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SOME GEOECONOMIC AND GEOECOLOGICAL SOLUTIONS TO MITIGATING THE ARAL SEA PROBLEM OR ENVIRONMENTAL RISK

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ABSTRACT

Today, the water problem, especially the drinking problem, is one of the most urgent problems in the world. Change of the natural environment under the human influence, many appropriations of natural landscapes are a sign that the above-mentioned problems are expanding day by day. Reducing the consequences of such problems and developing a solution is an urgent task today.

KEYWORDS

International Fund to Save the Aral sea, anthropogenic impact, green covers, Island, collector, seepage waters, water and energy resources.

INTRODUCTION

Along with the problem of drinking water, there is another important problem, which is caused by direct human impact on the natural environment. As a result of the construction of dams on many large rivers,

irrational land development, several large lakes around the world are almost on the verge of construction. There are many lakes that have problems due to such anthropogenic influence. Great Salt Lake (USA),

Hongjiannao Lake (China), Aral Lake (Uzbekistan, Kazakhstan) and others around the world. As a result of anthropogenic influence, it becomes possible to save the lakes that have dried up or are about to dry up on the earth only by anthropogenic means, or to somewhat mitigate its negative consequences. Over the years, many theoretical proposals and recommendations have been developed to solve the Island problem. But almost most of them have not been implemented in practice. Since the end of the 20th century, multilateral agreements and regional initiatives in the field of joint management of water and energy resources have been promoted in Central Asia, and countries have been actively participating.

The signing of a number of intergovernmental documents and the holding of international scientific conferences became an important factor in strengthening communication and cooperation between the countries of the Aral Basin.

Including: in 1993, in order to end the environmental crisis and improve the socio-economic situation in the Aral Sea basin, the leaders of the Central Asian countries established the International Island Rescue Fund (IRF);

Signing of the agreement on joint efforts to solve the problem of the Aral Sea and the Aral Sea, environmental health of the Aral region and ensure socio-economic development (Kyzil Orda, March 26, 1993);

Kazakhstan, Kyrgyzstan, Tajikistan. Development of the concept of solving the problems of the Aral and Aral Bay, taking into account the socio-economic development of the region of Turkmenistan and Uzbekistan (basic rules, developed in 1991-1992);

Drafting of the Charter of the International Fund for Saving the Island (IFRS) (Dushanbe, June 2002);

An international conference called "Development of cooperation on mitigating the consequences of

environmental disasters in the Aral Sea region" was held in Urganch (December 6, 2018);

Among these are events such as the agreement on the status of the International Fund for the Rescue of the Island (IFRC) and its organizations (Ashkhabad, April 9, 1999).

But the effect of the work done practically did not give its result in eliminating the ecological danger. The true essence of the decision of the Cabinet of Ministers "On measures to accelerate the establishment of "green covers" - protective forests in the dry areas at the bottom of the Aral Sea" as a result of the rising of sand, salt and dust from these areas into the air and falling into the environment to the residents of the Aral Bay region, aimed at preventing serious damage to the flora and fauna, as well as secondary salinity in the lands planted with agricultural crops, orchards and vineyards, negatively affecting productivity.

In the speech of the President of the Republic of Uzbekistan Sh. Mirziyoyev at the 75th session of the General Assembly of the United Nations, he noted that in order to improve the current situation, great work has been done to create two million hectares of new plant areas and tree groves, to form the soil layer, and made several suggestions.

The drying up of the Aral Sea remains the most urgent problem, especially for the peoples of the region. According to the data, due to the drying up of the sea and the acceleration of salinization, about 50,000 hectares of arable land became unsuitable for agricultural use in recent years. In place of the dry sea, the "Orolqum" desert has appeared, occupying an area of more than 5.5 million hectares. If immediate measures are not taken to prevent this environmental damage, the result has been adverse and incalculable environmental, social and economic damage.

Only by the end of the second decade of the 21st century, attention was paid to the area around the island and its southern and southeastern parts, and

practical work was done. And as a result, in the dry part of the Aral Sea, about one million hectares of saxophone plantations were established. As a result, there were opportunities to prevent the spread of thousands of tons of salty toxic sand and dust.

There are several other practical opportunities in the region to reduce the negative impact of Arol sand. With

this in mind, proposals have been developed and the approximate plan of tasks is shown in the table below (Table 1).

