

ВОДА КАК ФАКТОР ЭКОНОМИЧЕСКОГО РОСТА И БЕЗОПАСНОСТИ В ЦЕНТРАЛЬНОЙ АЗИИ: ПОСЛЕДСТВИЯ БЕЗДЕЙСТВИЯ И ПРЕИМУЩЕСТВА СОТРУДНИЧЕСТВА

doi.org/10.52536/KS/vol_97_issue_1_A7

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Аннотация: Население Центральной Азии проживает в зоне высокого риска с точки зрения водной безопасности. Увеличение населения планеты влияет на активный экономический рост и повышение спроса на водные ресурсы. Неправильное использование водных ресурсов приводит к сокращению речного стока, высыханию озер, исчезновению водно-болотных угодий, угрозе исчезновения Аральского моря и снижения уровня грунтовых вод. Эти тревожные прогнозы подчеркивают необходимость отказа от прежних подходов к использованию водных ресурсов между странами Центральной Азии, которое влияет на обеспечение безопасности жителей, и зависит не только от технических достижений науки, но и от политики, управления и общественных ценностей.

Ключевые слова: Аральское море, Центральная Азия, регионализация, трансграничные речные бассейны, водная безопасность, управление водными ресурсами.

СУ ОРТАЛЫҚ АЗИЯДАҒЫ ЭКОНОМИКАЛЫҚ ӨСУ МЕН ҚАУІПСІЗДІК ФАКТОРЫ РЕТІНДЕ: ӘРЕКЕТСІЗДІК САЛДАРЫ МЕН ЫНТЫМАҚТАСТЫҚТЫҢ ПАЙДАСЫ

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Андатпа: Орталық Азия халқы су қауіпсіздігі тұрғысынан қауіпті аймақта тұрады. Дүние жүзі халқының көбеюі күшті экономикалық өсуге және су ресурстарына деген сұраныстың артуына әсер етеді. Су ресурстарын дұрыс пайдаланбау өзендер ағысының азаюына, көлдердің құрғауына, сулы-батпақты жерлердің жойылуына, Арал теңізінің жойылып кету қаупіне және жер асты сулары деңгейінің төмендеуіне әкеледі. Бұл алаңдатарлық болжамдар тұрғындардың қауіпсіздігіне әсер ететін және ғылымдағы технологиялық жетістіктерге ғана емес, саясатқа, басқаруға және әлеуметтік құндылықтарға тәуелді болатын Орталық Азия елдері арасындағы су ресурстарын пайдалануға қатысты бұрынғы тәсілдерден бас тарту қажеттілігін көрсетеді.

Түйін сөздер: Арал теңізі, Орталық Азия, аймақтық ынтымақтастық, трансшекаралық өзендер, бассейндер, су қауіпсіздігі, су ресурстарын басқару.

WATER AS A FACTOR OF ECONOMIC GROWTH AND SECURITY IN CENTRAL ASIA: THE EFFECTS OF INACTION AND BENEFITS OF COOPERATION

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Abstract: The population of Central Asia lives in high-risk areas in terms of water security. Growing population implies an increase in economic activity and demand for water resources; besides that, Improper use of water resources causes a reduction in river flow, drying out of lakes, disappearance of wetlands, the threat of the extinction of the Aral Sea and a decrease in groundwater levels. Such alarming forecasts emphasize the need to abandon previous approaches to the use of water resources, which affects the safety of residents and which depend not only on the technological achievements of science, but also on politics, management and public values.

Key words: *Aral Sea, Central Asia, regional cooperation, transboundary river basins, water security, water resources management.*

Introduction

There is practically no country in the world that where lack of water resources is not a concern. Nowadays this acute problem is also accompanied by climate fluctuation. It is significant that these two factors can generate worldwide obstacles such as the slowdown in economic development, inciting conflicts and migration increasement.

Although the world is facing an increasing population and inhomogeneous water allocation, which are factors leading to the water shortage, water is a renewable resource. By 2025, according to a United Nations Organization's report, $\frac{2}{3}$ of the human population may be suffering from water shortage [20]. It is significant to acknowledge that most of the countries can eliminate adverse influence of water shortage if they implement immediate and productive measures in the field of water resource management.

