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KEY FACTORS OF SUSTAINABLE USE OF WATER RESOURCES IN CENTRAL ASIA

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ABSTRACT

Water resources are a vital strategic and closely interdependent factor in Central Asia. They are connected by common river basins of the Syr Darya and Amudarya rivers, a single ecological system. The countries of the region have large proven reserves of gas, oil, coal and uranium. An industrial base for the extraction of energy resources has been created, sufficient for the stableeconomic development of all the countries of Central Asia.

For more than 50 years, the scale negative environmental and socio-economic consequences of the drying up of the Aral Sea for the Central Asian region are widely known throughout the world. The Republic of Uzbekistan makes a significant and tangible contribution to mitigating the impact of the Aral catastrophe on the environment and health of the population of the Aral Sea area. However, the scale of existing problems requires drawing the attention of the broad world public to measures aimed at restoring the ecosystems of the region and achieving its sustainable development.

KEYWORDS: *Water Use, The Aral Sea, Water Resources, Biodiversity, Collector-Drainage Networks, Transboundary Rivers, Water Resources Protection.*

INTRODUCTION:

In the Central Asian region, characterized by aridity, effective water management is one of the most important elements for ensuring sustainable development and poverty reduction in the region. The main sources of water resources linking all five countries of the region are the two large rivers of the Aral Sea basin - the Amudarya and the Syr Darya. The creation of a large-scale and ineffective system of irrigated agriculture in the states located mainly in the lower reaches of the rivers became the root cause of the Aral catastrophe. In addition, a system of water-energy interdependence inherited the five former Soviet republics. The ecological catastrophe in the Aral Sea region is a consequence of the extensive management of irrigated agriculture in the basins of the Syr Darya and Amudarya rivers. As a result of the forced input of irrigated areas of water losses during transportation and irrigation, the river flow of the Aral almost ceased. The sea level fell from 53 m in 1960 to 40.9 m in 1987, the area of the sea decreased from 67 to 41 thousand km2, and the volume - from 1,064 to 404 km2.

The Aral Sea is a drainless salt lake in Central Asia, on the border of Kazakhstan and Uzbekistan. Before the beginning of shallowing, the Aral Sea was the fourth largest lake in the world. Excessive water intake for irrigation of agricultural land has transformed the world's fourth-largest lake-sea, formerly rich in life, into a barren desert. What happens to the Aral Sea is a real environmental problem. The Aral catastrophe directly affected five states of the Aral Sea

region: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. The first to suffer from it were residents of the territories that used to be coastal. At the present time, the drying Aral Sea is 100 km from its former coastline near the city of Muynak in Uzbekistan. Collector-drainage water coming from the fields into the mainstream of the Syr Darya and Amu Darya rivers caused deposits from pesticides and various other agricultural pesticides, appearing in places on 54 thousand km of the former seabed covered with salt. Dust storms carry salt, dust and pesticides up to 500km. Sodium bicarbonate, sodium chloride and sodium sulfate are transported through the air and destroy or slow down the development of natural vegetation and crops.

Today, due to the Aral Sea crisis, the following number of problems arose:
- A sharp deficit and high contamination of river waters used for drinking water supply and irrigation;
- Degradation of soil and vegetation cover, desertification, land degradation and salinization, reduction of crop yields and quality of crops, decline in pasture productivity, severe impoverishment of the animal world;
- A serious deterioration in the health of the population, an increase in infant mortality;
- loss of fishing and water transport value of the sea, liquidation of fish processing enterprises.

Restoration of the entire Aral Sea is impossible. For this, it would take four times to increase the annual inflow of the Amudarya and Syr Darya waters in comparison with the current average of 13 km3.

At the moment, the only significant measure to maintain sea level used by the states of Central Asia and Kazakhstan is the transfer to the Aral Sea of a certain amount of fresh water provided by Western countries. However, this costly event has no economic, social or political prospects. It is also less effective from the ecological point of view: the region will continue to develop along an extensive route, which means that the fence from the rivers will continue to grow.

Materials and methods: Water is a key factor in the socio-economic well-being of the Central Asian country. It is also not a secret that in the long term its deficit will increase, especially taking into account the rate of climate change, which puts at risk the sustainable development of not only individual desert zones, but the entire region as a whole. Most of the surface waters of the region flow through the territory of several states, which leads to the need for cooperation in the management of transboundary rivers.

Worldwide, there is growing recognition that inequalities in access to water resources, competition in the control of their distribution and use, can lead to conflicts at the local and regional levels. The sad fate of the Aral Sea begins to be repeated by other major water bodies in the world - primarily Lake Chad in Central Africa and Lake Salton Sea in the south of the US state of California. Because of the excessive intake of water to irrigate the fields, the water in it becomes more salty. Various plans for the desalination of this lake are being considered. As a result of the rapid development of irrigation since the 1960s. Lake Chad in Africa has decreased to 1/10 of its former size. Farmers, shepherds and locals from four countries adjacent to the lake often fiercely fight among themselves for the remains of water (bottom right, blue), and the depth of the lake is today only 1.5 m.

