

Research Article

## **Historical Stages in the Strategy of Environmental Safety and Development of the Aral Sea Region**

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### **Abstract**

The article deals with the issues of historical stages in the strategy of environmental safety and development of the Aral Sea region. The current environmental situation on the planet, the deterioration of the environment and the rapid depletion of natural resources require a change in the model of interaction between society and nature. The environmental policy of the Republic of Uzbekistan (the Aral Sea region) aims at protecting ecosystems, creating harmonious, environmentally safe living conditions for the population.

**Keywords:** *Environmental policy, security, regional development, society, nature, environment.*

### **Introduction**

In recent years, the growing threat of a global environmental crisis has had a major impact on the socio-economic and demographic development of various countries around the world. The complication of the environmental situation leads to an increase in morbidity and a reduction in the life expectancy of the population. The depth of environmental problems is evidenced by the data of the Club of Rome, according to which most of the world's forests have already been destroyed, the bio resources of the world's oceans and the planet's biodiversity are disappearing.

Global environmental pollution has led to climate change on the planet and the deterioration of human health. The current environmental situation on the planet, the deterioration of the environment and the rapid depletion of natural resources require a change in the model of interaction between society and nature. This problem has become particularly important in

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the context of the crisis, in which the decline in production was not accompanied by a similar decrease in the volume of harmful emissions into the environment.

According to the researchers, in a number of regions, increased content of harmful substances in the atmosphere made it less suitable for normal life. Scientists have stated numerous facts of the death of forests, shallowing of rivers, impoverishment of the seas, pollution and depletion of the soil, the disappearance of rare species of animals and plants. At the turn of 1999-2000, according to experts, a real threat to human health appeared, the number of genetic abnormalities increased, and the life expectancy significantly decreased [1].

The destruction of the single economic space led to the collapse of economic ties, which caused significant structural changes in the national economy of the formed states. The production of environmental equipment has stopped. All the states formed from the former USSR did not have the necessary resources, and, first of all, for the environmental sphere [2].

The positive and negative experience gained in recent years in solving environmental problems requires a comprehensive analysis and generalization. It is necessary to form an objective understanding of the danger of environmental pollution, the threat of destruction of forests, drying up of rivers and seas, pollution and depletion of soil, the disappearance of rare species of animals and plants. Knowledge of the environmental situation will enable the society to participate in the struggle for the purity of the environment, will help to overcome the dangerous consequences of industrial development that have put people's lives and health at risk [3].

The content of the environmental policy in various states of the CIS countries that emerged on the territory of the former USSR states at all levels was determined not only by the scale of the emerging challenges, but also by the specifics of the conditions for transition to the market. The acute nature of the biosphere tension was accompanied by the financing of this policy at a level that did not even allow maintaining the balance of the degraded ecosystems [4].

The drying up of the Aral Sea has led to a number of socio-economic and environmental consequences: land degradation, decline in biodiversity, climate change, deterioration in the health of the population of the region. Building on the successful experience of the previous Population Support Program, a new phase is underway in the Aral Sea region, where the efforts of four UN agencies in Uzbekistan (UNDP, UNESCO, UNFPA and UNV) are brought together to mitigate interrelated risks to human security, as well as ensure sustainable financial support.

The content of the environmental policy of various states of the CIS countries, at all levels, was determined not only by the scale of the emerging tasks, but also by the specifics of the conditions for the transition to the market. The deep nature of the tension in the biosphere was accompanied by the financing of this policy at a level that did not even allow maintaining the balance of degrading ecosystems [5]. The main reason that the costs did not bring the expected effect is that environmental protection measures were focused on combating the consequences of irrational, only extensive growth of production, and not on its intensification, technical improvement and change in its structure, which leads to the degradation of ecosystems.

A new approach to interaction in this direction will be based on the initiative of the President of Uzbekistan to create a zone of environmental innovations and technologies in the Aral Sea region. In this context, UNDP offers global experience in the implementation of innovative solutions for the integrated achievement of the Sustainable Development Goals in the region. As a result of the project implementation, over 2,230 rural residents will have access to drinking water more than 1,000 representatives of vulnerable communities will expand their opportunities for earning income in small and medium-sized businesses, as well as in the field of ecotourism. Adaptation to climate change will be facilitated through afforestation initiatives on the dried bed of the Aral Sea. All this is gaining great urgency and relevance in the context of global climate change and worsening environmental disasters. Today, there is a growing understanding in the world that the negative changes associated with the Aral Sea catastrophe pose a serious threat not only to the countries of Central Asia, but also to sustainable development on a global scale.