Water shortage consequences are spread worldwide and do not lie only in the individual states framework, but a regional and global one is needed.

Averting the devastating of water capacity, preventing complications on the path of stable development, economic growth and poverty alleviation – are the main objectives of the impoverished countries. Moreover, these countries shall strive to *water security*, that implies “*the capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being, and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability*” [22]. Issues listed above are applicable all around the globe; nonetheless, they are particularly suitable for desertic areas with water shortage and the necessity to raise the level of employment, as well as generate more energy and water. Hence, water shortage has three main factors as reasons for it: global climate fluctuation, environmental contamination and population increase, which is predicted to reach the number of 90 million people by 2050. Thus, one of the main matters for the Central Asian region is water security.

The aim of the article is to recognize the cost of inaction and possible benefits of supplying of water security. This article is focused on the '90s, the period immediately after the USSR disintegration and the posterior

setting of regional ties within the Central Asian area, its origins and prerequisites, phases of development and its implications.

Materials and methods

The political-philosophical method lies in the foundation of the methodology. This method pays close attention to the period after the USSR disintegration and setting of regional ties within the Central Asian area. It also enables to explore this process through the concept, political and social environment of the period. At the time, it is significant to examine political regional ties in the course of evolution, paying attention to its origins and prerequisites, phases of development and its implications. And the principle of historicism just studies any phenomenon, covering the factors mentioned here, which gives it a primary value.

Water security: A definition from the Central Asian perspective

Water and water security are fundamental for sustainable development, since they are the basis to satisfy the needs of ecosystems, the biosphere and a single biogeochemical cycle as a factor of "the continuity of life on the surface of the Earth", the basis of life on planet [17].

Central Asia has a 30-years history of and institutions for water cooperation whose main function is to implement water security and whose impact is often underestimated.

In 2013, the working group UN-Water proposed a definition of water security to provide a common framework for collaboration across the UN system: "Water security is defined as the capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being, and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability" [23].

Looking at the debates within the water sector, risks to water security have been identified as transboundary and inter and intra sectorial competition, water pollution, unsustainable operation and maintenance as well as reliance on a single source or supply network. Therefore, water supply security could be defined as a resilient system capable of coping with shocks, abuses and threats through direct security measures (surveillance and guards) and indirect or more passive measures through increasing maintenance and additional or alternative water supply sources, duplication of or less reliance on critical infrastructure to better cope with tem-

porary shortages in water source availability as well as water rights or allocations to cope with competitions.

Going further at the same document, it is possible to find another interesting statement: "Achieving transboundary water security can stimulate regional cooperation, especially when supported by international instruments". This is the key point for water security in Central Asia (taking into account the rest of drivers, of course). In this region, cooperation between states is crucial to improve the quality of water and to ensure sufficient quantity of it.

The key parameters of water security also include water economic security as the basis for human progress, economic development and human prosperity in the future [8]. Therefore, the main challenge is to ensure growth and eradicating poverty while guaranteeing environmental sustainability, social inclusion and equity. As a consequence, sustainable development, preservation of the biosphere and life on the earth is impossible without acknowledging the special irreplaceable role of water as one of the greatest values. Water security is an indispensable part of "ecological security" [6] and to ensure it states of the region of Central Asia will have to change their respective approaches to the problem of shortage of water resources in the region in accordance with rules contained in international treaties.

The availability of water resources significantly affects the level and quality of life of the population. In the Address of the former President of the Republic of Kazakhstan N.A. Nazarbayev the people of Kazakhstan "Nurly Zhol - the way to the future" paid great attention modernization and development of water supply and sanitation [13].

After gaining independence, the Central Asian republics directed their efforts towards economic growth, the formation of a market, and the building of democracy, but left out of sight one of the most important problems - the distribution of water resources, which subsequently played a serious role in the interstate relations of these newly independent countries. The crisis in the provision of Central Asia with water resources today is caused by three main factors: rapid population growth, climate change and environmental pollution [6]. Water security, which primarily means the availability of water suitable for drinking and personal hygiene, but also the ability to prevent floods, floods, mudflows and other disasters, in which water is the main destructive force, becomes a condition for planetary security.