Cooperation in the field of rational use and protection of water resources can become an instrument for solving transboundary water problems. The International Fund for Saving the Aral Sea is the only regional organization in this direction. It is impossible to fully resolve the environmental problems that have accumulated for decades in the region without effective

interaction of all countries in the region and effective support of the international community. At the same time, Uzbekistan's position on the use of transboundary watercourses is as follows:

- The issues of transboundary rivers of Central Asia should be solved taking into account the interests of the entire population of the region;

- any actions carried out on transboundary rivers should not have a negative impact on the existing ecological and water balance of the region;

- The norms of international water law should become the main joint use of the resources of the transboundary rivers of the Central Asian region;

- Implementation of projects on transboundary rivers should be carried out on the basis of a constructive approach and a compromise that does not infringe the interests of other interested states and guarantees two necessary conditions for flow in the territory of the downstream countries;

- Preservation of ecological and water balance in the region.

Results and Discussion The Aral Sea problem today is considered very multidimensional. First, the parties and the expert community for many years of cooperation and study of the problem have developed very concrete measures that can improve the situation around the Aral Sea crisis. Such measures include, for example, the planting of plants on the dried bottom, which reduces the removal of salt, because dust and salt from the dried bottom is carried by dust and sand storms throughout the Aral basin. According to experts on the cultivation of seedlings of desert and fodder plants will be a unique scientific and educational base for the training of specialists in demand. Participants of some projects repeatedly attempted to sow the saxaul in the bottom of the Aral Sea, which helps to moisten the desert and stop dust and salt storms. Another effective measure is the creation of small local reservoirs in the delta of the Amu Darya, what scientists from Uzbekistan are currently engaged in. Also, conservation of individual parts of the reservoir is effective, as it happened with the so-called "Small Sea" in Kazakhstan, because there is no need to speak about the unified Aral Sea in 2018 - it was divided into two non-communicating reservoirs. All these measures at the local level due to certain engineering efforts will improve the situation.

Another problem hampering the stabilization of the ecological situation in Uzbekistan is the poor alignment of the interests of the states included in the Aral Sea region. The main disagreements on this issue in Uzbekistan arose with Tajikistan. Tajiks are smaller than other states of the Aral Sea area, because they live in foothills, in the headwaters of rivers. Therefore, they have no interest in saving and maintaining the purity of the water used by rivers. Moreover, the question of selling water to Uzbekistan remains open in Tajikistan, while the public of Uzbekistan suggests that all the waters of the Syr Darya, the Amu Darya and their tributaries are the property of the Aral Sea and require stopping the plundering of waters in the upper reaches of these rivers and stopping the dumping of production waste. This is a very tangible source of tension between states.

An agreement on the use of water resources in the Aral Sea basin should be concluded between Kazakhstan, Uzbekistan and other Central Asian states, in which it is clearly stipulated how much water each state uses and how much water and what quality it conveys to its neighbors. On the basis of this agreement, it will be possible to develop a system of compensation or determine the share of the contribution of states to investments in eliminating the consequences of the Aral

catastrophe.
In 1994, the International Fund for Saving the Aral Sea, established by the "Central Asian Five", was established. The main source of the fund's resources were one-percentage deductions from the national income of the founding countries.

The population of the Priaralie region in Uzbekistan has increased 3.6-fold over the past 50 years - To two billion people. In accordance with the State program for the development of the Aral Sea area for 2017-2021, aimed at improving the conditions and quality of life of the population of the region, it is planned to allocate funds from the state budget and attract investments in the amount of over 8 trillion. sum. The Development Fund of the Priaralie region under the Ministry of Finance of the Republic of Uzbekistan in 2018 plans to increase its income to 323.5 billion soums, preliminary expenses with this amount are projected in the region of 246.9 billion sums. In 2017, the fund's revenues amounted to 189.9 billion soums. Expended the same organization over the past year 123.5 billion soums. It is specified that in 2017 construction and installation works, reconstruction, major repairs and landscaping were completed in 167 facilities, including the development of the water supply system and increasing the population's access to safe drinking water and sewerage services. In Kazakhstan, a joint project with the United Nations to save the Aral Sea was launched. On the revival of the coast of the Aral Sea, the UN allocated $ 3 million. This project is aimed at three areas: social, economic and environmental. With the desiccation of the sea, people who traded in a fishing business can no longer feed themselves, leading such a way of life. The task of this project is to help people find an alternative, how to make a living. In the Priaralie zone, Uzbekistan over the past few years has implemented projects totaling more than 5.5 billion US dollars. These projects are financed by the Government of Uzbekistan and the International Fund for Saving the Aral Sea.

Life shows that people can adapt to any situation, and survive even in an environmental disaster. The tragedy of the Aral Sea is a worthy example of the resilience of the local population. Fisheries are developing in the nearest nearby lakes. The drained bottom of the sea is rich in natural resources - oil and gas. The industrial development of the bottom has already begun. International corporations conduct geological development in this area. And finally, the Aral Sea in the future can become a promising tourist destination. This is facilitated by the decision of the President of the Republic adopted in February 2017 aimed at economic development and employment of the population of the Muynak District in 2017-2018, as well as the Comprehensive Development Program for the Muynak District for 2017-2018.

CONCLUSION:

The Aral catastrophe has become the most tragic and vivid example of inexpedient use of water resources. Unfortunately, lessons from this terrible history were not rendered. To date, the volume of water in the Aral Sea has decreased by more than 13 times. Salinity of water has increased almost 10 times. The Aral Sea is not being restored - such is the sad verdict of scientists. But in our power to prevent the recurrence of this disaster, and to attend to the problem of water supply now.

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