### **Results and Discussion**

The stability that remains today is clearly temporary and apparent. The environmental crisis is growing - loss of biodiversity, desertification, land degradation, destruction of animal and plant habitats, landscape changes, pollution of water and land ecosystems, destruction of the ozone layer, depletion of natural resources, deforestation, air pollution from vehicle emissions - this is not a complete list of global environmental problems that can lead to disruption of the homeostasis of natural communities and changes in human genetics. Anthropogenic pressure without taking into account the natural development of planetary phenomena can lead to the destruction of the biosphere and humanity itself [21]. In addition to direct damage to nature and the environment as a whole (destruction of the earth's surface, pollution of rivers), interethnic conflicts have completely changed the priorities of social

development, as a result, environmental issues have receded into the background. When the population is busy with the problems of everyday survival, there is no time for the natural environment. If in the late 1980s the majority of population groups considered social and environmental contradictions as one of the priority problems, already in the 1990s environmental issues were among the top ten priority problems of public consciousness [22]. In recent years, Uzbekistan, including Karakalpakstan, has developed significant legal, legislative, socio-economic aspects to ensure environmental safety. As you know, the main goal of the environmental policy of the government of Uzbekistan is the strategy of rational use of natural and biological resources.

In 1992, the law of the Republic of Uzbekistan “On Nature Protection” was adopted, which established the legal, economic and organizational foundation for the protection of the natural environment and the rational use of the natural resources of our republic. The main purpose of this law “On Nature Protection” is to ensure a balanced interaction between society and nature, to protect natural resources, ecosystems, as well as unique natural monuments, to ensure the guarantee of citizens' rights to an optimal habitat [6].

It is well known that the objects of nature protection are the earth, subsoil, water, flora and fauna, atmospheric air, which together form ecological systems, etc., the provisions and paragraphs of the law of the Republic of Uzbekistan “On Nature Protection” give grounds to recognize it as the Main Law in the field of environmental protection and nature management [1].

Currently, there are other laws of the Republic of Uzbekistan that are synergistic with each other: the Law of the Republic of Uzbekistan “On Water and Water Use” (6.05.1993), “On the protection of atmospheric air” (27.12.1996), “On Waste” (5.04.2002), “On Subsurface Resources” (new version 13.12.2002), “On the protection and use of Wildlife” (26.12.1997), “On the protection and use of Flora” (26.12.1997), “On Protected natural territories” (3.12.2004), “On the Forest” (15.04.1999). In the complexity of all these laws form the environmental legislation of the Republic of Uzbekistan.

One of the most significant legal documents on the use of water resources is the law of the Republic of Uzbekistan (1993) “On Water and Water Use”, as amended in December 2007 [2]. This law of the Republic of Uzbekistan introduces responsible aspects for the regulation and rational use of water resources for the economic use of the population and the protection

of water bodies from various types of pollution; prevention and elimination of various negative impacts on water bodies; development of measures to improve the state of water bodies; legal framework for representing the interests of various industrial enterprises, organizations, farms and residents in relation to water resources.

Laws and resolutions of the Cabinet of Ministers regulate many of the main points in the strategy of public administration, use and protection of water resources. In accordance with the priority directions of the government of the Republic of Uzbekistan in the field of integrated environmental management, including water use, the Commission of the Oliy Majlis, along with state and interested parties, are developing a new version of the Law “On Water and Water Use”. In the Concept of Integrated Sustainable Water Use in 2002, the main goals and objectives for the rational cost-effective management of water resources and the implementation of land reclamation measures for the next 2008-2011 were set. These strategic directions, of course, provide for the prevailing improvement in land use by improving the collector and drainage system, increasing the efficiency of water consumption by the agricultural sector through the major modernization of the entire irrigation system of farmland.

The direction in the development of the irrigation and drainage sectors in 2001 and the adopted National Irrigation Development Program for 2000-2005 are very interrelated with the Concept. Together, these documents are a priority tool for the use of environmental policies for water management, which are of significant importance for agriculture and the environment.