As security is indivisible, energy, food and water are different aspects of the same human security, and it is possible to learn some les-

sons from studies on such fields [27]. To talk about scarcity or stress on these topics it is necessary to take into account four aspects: quantity (supply), quality (purity, cleanliness), availability (ability to use what quantity) and level of demand. Regarding water, water resources in Central Asia are limited, as explained before, so the supply is also limited; besides that, water is controlled by national governments, so the availability depends on them also; and level of demand is related to population but also to visitors (migrants and tourists). By the way, countries should take into account the availability of drinkable water when they are offering their amazing landscapes for tourism as main source of economic income for the region.

How to improve the availability of water for the whole region? First of all, there is a clear tendency in International Law regarding the use of transboundary waters, according to that the states affected by those rivers can manage jointly that natural resource, who and how to open and close the water tap. Second, every state can receive investments (public, private, or partnership PPP) to renew or improve the irrigation network, distribution of water, sewage channeling,...every aspect of water management. For instance, apart from the Rogun dam there are other projects for micro dam for every town or city (especially in mountainous regions).

What is better, managing water as a region or as a country? Is it fair? Is it useful, efficient?

Here there are two ways to answer: ethically or efficiently. Of course, the best answer is a mix of both, so that everyone in that region can have access to water at a reasonable price, following

similar criteria to food security as the Committee on World Food Security (CFS) of FAO stated:

“Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. The four pillars of food security are availability, access, utilization and stability. The nutritional dimension is integral to the concept of food security and to the work of CFS” [5].

Finally, it is necessary to take into account the key factor of stability. To realize the importance of this driver, it is enough to take a look at other neighboring countries that are in troubles and have security problems. In such environment is much more difficult to assure the supply of high level quality water to the entire population at a reasonable price. Just as a reminder, it is important to note that energy, food and water security

are fundamental parts of national security and, thus, sovereignty. That is why it is possible to label inefficient states in these fields as failed or flailing states [24].

The origins of the cooperation between Central Asian states on water security

Setting up political and diplomatic ties among the countries of Central Asia

Water in Central Asia is one of the most important strategic resources. However, it is still free. This gives rise to problems of interstate relations, which leave an imprint not only on the political, but also on the socio-economic development of countries. At the same time, all the problems are multifaceted and carry the potential for increasing tension both within the republics and at the regional level. The notion of water security in the area has evolved during many years in an endeavor to regulate this vast river network among downstream and upstream countries. During the times of the USSR, there were two directions of water allocation: 1) in downstream countries, primarily for monoculture of cotton with broad drainage and supply networks; 2) and in upstream countries, to produce hydroelectric power in dams. The concept of Central Asia water security continued to be the same even when the USSR disintegrated in 1991. Downstream countries needed ample amount of water for irrigation purposes in agricultural sphere, and upstream countries kept on evolving hydroelectric power capacity [19]. Besides that, Kyrgyzstan and Tajikistan handle about 80% of overall freshwater resources. Thus, water resources management among these five countries, which is one of the major challenges for the area, is still undetermined.

The issue of water allocation is not uniform, and even on the contrary, it is exceptionally difficult and integrates not only water and environmental perspectives, but also political, economic and energy features. The complication of water relations can trigger social and ethnic dissensions. For example, possible contradictions may be a result of drainage-contaminated, substandard water that flows to the farthest downstream zones, such as Kyzylorda in Kazakhstan and Karakalpakstan in Uzbekistan [21]. Generally, the gains from collaboration were quite skewed and unequally allocated.

In some Central Asian countries, over 50% of people use agriculture as their main mean of subsistence. This fact underlines the importance of this economic sector in the area. Yet, Central Asia has the worst water

productivity indexes in Europe and area itself [2]. On the one hand, insufficient water allocation and sanitation result in general economic expenditures reaching about \$2.1 billion. On the other, these expenditures vary depending on the country – oscillating from practically 0.5% of GDP in the Republic of Kazakhstan to about 4.25% in the Republic of Tajikistan (data compiled in 2017) every year [25].

