Environmental Management in Central Asia

R.A. Pritula, *Ye.Ye.* Pritula and *Zh.G.* Jabassova*

Kostanay Engineering and Economics University named after M. Dulatov, Kostanay, Kazakhstan

Abstract. The environment is an increasingly debated topic in international society, politics and the media. This is all the more true in the context of climate change, which is readily apparent every year. The processes associated with climate change strongly influence the state and shape of the environment of which we humans are an integral part. The factor of dramatic population growth also intervenes in the situation. The object of the study is Central Asia with extreme climatic conditions. The environment has a negative impact on living conditions, health and development. Agricultural production is the main branch of economy of all Central Asian republics. The environment and related threats affect the economic situation of the region. Human activities also have a negative impact on the shape and condition of the environment in the whole region. Inefficient and unsustainable management of agriculture and water resources is the cause of the unfavourable situation. Environment and security are seen as two inseparable areas that interact and influence environmental management.

1 Introduction

The region of Central Asia, more precisely post-Soviet Central Asia, is chosen as the empirical field of the study. From an environmental point of view, the Central Asian region offers a very diverse range of phenomena to which both local societies and the international community have to respond. Environmental management tools are usually applied in developing countries, which tend to be the most exposed to negative environmental factors. At the same time, they intervene in different sectors of society, and the subjects implementing its tools are diverse in nature.

According to C.J. Barrow [1], one of the authors who has devoted his work to this issue, environmental management can be defined as a goal or vision related to the improvement of the environmental situation. It can also be an attempt to control the process, the application of appropriate tools and other possible actions related to this issue. As mentioned above, the purpose of these activities related to environmental management is logically to reduce the risks and impacts of threats, in this case environmental threats.

* Corresponding author: zhannadzhabasova@gmail.com

2 Materials and methods

The success of scientific research depends largely on the ability to choose the most effective research methods, only they can achieve the goal. The article used special methods that are very specific in nature [2]. Empirical methods include observation and self-observation; diagnostic methods are presented in the form of studying work experience; interpretive methods include analysing the material in terms of development with the allocation of separate phases. These methods are aimed at theoretical study of the material, literary sources, study and analysis of literature and documents, generalisation.

3 Results and discussion

As the World Resources Institute, a global non-profit research organisation, notes in its 2002 guide, we address the following questions related to environmental governance. It is important to ask who makes environmental decisions, how they are implemented, and what they are about. These are fundamental questions to ask in the case of environmental governance.

There are a number of authors who deal with the problem of environmental governance. These include, for example, Magali A. Delmas and Oran R. Young of the University of California. In their joint publication entitled "Managing for the Environment" [3], they bring together perspectives from economics, management and political science to identify and characterise innovative approaches to governance in relation to the environment.

Another area that is closely related to the topic of this paper is environmental security. Within this scientific field, there is a link between security studies and environmental protection. Thus, threats to the state or individuals are environmental in nature (e.g., desiccation or pollution of water resources, hazardous storage of radioactive waste, and other cases). The term "environmental scarcity" was introduced by the Toronto School of Economics. For example, it considers an environmental crisis, shortage of natural and mineral resources [4].

Central Asia is a region that faces many serious environmental challenges. The very extreme climatic conditions thatcharacterise much of Central Asia have a significant impact on the lives of their inhabitants. However, in many cases, human activities also have a negative impact on the shape and condition of the environment throughout the region [5]. The Aral Sea and its desiccation, which reaches the level of ecological catastrophe in its consequences, is generally regardedas one of the most striking and pressing environmental problems in modern human history (Fig.1).