As it is known that the Republic of Uzbekistan is actively involved in Supporting the European Union Water Initiative, where this political support is backed up by the commitment of the European Union to achieve the main priority tasks related to water bodies. For example, reducing the number of people without access to safe drinking water by 2015, developing the water infrastructure by Institute of Water Resources Management (IWRM) or planning of effective water use [18, 19]

The development of large-scale irrigation in the Amudarya basin and, accordingly, the increase in the volume of irrevocable water withdrawal led to a sharp reduction in the flow of water to the delta. Due to the incomplete provision of a harmonious water-salt exchange in the wetlands of the lower reaches of the Amudarya, the indicators of the quality of drinking water and, accordingly, the environmental situation in general began to decline. The drying up of the Aral Sea and the loss of its natural biological and ecological connection with its

bays has led to a sharp deterioration of the balance in the ecosystems of the Aral Sea region. As a result of the steady decline in this inflow since 1960, lakes began to play the role of natural evaporators with a sharp decrease in water volumes and, as a result, an increase in its mineralization. The hydro regime of water supply of water bodies, especially in low-water years, should proceed from the priority strategy of their environmental and social importance. In this regard, a huge priority belongs to stable reservoirs and lakes, since in low-water years they should be stable and play the role of refugiums of fauna and flora biodiversity [4, 15, 18].

In the period from 1976 to 1980 of the XX<sup>th</sup> century the results of scientific research on the Program of the Aral Sea and the Aral Sea Region were discussed at various meetings and All-union scientific forums, held in Alma-Ata in December 1977 (“The Second coordination meeting on the study of the impact on the environment and the assessment of the socio-economic consequences of lowering the level of the Aral Sea”), in Moscow in November 1979 (“Scientific bases of measures to prevent the negative consequences of lowering the level of the Aral Sea”), in Nukus in December 1980 (Visiting session of the Presidium of the Academy of Sciences of the UzSSR in the form of the conference “Problems of the Aral Sea and the Amudarya delta”) etc.

During that period (1999-2000), a different attitude to the problem of rational use of water resources in Central Asia for agricultural needs and the need to develop a project for the transfer of waters from Siberian rivers was revealed. Moreover, as the basis for the adoption of such a conclusion on this issue, the need for the development of technical and economic documentation on the Aral problem began to form [3, 4].

The most comprehensive view of the results on the Aral problem obtained in those years are presented in the journal “Problems of Desert Development” (1979, No.2), which was published in Ashgabat (Republic of Turkmenistan). It is also home to the center for Combating Desertification and the Desert Research Institute of the Academy of Sciences of Turkmenistan, which initiated regular scientific conferences on the problems of desert development and its protection [9, 15]. The introductory article in one of the issues of the journal “Problems of Desert Development”, prepared by the director of the Institute of Deserts, an academician A. G. Babayev (1979), was devoted to the protection of the natural environment of the Aral Sea basin, where he noted that this issue is a matter of national importance. Also, professor Babayev noted that the most urgent problem is the protection of deserts in the context of the development of natural resources, the solution of this problem should be understood as rational use of natural resources, and warned that during the rapid

scientific and technological revolution, the anthropogenic impact on nature becomes irreversible. In his publication, he suggested to think about possible negative phenomena that may arise, since losses are irreparable, and that all of this is irreparable [6]. For him, there was no doubt that the main cause of ecological problem of the Aral Sea was the expansion of irrigated areas for monocultures, but he still assumed that this problem could be solved with the help of water resources that could be attracted from outside [6].

The main conclusions of scientific works on the problem of the Aral Sea and anthropogenic desertification of the Aral Sea region within the framework of the State Program from 1976 to 1980 were presented by I. P. Gerasimov [7, 8, 9]. He rightly pointed out that as a result of these studies, unique materials were obtained. In 1980, at a meeting in the SCST, they concluded about the formation of a Technical and Economic Report on the problem of the Aral Sea by 1985. At the same time, the SCST gave a task for conducting research on the topic: “To study the impact of water management measures on the Aral Sea regime and the socio-economic processes of development of the Aral Sea region associated with the decline in its level. To develop scientific bases and measures for the rational use and protection of natural resources in the conditions of anthropogenic desertification of the Aral Sea region” The Institute of Geography of the USSR Academy of Sciences was designated as the main organization for conducting these studies.

With the collapse of the Soviet Union in 1991, work on the implementation of the tasks set out in the Concept of the Conservation and Restoration of the Aral Sea and the stabilization of the Ecological situation in the Aral Sea region [12] began, and all states located in the Aral basin, realizing that the joint rational use of available water resources is of paramount importance for their existence, on February 18, 1992 in the city of Almaty (Republic of Kazakhstan) signed the “Agreement on cooperation in the field of joint management of the use and protection of water resources of interstate sources”, and on March 26, 1993 in the city of Kyzyl-Orda signed an “Agreement on joint actions to solve the problem of the Aral Sea and the Aral Sea region, environmental improvement and socio-economic development of the entire region of the Aral Sea basin”.