“The water agenda in Central Asia is always viewed through the lens of the Aral Sea disaster,” mentioned the World Bank Country Manager for Kazakhstan Ato Brown. “Today, it is high time for us to start changing the narrative so that Central Asia is known for being an oasis of production and productivity.” [11] From 1960 to 2004, the area of the water surface of the Aral Sea decreased by almost 70%, the water level dropped by about 20 m. The salinity of the sea increased significantly, the biological diversity significantly decreased, and fishing disappeared. Accordingly, the economic and social conditions of the population have deteriorated significantly. In addition, from the territory of the dried bottom of the Aral Sea, more than 1 million tons of salt and sand containing fertilizer residues are annually carried over an area of 400 thousand km². The settling Aral salt dust reduces the reflective ability of glaciers, which accelerates the processes of their melting, destroys crops and has an extremely negative impact on the health of people living in the Aral Sea region.

In 1970s and 1980s, the USSR management created colossal hydraulic structures in upstream countries of Central Asia. These structures damaged the innate flow of Syrdarya and Amudarya rivers; this in turn caused the shallowing of the Aral Sea. Together with climate fluctuation and the negative impact of human life, new tendencies of growth in the rate of abnormal natural catastrophes started to occur in the world. This collaboration of factors triggers new technogenic catastrophes. Tajikistan, 2009 - as a result of an accident at the Nurek-Regar power transmission line, the power output of almost all hydropower plants in Tajikistan, including the country's largest Nurek hydroelectric power station, was terminated, which led to a power failure of about 70% of the territory of Tajikistan [4]. Remained without electricity, among other facilities, the aluminum plant - a very energy-intensive enterprise that must operate in a continuous cycle.

Considering these facts, it is possible to see the significant matter of the intention of upstream countries not only to use water from shared rivers, but also to misuse it, disrupting the norms of international law. The

project of the unique Rogun Hydroelectric Power Plant on the territory of southern Tajikistan, which is 340 meters high, can serve as an example. This HPP is regarded as an imminent danger to the national security by the government of Uzbekistan [9].

The water resources management as well as related sectors (agriculture, energy) in Central Asia is characterized by significant inefficiencies. If water resources were managed correctly on the territory of Central Asia, this particular area could be the one to reach some brilliant results, pursuant to the World Bank estimation [26]. To escape the failure of the agricultural economy sectors, states broadened the concept of water resource management and quota system derived from the collapsed USSR. In October 1991, the great political move was made as the Tashkent Statement was accepted due to the initiative of top officials of water management agencies of independent countries of Central Asia [1]. The Tashkent Statement referred to the joint use of water on common guidelines, respecting the concerns of all state-parties. In addition, it marked the beginning of series of negotiations within the region, concerning the important issue of water allocation from transboundary rivers.

Another major event took place in Almaty, Kazakhstan on 18th of February, 1992, when the Central Asian countries concluded an Agreement on Cooperation in the Joint Use and Protection of Water Resources of Interstate Significance. By undertaking this instrument, they acknowledged the “existing structure and principles of allocation” of cross-border water resources, obliged to “strictly to observe the coordinated procedures and established rules on use and protection of water resources”, and conceded that shallowing of the Aral Sea is the problem not only of Kazakhstan, but also of the entire area. Moreover, this Agreement created an official body responsible for the establishment of yearly water use extents in compliance with the current water accessibility. The body is called the Interstate Commission for Water Coordination (ICWC) with two basin water management institutions [10].

Still, the mismatch of concerns continued to exist and in 1993, the countries gathered to conclude the Agreement on Cooperation in the Joint Management, Use and Protection of Water Resources of Interstate Sources in order to solve their controversies over water distribution and joint consumption of water resources. Yet even that instrument appeared to be invalid. Later, in 1995, the Nukus Declaration was made up, underlining the ultimate significance of prior instruments in the sphere of water resource management [12].

Opportunities and threats for cooperation to achieve water security in Central Asia

Ato Brown, World Bank Country Manager for Kazakhstan, stated in 2019 at the Astana Economic Forum: “Central Asian countries need to start with a joint project, and there are opportunities for working together”. It is remarkable that each state of this area has undeniable potential to be flexible facing climate fluctuations, economically robust and ensuring fresh possibilities to its nations. This potential shall be fulfilled if these countries make sufficient input to the development of water resource management [11]. However, the common water use arrangement has not yet been elaborated. In order to duly fulfill current and forthcoming tasks on the way to successful interstate multipartite collaboration, the present existing sphere of interaction requires upgrading and consolidation.

