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THE PRESENT AND FUTURE OF THE ARAL SEA REGION

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Abstract. This article discusses the causes of the Aral Sea problem, its environmental and social consequences, the reforms being implemented in the Aral Sea region within the framework of the "New Uzbekistan" policy, and the scientific views of foreign scientists on the Aral Sea. The article also presents the author's personal thoughts and observations as a person living in the Aral Sea region.

Keywords: Aral Sea, Aral Sea region, environmental problem, "New Uzbekistan", UN, environmental crisis, international cooperation, green zone, environmental policy.

One of the most painful problems in the world's ecology today is the Aral Sea tragedy. Once the fourth largest inland body of water in the world, the Aral Sea is almost drying up to this day as a result of human misattribution to nature. The drying of the sea negatively affected not only nature, but also the lives of millions of people. The population living in the Aral Sea region, in particular, has been experiencing the severe consequences of this environmental disaster in their lives.

Until the 1960s, the Aral Sea was considered one of the largest inland bodies of water in the world. At that time, its area was about 68-69 thousand square kilometers, the fourth largest in the world. The sea was of great importance for fishing, transportation, and the region's climate. However, since the 1960s, the amount of water flowing into the Aral Sea has sharply decreased due to the fact that the bulk of the water from the Amu Darya and Syr Darya rivers is diverted to irrigate

cotton and other agricultural crops.

By the 1970s, the sea area had shrunk to approximately 60,000 square kilometers. During this period, the decrease in water levels accelerated, and environmental problems gradually began to be felt. In the 1980s, the Aral Sea area remained around 51,000 square kilometers, and fisheries were in crisis. Many fish species in the sea began to disappear.

By the 1990s the situation had become more severe. The area of the Aral Sea decreased to 36 thousand square kilometers, and the sea began to divide into northern and southern parts. This caused the ecological balance in the area to be completely derailed. By the 2000s, however, the sea area had declined even more than 28,000 square kilometers. The level of salinity of the water has increased dramatically, and natural life in the insular area has begun to be traced.

In 2005, the Aral Sea was almost completely divided into two separate bodies of water. In the 2010s, its eastern part almost completely dried up. By the 2020s, most of the Aral Sea had become a desert, and its area was estimated to be around 8,000 square kilometers. According to scientists, the Aral Sea has lost about 90% of its area.

As a person living in the Aral Sea region, I have grown up seeing the effects of this problem firsthand. I observe that the increased levels of dust and salt in the air during the summer, the extreme climate change, and the environmental problems are seriously affecting people's health and daily lives. That is why the Aral Sea problem is not just a simple environmental issue for me, but a pressing issue related to the life and future of our people.

The drying of the Aral Sea resulted in the aralqum desert, which covers an area of thousands of kilometers. Particles of salt and dust rising from the seabed are spreading through the atmosphere to remote areas. Scientists say this process is causing a decline in soil fertility, climate change, and an increase in various diseases.

Scientific studies have noted an increase in various diseases among the population in the Aral Sea region due to environmental problems. In particular, respiratory, cardiovascular, and allergic diseases pose a serious threat to the health of the population of the region.

According to scientific data, respiratory diseases are very common among children living in the Aral Sea region. The study found that the incidence of pneumonia in children in their first year of life was 64.9 percent, and in two-year-olds, it was 58.5 percent. It was also found that recurrent obstructive bronchitis

occurred in 43.6% of three-year-olds. In addition, allergic diseases such as atopic dermatitis were observed in 27.9% of children.

Studies have shown that the incidence of respiratory and cardiovascular diseases is increasing due to the presence of pesticides, heavy metal particles, and harmful chemicals in dust and salt storms in the Aral Sea region. According to scientists, severe sand and dust storms occur on average 20–30 days a year in the Aral Sea region, which leads to a sharp increase in PM10 and PM2.5 particles in the atmospheric air.

Another scientific source notes that the number of diseases of the circulatory system, malignant tumors, allergic reactions, and other diseases associated with environmental factors is increasing in the Aral Sea region. It is also noted that the average life expectancy in the area has decreased due to these environmental problems, reaching 62.1 years in 2008.