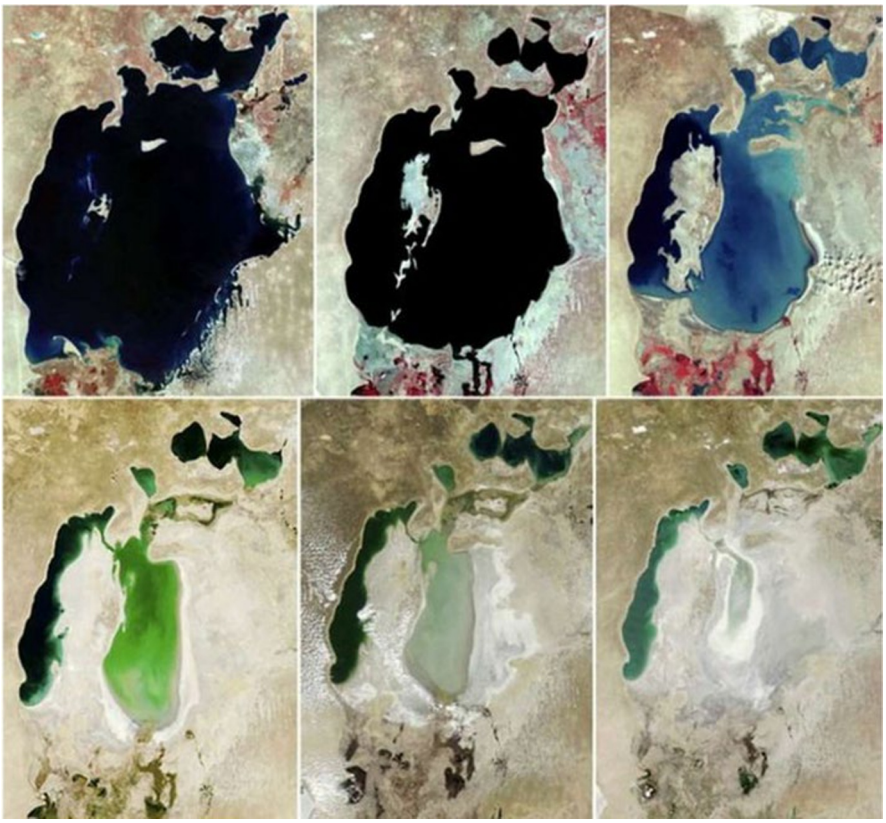

Fig. 1. Desiccation of the Aral Sea 1977 - 2024

The main reason for the unfavourable situation in the Aral Sea is probably the inefficient and unsustainable agricultural and water management applied under the Soviet centralised system that was established many decades ago. The consequences persist to this day. The post-Soviet republics of Central Asia also face the presence of toxic radioactive waste that has been stored on their territory since Soviet times. Local residents, the government as well as the international community must deal with a significantly degraded environment that has a negative impact on living conditions, health and development [6]. Despite its vast watershed (above), the Aral Sea receives almost no water due to irrigation canals, which, as the photo below shows, take water from the Amu Darya and Syr Darya along hundreds of kilometres of their course through several countries (Fig. 2). Among other consequences is the disappearance of many species of animals and plants.

Fig. 2. Irrigation canals of the Aral Sea

The economies of all Central Asian republics are largely dependent on agricultural production. From this fact it can be concluded that the environment and related threats affect the economic situation as well as the economic growth of Central Asian the states. An example of this is the aforementioned Aral Sea, in the immediate vicinity of which soil salinisation occurs, undermining an important source of income for agricultural communities. However, salinisation is not the only problem facing the region [7]. Other phenomena that can be observed here are drought, soil erosion, high seismicity, frequent landslides, and problems related to radioactive waste.

Since the Aral Sea is located on the territory of two Central Asian states, its desiccation affects events and politics in both countries. The Aral Sea and its desiccation are among the most serious environmental disasters in modern human history. One can read about several projects aimed at improving the undesirable situation. The problem does not concern only one of the Central Asian countries, and so in this case we are faced with different approaches of the two states, which have to deal with the sad legacy left by the Soviet administration and then the approach of individual governments of the newly formed Central Asian countries [8].

The main providers of funds are international institutions and organisations such as the World Bank, the European Union, the United Nations, Non-Governmental Organisations and others. Due to the lack of financial and professional capacity they established in the early 1990s, for many years representatives of all five Central Asian republics supportedthe International Fund for Saving the Aral Sea platform, through which they tried to attract international attention and thus gain support for the restoration of what was once the fourth largest water area in the world.

4 Conclusions

In conclusion, several ways of providing assistance can be identified: providing financial resources, expert advice and background information, conducting research activities, introducing special tools, conducting specific fieldwork, supporting policy coordination on

a regional basis or organising information meetings and workshops. The activities of these international organisations and institutions usually go hand in hand with a global understanding of environmental security, which can be seen, for example, in the so-called global public goods, which include global health. Environment and security are increasingly seen as two indivisible domains that interact. This evolution can be seen in the growing attention of the international community to the environmental problems of Central Asia and the willingness of individual Central Asian countries to invest in stabilising and rehabilitating ecologically degraded areas.

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