Upstream countries recently encountered an acute necessity to decide, whether they start to evolve their own hydropower or to pay global rates for energy resources, that would mean onerous encumbrance for their subsistence-based, minuscule economies. This situation occurred when states located downstream have begun to increase the cost of gas and oil delivered to Tajikistan and Kyrgyzstan in trade for water. Surely, the decision was taken in favor of the former. Therefore, upstream countries have economic and political involvements in constructing sufficient hydroelectric power stations – the Tajik Rogun Dam and the Kyrgyz Kambarata-2 Hydro Power Plant. Governments of these two states have to ensure the energy demands of countries and energy resources export overseas, as well as to consolidate national authorities and the positions of governing elite, giving legality to the regime, escaping lack of credibility in community. The Head of Tajikistan Emomali Rakhmon pledged that building the Rogun hydroelectric power plant is a vital, critical moment for the state and the plan to complete its creation shall be carried out “at any cost” [14].

To be honest, the Central Asian region is suffering from critical water shortage less than other parts of the world. For instance, water reserves in North Africa are 2.441 m³/year, while the Middle East – 7.922 m³/year. Finally, in the Central Asian area, this number reaches 20.525 m³/year. Nevertheless, the problem for Central Asia is extremely acute, since aquatic resources are going to decrease as the Pamir and Tien Shan glaciers forfeit yearly due to climate fluctuations. Since 1960, the glaciers of the Tien Shan have been missing an average of 5.4 billion tons of ice per year, totaling 3000 km³ [26].

National interests, countries' preferences and powers are the foundation of economic and political ties among Central Asian states, where the management of transboundary water resources is profoundly rooted. Unfortunately, interstate instruments are not capable of intensifying a reciprocally advantageous and precise legal basis for the control of cross border water resources, even though they exert a significant impact on the governance of aquatic resources in the area [25].

The World Bank released results of its estimations on the building of Rogun dam on the Tajik demand in 2014. It was acknowledged that with satisfying security requirements fulfilled, the Rogun hydroelectric power plant could be constructed [26]. Another "go-ahead" to the Rogun project execution was demise of Uzbekistan's leader Islam Karimov in early autumn 2016, as building started a month later.

Thus, the regional cooperation would allow Central Asian countries to further reduce their dependencies on third countries and create opportunities to jointly address shared issues.

Kazakhstan and Kyrgyzstan cooperation on river basins of Chu and Talas

One of the most successful relationships is cooperation between Kazakhstan and Kyrgyzstan on governance over the Chu and Talas rivers, despite the contradictions and problems regarding water use in the Syrdarya basin.

The total area of the river basin Chu is 62.5 thousand km², including 26.6 thousand km² (42.5%) within Kyrgyzstan and 35.9 thousand km² (57.5%) within Kazakhstan. The length of the river Chu - 1067 km, including 336 km - on the territory of Kyrgyzstan. The total area of the river basin Talas is 52.7 thousand km², including 11.43 thousand km² (21.7%) within Kyrgyzstan and 41.27 thousand km² - within Kazakhstan. The length of the river Talas - 661 km, including 217 km – on the territory of Kyrgyzstan. Average long-term water discharge of the river. Talas is about 27.5 m³ / sec., Chu - about 70 m³ / sec. [7].

The agreement "On the use of water facilities interstate use on the Chu and Talas rivers" was adopted in January 2000, which is a bilateral agreement between Kazakhstan and Kyrgyzstan. Cooperation in the Chu and Talas river basins is the first interdepartmental cooperation on a principle of participation in the operation water facilities. As in the case of the Syr Darya, there were some problems regarding water flow downstream of rivers. Moreover, for Kyrgyzstan was an unbearable task

to maintain its waterworks and reservoirs. The agreement between the two countries can be called successful for several reasons. First, the introduction of the principle that the consumer of water (Kazakhstan) is obliged to assist in the maintenance and provide compensation to the owner of water facilities (Kyrgyzstan). According to Article 3 of this agreement, " The Party-owner of the water facility of interstate use is entitled to receive compensation from the Party-user of the facility for the costs needed to provide safe and reliable operation. "[16]

Regional economic cooperation can create significant benefits for the economies of the countries concerned. Such cooperation accompanied and guided by a number of changes in economic relations, the emergence of new economic opportunities and growth in economic efficiency (for example, creating conditions for economies of scale or enabling countries to specialize in those economic activities where they are very productive).