The Aral Sea problem has also been studied in depth by world scientists. American scientist Michael Glantz describes the Aral tragedy as "one of the greatest environmental lessons of humanity's misguided relationship with nature." In his research, he scientifically proved that mismanagement of water resources leads to environmental disasters.

Russian scientists V.M. Kotlyakov and A.S. Zonn conducted scientific research on climate change and soil salinization in the Aral Sea region. They believe that the drying of the Aral Sea has also had a serious impact on the climate of Central Asia.

Kazakh experts, on the other hand, have undertaken a number of scientific projects to preserve the North Island. In particular, the construction of the Kokaral Dam helped to partially restore water volume in the North Island area. This experience shows that international cooperation is important in the way of preserving the island.

Uzbek scientists have also conducted extensive scientific research on the study of the Aral Sea problem. Especially, the research of geographers is important in studying the natural geographical conditions of the Aral Sea region, its ecological changes, and their impact on the lives of the population.

Fattoh Baratov, one of the famous Uzbek geographers, conducted important scientific research on the natural geography and environmental problems of the Aral Sea region. In his scientific works, the scientist emphasizes that the drying up of the Aral Sea has had a serious impact on the nature of Central Asia. He believes that as

a result of the sea's shrinkage, there have been dramatic changes in the climate of the region, leading to increased desertification. Fattoh Baratov scientifically substantiated the need for rational use of nature and expansion of green areas to restore ecological balance in the Aral Sea region.

Another famous geographer, Abdugani Rafikov, conducted in-depth research on the ecology and geographical problems of the Aral Sea. The scientist's research scientifically analyzed the effects of the Aral Sea drying on soil salinization, air pollution, and negative impacts on public health. A. Rafikov emphasizes that rational use of water resources is one of the most important factors in reducing the Aral Sea problem.

Uzbek scientists have also developed scientific recommendations for reducing dust and salt storms by planting saxaul and other desert plants on the dried seabed. Today, these scientific recommendations are of great practical importance in environmental projects implemented within the framework of the "New Uzbekistan" policy.

In my opinion, the scientific research of Uzbek scientists as a person living in the territory of the islet is very important to us. Because these studies not only study environmental problems, but also serve to create a healthy and green environment for the future generation. I believe that in the future the Aral Sea region will become a green and prosperous place again.

In recent years, the island problem has also been raised several times in the United Nations pulpits. An initiative was put forward by the president of Uzbekistan at the UN General Assembly to declare the insular region a zone of environmental innovation and technology. The initiative was supported by the international community.

A trust fund for Human Security for the islet area was established with UN cooperation. Through this fund, significant work is being done to develop drinking water, medical, educational, and environmental projects for the population of the region.

UN experts consider the Aral Sea problem not only a regional, but also a global environmental problem. Because salt and dust particles rising from the bottom of the Aral Sea are reaching the territories of other countries.

Today, scientists and environmental experts are making various scientific predictions about the future of the Aral Sea region. They believe that if environmental projects are consistently implemented and water resources are used

wisely, there is a chance to partially restore the ecological state of the Aral Sea region in the future. Otherwise, desertification, soil degradation, and climate change may worsen.

According to modern geographical studies, the process of desertification in the Aral Sea region is still ongoing. Scientists, using GIS and remote sensing technologies, have studied ecological risk zones and noted that soil degradation has reached high levels in some areas.

Recent scientific research has also studied the green biomass indicators of the Aral Sea region. Satellite data from 2000–2024 show that green spaces are gradually increasing in some areas as a result of greening efforts. This indicates that the planting of saxaul and other desert plants is having a positive effect to some extent.

According to experts from the UN Development Programme, the development of "flexible agriculture" systems in the Aral Sea region will be important in the future. That is, growing crops that require less water, scientifically organizing farming on saline lands, and widely introducing water-saving technologies can ensure the economic stability of the region.

In conclusion, the Aral Sea problem is a great ecological lesson for humanity. This tragedy shows how important it is to use natural resources wisely. Scientific research by foreign scientists, UN initiatives, and reforms implemented within the framework of the "New Uzbekistan" are playing an important role in improving the ecological situation of the Aral Sea region.

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