Table 1
Suggestions for reducing the negative impact on the region caused by the drying up of the Aral Sea.

| Directing the seepage waters leaving the territory of Khorezm region to the territory of the Aral Sea | | |
|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| No | Action plan | Result |
| 1 | Development of a large-scale map of Amudarya; | Economic importance. (Improving economic efficiency through the development of fisheries) |
| 2 | Creating a map of large collectors passing through the territory of the region; | |
| 3 | Determining the area where the artificial lake will be created using space velocity; | |
| 4 | Determining the distance from the area where the artificial lake will be created to the Island and the slope angle; | Social significance. (Employment of the population, creation of new jobs, development of domestic tourism) |
| 5 | Approximate determination of the artificial lake and its water capacity (calculation of average area and average depth); | |
| 6 | Determining the total consumption of water in the section of Amudarya passing through Khorezm region; | Ecological significance. Microclimate moderation occurs, the spread of saline dust into the environment is prevented |
| 7 | Directing the stormwater from the territory of the region to the lakes around the Aral Sea, etc. | |

The table was compiled based on the author's suggestions and recommendations.

If the given proposals were implemented, the expected results would have been even more effective, if plastic pipes had been placed in the Amudarya river bed, and if the storm water leaving the territory of Khorezm region had been diverted to the lakes around the Aral Sea, some ecological danger would have been avoided.

By diverting a part of the storm water flowing from the region to Sarikamish Lake directly to the Arol basin, it will be possible to pump 1.2-1.3 billion cubic meters of water into the lakes near the Arol every year.

This significantly reduces the negative impact of the Island on the region. Increases opportunities for the development of fishing. As a result, the ecological situation in the area will improve somewhat. The basis for the development of the ecosystem is created. In

order to implement this proposal, it will be necessary to create an artificial lake in the part of the left bank of Amudarya belonging to the region.

If the seepage waters are directed to the Amudarya through plastic pipes, firstly, less money will be required, secondly, less time will be spent on placing the hydrotechnical facility, and thirdly, less labor will be spent.

As a result, pollution of Amudarya waters is avoided when using plastic pipes. Water absorption and evaporation does not occur. Almost without losses, the water reaches all the way to the area occupied by lakes around the Aral Sea. Only plastic pipes need to be protected from the sun or insulated.

The total area of irrigated land in the region is 253,189 ha, and the water demand is 4,498 billion m³. (Table 2)

Table 2
Water use and management of water resources in Khorezm region

| No | Water resources | |
|----|----------------------------------------------------------|-----------|
| 1 | Average annual used water (need), billion m ³ | 4,498 |
| 2 | Area of irrigated land, (ha) | 253189 |
| 3 | Water limit, million m ³ | 3,648 |
| 4 | Shalt washable area, (ha) | 136922 |
| | - less than that salted | 44087 |
| | - average salted | 62459 |
| | - strong salt a n | 30376 |
| 5 | Total ditches: (km) | 10473 , 5 |
| 6 | Amount of outgoing water (billion m ³) | 1,741 |

The table was compiled by the author based on the information of the regional water management department.

But the water limit allocated for the region is 3.648 billion m³. In general, the area of saline washes in the region covers an area of 136,922 ha. Of this, the highly saline area corresponds to 30,376 ha, the average saline area to 62,459 ha, and the low saline area to 44,087 ha. The total amount of brine and other waste water is 1.741 billion m³. The total length of ditches and drains passing through the region is 10473.5 km.

If the seepage waters from the territories of the Republic of Turkmenistan and the Republic of Karakalpakstan are added, the quantity indicators will increase significantly, and it will become possible to

deliver up to 4-5 billion cubic meters of water to the island basin in a year.

Another advantage is that if the artificial lake to be created in the region is placed near the Amudarya, a certain part of the water in it will be purified as a result of filtration and seep into the river. This will quickly prove to be cost-effective, both economically and environmentally.

CONCLUSION

As a conclusion, it can be said that if the seepage and waste water from the region is used wisely and delivered to the lakes around the island through the Amudarya basin, first of all, the ecological environment

will be somewhat improved and the migration of salty sands to other places will be prevented. Secondly, opportunities for the development of fisheries will appear and serve to increase economic efficiency. Thirdly, the ground will be created for providing employment to the population, creating new jobs, and developing domestic tourism.

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