Therefore, we can state that transboundary water cooperation directly contributes to such cooperation in water-related areas such as hydro-power development or water transport. Indirectly, it can promote regional economic interdependence by helping to strengthen trust and serving as a model negotiation mechanism policy issues and dispute resolution. In addition, environmental safety and economies of countries Central Asia is closely related to character use of river flow resources, as well as concerted action for joint transboundary river management [18].

Conclusion

As previously detected, the water accessibility has its influence over economic sphere and political course of any country. Current controversies on the water resources management in Central Asia are complex and require immediate solutions as they concern not only this area's countries, but also the neighbors. Postponements of decisions about mutual assistance and collaboration on water security in this region can lead to unexpected (and unwished) circumstances in the area. Thus, it is undeniable that water security can be considered as a threat to Central Asia [3].

The area is experiencing an exacerbating water crisis (not only around the Aral Sea) and the absence of intergovernmental arrangements concerning water resource management, both factors needed for an escalation in economic confrontation or even a direct aggression. The international tension created around the Rogun dam project in Tajikistan is an evidence of that: the situation becomes tenser when some countries'

opportunities imply worsening neighboring countries' lives. Therefore, a common resolution of the water problem would be advantageous for everyone.

Nevertheless, setting incorrectly the priorities overshadow prospective possibilities for conflict resolution. Currently, the precedence is continuously given to national security and not to human priorities. In this way, national security (superficially determined and unequivocally defended) is transformed into a menace as much from the point of view of its own aspects (economic, transport, social) as from the point of view of higher security.

The key difficulty in this situation is the national independence. This “newly” independent states guard jealously their national sovereignty and a joint management of shared rivers requires the delegation of part of that sovereignty to an international authority with exclusive competences on that issue, or even to a supranational authority whose decisions can harm what one state can consider national interest or priority. To a certain extent quite fairly, national sovereignty becomes a strictly guarded good to be preserved. Furthermore, the presidents of the Central Asian countries often identify “sovereignty” with themselves and any infringement on the national sovereignty is perceived as a threat to the president personally. In any political system, the Head of the state personify the unity of the country and represent the country in international fora at the highest level, but it seems that in Central Asia two principles coming from the French king Louis XIV are alive: *“l'état, c'est moi”* (“the State is me”) and *“Après nous, le deluge”* (“After us, the diluvium”). Using these two sentences can be exacerbating as it implies setting the leader's priorities over the country or region's needs.

Pursuant to the foregoing, we offer certain guidelines, such as:

1. Concerns and interests of more than 50 million people living in Central Asia shall be considered when resolving the problem of trans-boundary rivers joint management;
2. Taking into account the previous experience, a new and more efficient international body should be created for water management in Central Asia. The lessons learned on the evolution of other international bodies and organizations (*id est*, the European Union) show us that sometimes it is good to transform the previous organization into a new, more powerful one.

3. The environmental equilibrium in the area should be respected and protected by that international body, as that should be the main scope of global multilateral legal acts concerning ecology and water management;

4. The rights of any state-party to utilize transboundary rivers' water to develop its/their projects, including hydraulic engineering, shall not be disowned. This guideline is applied if, before starting the project, three independent and rigorous estimations on the basis of the principles of complete understanding of state-parties and transparency are conducted.

5. The interests of the Central Asian states should not be disregarded when the projects are accomplished with a constructive attitude and compromise, as two essential stipulations are provided:

- a) non-disturbance of security and environmental balance of the area;
- b) avoidance of a reduction in the watercourse for states located downstream.

Averting the disruption of the water and ecological balance in the area may be successful only when cooperative endeavors are made. Collective attempts may also be productive to provide the population with fresh water resources, and, which is also important, to ensure ecological security of Central Asia.

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