Within the framework of these International Agreements, it was envisaged to form an Interstate Commission for Water Coordination (ICWC), whose goals include solving issues of rational water resources management and water separation, maintaining the main structures, interstate channels and channels in working condition, water conservation on trans boundary watercourses, forecasting and accounting of runoff, etc. [12, 13, 14]. This ICWC has formed close cooperation with UNESCO, the World Bank, UNDP, UNEP and other

international organizations since the beginning of its activities, all of which have offered large investments as major donors for the implementation of the "Program of Concrete actions to improve the environmental and socio-economic situation in the Aral Sea basin".

Currently, the ICWC States operate within the framework of the International Commission on Irrigation and Drainage (ICID) project, and also have the status of legal members. A separate group for the Aral Sea basin has also been formed in the structure of the ICID [13, 15, 19].

From the 90s of the XX<sup>th</sup> century to the present day, with the active participation of various international funds, a large number of projects for conducting phytomelioration on the dried-up part of the bottom of the Aral Sea, where large areas of the former sea bottom of the Aral Sea were eventually populated with forest plantations [16, 17, 19]. For the Republic of Karakalpakstan, a particularly significant event was the implementation of the project for the formation of a hydro technical system in the delta of the lower reaches of the Amudarya, which includes all collector-drainage channels and channels, polders in former lakes [18].

It should be noted that the Main policy of environmental security of the Republic of Uzbekistan is carried out on the basis of the Constitution of the Republic of Uzbekistan, General Legislation, the Concept of National Security of the Republic of Uzbekistan, Environmental aspects within the framework of the Rio Declaration on Environment and Sustainable Development [7], taking into account all the obligations of the Republic, arising from international conventions and the legal experience of developed countries [10, 15, 18]. The Republic of Uzbekistan, like all countries in the post-soviet space, inherited an economy with production, equipped with outdated technologies and equipment that intensively pollute the environment. In the context of the transition to a market economy, the main task was the balanced interaction of macroeconomic planning with environmental policy, as well as its integration with other areas of the state [20].

Speaking about the need to combine efforts to overcome the negative consequences of the Aral Sea crisis and improve the socio-economic situation in the Aral Sea region, it can be noted that the established International Fund for Saving the Aral Sea (IFAS) is the only regional organization in this direction, which can become an effective mechanism for interaction between our countries.

At present, much attention of the Government of Uzbekistan is paid to the implementation of practical measures for the development of water cooperation in the region, aimed at improving the ecological situation in the Aral Sea region. It was proposed to form a single list and ensure the joint preparation of innovative projects, taking into account the experience of



implementing such projects in ecologically unfavorable regions of the world, as well as the allocation of long-term concessional loans and grants for these purposes.

For these purposes, in 2018, the International Innovation Center of the Aral Sea region was created under the President of the Republic of Uzbekistan, which is designed to intensify efforts in the field of research, technology transfer and education in conditions of salinity. Scientists have proved that planting such a desert plant as saxaul on the dried bottom will help retain a layer of sand and salt, change the structure of the soil, and restore biodiversity.

The initiative of the President of Uzbekistan to create a UN Multi-Partner Trust Fund for Human Security for the Aral Sea region, voiced at this session, found a bright response in the world community. A year later, on November 27, 2018, the Trust Fund was launched at the UN headquarters in New York.

In order to widely inform the public about the goals and objectives of the fund, to raise funds for the implementation of the tasks set before it, various events have been organized with the participation of international donor organizations and financial institutions... One of such significant events was the international high-level conference “Aral Sea - a zone of environmental innovations and technologies”, held on October 24-25, 2019 in Nukus under the auspices of the United Nations. It was attended by representatives of many countries, as well as the UN, World Bank, Asian Development Bank, European Investment Bank, European Bank for Reconstruction and Development. At the conference, topical issues were raised related to the need to unite the efforts of the international community aimed at overcoming the consequences of an environmental catastrophe, improving the living conditions of the Aral Sea residents.

### **Conclusion**

In conclusion, the environmental policy of the Republic of Uzbekistan, including for the Aral Sea region, is aimed at the action of protecting individual components of the natural environment, protecting ecosystems, creating harmonious, environmentally safe living conditions for the population. The implementation of the environmental policy strategy must be one of the conditions for the sustainable development of the economy and society as a whole.

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