



APPROACHES TO ADAPTATION TO CLIMATE CHANGE IN THE ARAL REGION

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ANNOTATION

The article deals with the issues of studying and assessing the environmental risk for aquatic ecosystems in the South Aral Sea region. The methodological foundations for assessing the sustainability and ecological well-being of water bodies are associated with solving the problem of quantitative description of a large number of processes that determine the properties of ecosystems.

KEY WORDS: *Aral Sea region, aquatic ecosystems, stabilization, environmental risks, processes, critical loads*

INTRODUCTIONS

Recently, one of the serious problems is the anthropogenic deterioration of the ecological state of inland water bodies - the main reservoirs of fresh water on Earth, as a result of which the rate of pollution of most water bodies has increased. Environmental risk, first of all, the probability of occurrence of negative changes in the natural environment, or long-term adverse effects of these changes arising from the negative impact on the environment.

MATERIALS AND METHODS

The Aral catastrophe is an example of this: it aggravated the climatic conditions in the region, increased aridity and extremely hot periods in summer, and lengthened cold and harsh winters. Over the past decades, the number of days with temperatures above 40°C in the Aral Sea region has doubled. A new salt desert with an area of 5.5 million hectares has appeared on the exposed part of the Aral Sea. Over 90 days a year, dust storms rage over it, carrying more than 100 million tons of dust and toxic salts into the atmosphere for many thousands of kilometers annually. The ongoing and expected climate change is already having a significant impact on the socio-economic development of the country as a whole, the life and health of its citizens.

The Main Negative Impacts of Climate Change in Uzbekistan Include

- intensification of the general aridity of the climate due to an intensive increase in air temperatures, an increase in the duration of the dry hot period of the year, which causes an increase in evaporation and an increase in water losses in irrigation zones;
- increased fluctuations in precipitation and, as a result, an increase in the frequency of occurrence of hazardous phenomena associated with the water factor - mudflows, floods, as well as the formation of extremely deep low water;
- increasing frequency, severity and scale of droughts intensifies desertification processes, exacerbates the Aral Sea crisis, threatens the extinction of tugai forests, coastal and aquatic ecosystems of the Amudarya delta;
- an increase in air temperature and humidity increases the risk to public health, which is expressed in an increase in the number of citizens suffering from cardiovascular, transmissible and infectious diseases;

Recent years have been characterized by a steady increase in allergic diseases worldwide, both among adults and children. The incidence of allergies largely depends on the climatic and geographical conditions of the area, the development of industry, agriculture, ethnographic conditions and many other reasons. Therefore, the most important task of the present time is to reduce the detrimental impact of the Aral Sea crisis on the environment and the livelihoods of millions of people living in the Aral Sea region. The Aral Sea played an important role in the development of the region's economy, its industrial sectors, in providing



employment for the population, in the formation of a sustainable social infrastructure. In the past, the sea was one of the richest fishing grounds in the world. More than 80 percent of the inhabitants who inhabited the Aral coast were engaged in the extraction, processing and transportation of fish and fish products. The fertile lands of the Amudarya and Syrdarya deltas, as well as highly productive pastures, provided employment for more than 100 thousand people in the field of animal husbandry, poultry farming, and growing crops. The sea also served as a climate-regulating reservoir and softened sharp fluctuations in the weather throughout the region, which favorably influenced the living conditions of the population, agricultural production and the ecological situation. Now the economy is suffering from the Aral catastrophe, the unemployment rate, external migration have increased, the quality of life of the local population has fallen. In recent years, the leadership of Uzbekistan has paid serious attention to the region. Thanks to the consolidation of the efforts of the Government and international institutions, new jobs are being created in the Aral Sea region and infrastructure is being developed.

Adaptation is a key component of the long-term global response to climate change to protect people, livelihoods and ecosystems.

Adaptation approaches to climate change may differ depending on the situation in a particular area. Adaptation efforts are based on national initiatives, broad participation and a fully transparent approach. In order to integrate adaptation measures into relevant socio-economic and environmental strategies and actions, it is necessary to take into account the interests of vulnerable communities and ecosystems, take into account the gender factor, be based on the best scientific knowledge, traditional experience and knowledge of the local population. The key elements of adaptation are: assessing the impact of vulnerabilities and risks, planning adaptation measures. implementation of adaptation measures, monitoring and evaluation of adaptation measures.

In addition, any negative impact, in turn, leads to a violation of the stability of the ecosystem. To assess the real state of a natural object and monitor its further changes, two fundamentally different approaches are used: biological and physico-chemical. One of the indicators of environmental resistance to the impact of anthropogenic factors is the values of critical loads calculated for various pollutants.

CONCLUSION

Thus, the methodological foundations for assessing the sustainability and ecological well-being of water bodies are associated with solving the problem of quantitative description of a large number of processes that determine the properties of ecosystems and the ability of systems to maintain these properties unchanged, or return to their original state after losing it over a certain time interval. An environmentally safe system can be called a system with the maximum optimal and diverse products that exist indefinitely in a dynamic environment. Strengthening of the general aridity of the climate due to an intensive increase in air temperature, an increase in the duration of the dry hot period of the year, which causes an increase in evaporation and an increase in water losses in irrigation zones. An increase in air temperature and humidity increases the risk to public health, which is reflected in an increase in the number of citizens suffering from cardiovascular, vector-borne and infectious diseases.

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