditions for foreign and domestic investment. (16)

The active involvement of international partners, climate and green funds is crucial for achieving economic and financial sustainability of the water sector

There is an urgent need to use more broadly and effectively resources offered by development partners, climate funds and green development programmes. Climate related finance from bilateral and multilateral partners could be scaled up: grants, loans, technical assistance, project investments or co-financing can

be leveraged by Central Asian governments. Climate change mitigation and adaptation and green development can be more efficient if undertaken on a regional scale. Different international partners need to be involved but the lead must be with the countries of Central Asia. Priorities need to be aligned between countries and donors, based on an agreed, long-term, multi-sector and cross sector vision, into which donors and development banks can buy in and which can be used for planning for improved systemic water resources management.

Developed countries pledged to mobilize USD 100 billion per year through 2025 to help climate change mitigation and adaptation. The EU is the largest provider of public climate finance. The Green Deal of the European Union allocates more than 750 million Euro to the post Covid-19 recovery package. An enabling political and technical environment for multi-sectoral investment to increase water, energy and food security is key to mitigation of and adaptation to climate change. Such investment will make countries' economic and trade activities more sustainable. The EU is committed to supporting sustainable development, resilience, and prosperity in Central Asia - key priorities of the new Strategy on Central Asia. The Green Deal will focus on the efficient use of resources by moving to a clean, circular economy (17).

The EU is working together with national action plans, like Germany's Green Central Asia initiative. The new programming framework for Central Asia for 2021-2027 is centered on the need to create a green and inclusive economy as a result of post-covid19 recovery. The priority areas of the program are agriculture, SME-s, human development (including education and health), natural resource management (including water, energy and disaster risk reduction), as well as a "whole of society" approach (including a Civil Society Forum). The EU - Central Asia Economic Forum in the second half of the year will be a useful platform for promoting a comprehensive approach to recovery (18).

How to translate political will into concrete action?

There is an urgent need to translate the emerging strong political will to improve water resources management and strengthen regional cooperation into concrete action. Although environmental systems are integrated, lessons of the Aral Sea disaster have not been internalized: repetition of the tragedy cannot be excluded. Ecological needs are still mostly ignored in water resources management. Urban and rural water supply and sanitation services differ significantly. Drinking water programmes are under way in every country but sanitation improvement programmes are rare. Data on water quality, if at all available, is not well structured (19).

The Central Asian academic community must make a concerted effort to prepare and support decisions through analyses and policy recommendations. Following the global trend of a declining predominance of engineering approaches, researchers and experts should focus on the economic and financial sustain-

ability of the water sector in order to enhance and sustain its contribution to socioeconomic development. This requires teamwork by different professions, ministries, countries: only such a broad, multi-stakeholder discussion offers an opportunity to elaborate policy-level recommendations on how to mobilize resources and how to invest them in a systemic and strategic manner. It is a shared responsibility to work together in order to empower the countries of the region to effectively address mounting challenges, like climate change, water pollution or geostrategic processes.

Launching of broad, cross-sector and cross-country dialogue is the first step

The first two webinars concluded that only the development and implementation of essential economic reforms would empower Central Asian countries to effectively deal with the compound effects of thirty years of underinvestment and climate change on the water sector. The development of comprehensive reform programs, with the water sector in their center, requires the involvement of experts and researchers from many areas: hydraulic engineering, irrigated agriculture, energy, environment protection, economy, finance, investment as well as strategic planning. To foster a dialogue among these experts is a learning process as they may not speak the same language. The Program “Water as a driver of sustainable recovery: economic, institutional and strategic aspects of water resources management in Central Asia” intends to provide support to the evolution of such a dialogue.

References:

1. Data: (1) All data: 2016 World Development Indicators; FAO Aquastat (2013-2014 data); (2) Only reservoirs within the Amu and Syr Darya basins, including Rogun (TAJ), and comprising man-made structures and natural depressions
2. Materials of the four webinars can be found on the CAREC-BPCA website (<https://carececo.org/en/main/news/news/vtoroy-vebinar-issledovatel'skoy-programmy-voda-kak-dvizhushchaya-sila-ustoychivogo-vosstanovleniya-o/>)
3. World Bank's Experience with Structural Reforms for Growth and Development, Vinaya Swaroop, Discussion Paper, MFM Global Practice, No.11, May 2016
4. For a more extensive definition of institutions see North, Douglass (1991). "Institutions". Journal of Economic Perspectives. 5 (1): 97–112. and "The institutional economics of water", R.Maria Saleth and Ariel Dinar, Edward Elgar Publishing Limited, 2004
5. The launch of the new research program "Water as a driver of sustainable recovery" with the first regional webinar. Summary of the first webinar, p.3 URL: <http://www.bluepeace-centralasia.ch/materials/the-launch-of-the-new-research-programme/>
6. The launch of the new research program "Water as a driver of sustainable recovery" with the first regional webinar. Summary of the first webinar p. 3, CAREC-BPCA website, URL: <http://www.bluepeace-centralasia.ch/materials/the-launch-of-the-new-research-programme>
7. Summary of the first webinar, p.3 (CAREC-BPCA website), URL: <http://www.bluepeace-centralasia.ch/materials/the-launch-of-the-new-research-programme/>

8. Summary of the first webinar, p. 4 (CAREC-BPCA website), URL: <http://www.bluepeace-centralasia.ch/materials/the-launch-of-the-new-research-programme/>
9. The Global Risks Report 2021, p.11. URL: <https://www.weforum.org/reports/the-global-risks-report-2021>,
10. According to FAO / World Bank statistics, Central Asian countries water productivities (calculated as GDP in constant prices (in USD) divided by annual total water withdrawals) are among the lowest in the world: Kazakhstan: 8.7, Turkmenistan 1.3, Uzbekistan 1.0, Kyrgyzstan 0.7 and Tajikistan 0.6. For comparison, the water productivity is 42.1 in the Europe-Central Asia region, 28 in the Russian Federation, 24.4 in Turkey and 9 in the Ukraine (FAO/Aquastat)
11. The second webinar of the research program "Water as a driver of sustainable recovery" covered essential structural and institutional reforms. Summary of the second webinar, p. 3, CAREC-BPCA website, URL: <http://www.bluepeace-centralasia.ch/materials/the-second-webinar-of-the-research-program/>
12. Summary of the first webinar, p. 6 (CAREC-BPCA website)? URL: <http://www.bluepeace-centralasia.ch/materials/the-launch-of-the-new-research-programme/>
13. Summary of the second webinar, p. 3 (CAREC-BPCA website)? URL: <http://www.bluepeace-centralasia.ch/materials/the-second-webinar-of-the-research-program/>
14. Summary of the second webinar, p. 5 (CAREC-BPCA website)
15. Background paper of the second webinar, p. 5 (CAREC-BPCA website)
16. Summary of the second webinar p. 6 (CAREC-BPCA website)
17. Summary of the second webinar, p. 2 (CAREC-BPCA website)
18. ibid
19. Summary of the first webinar, p. 5 (CAREC-BPCA website)