International Journal of Academic Pedagogical Research (IJAPR)
ISSN: 2000-004X
Vol. 3 Issue 4, April – 2019, Pages: 46-47

The Problem of the Aral Sea and The Aral Sea Basin, Its Consequences and Solutions

Quchqarova Dilbar, Ataeva Nazira Polvonnazarovna, Aminov Bexzod Baxrom ugli

Urgench State University, Faculty of Natural Sciences, Geodesy, Cartography, Cadastre, Geography, Urgench, Uzbekistan.

Abstract*: This article discloses information on the geo-ecological problems of the Aral Sea, coming out from the water drying and its positive solutions.*

Keywords: The Aral Sea basin problem, sand covers, geoecological zone, meliorative zone, salinity

1. INTRODUCTION

The nature had existed even before the appearance of humanity, and it developed by its own laws. Human beings emerged in nature, grew up, reached the present level of maturity. Man is also a part of the nature. However, owing to the development of the personality society, nature and human relationships have changed, and human beings have been actively affecting on the nature. As a result, many regional -environmental problems emerged. Especially, the disorderly use of natural resources has led to climate change and soil degradation. This, in turn, demands to protect these resources continuously. Moreover, shortage of water resources on resent days limits the opportunity of using it for watering, in industrial and household life. The disorderly usage of natural resources and pastures and increase in the recreational pressure on natural landscapes are leading to the decrease of the country's geochemical productivity. The salinity of the earth and the water's degradation are going on.

2. DISCUSSION

Owing to the unreasonable and inappropriate use of water resources in irrigated agriculture in Central Asia, the Aral Sea and the Aral Sea basin problem arose. The Amu Darya and Syrdarya basins are one of the largest irrigated fields. The favorable soil and climatic conditions here provide a large number of crops in irrigated areas. Many river basins and channels have been built and put into operation in these river basins since 1960 as a result of which many irrigation and land reclamation activities have been implemented, which has been accelerated in the past. The waters of the Amudarya and Syrdarya, which flow into the Aral Sea, have dwindled. Since 1961, the flow of rivers into the Aral Sea has dropped dramatically due to the abundance of irrigation water [1].

Over the next decade, the increase in water use for the development of industry and irrigation, as well as natural droughts, have led to a gradual decline in the Aral Sea water, even to a complete disruption. As a result, the natural environment and ecological situation of the Aral Sea Basin has changed. Particularly, these adverse effects are evident in the step-by-step desertification of the Amudarya and Syrdarya River deltas, and the widening of desertification areas. The incidence of intensive desertification process at the Aral Sea and The Aral Sea Basin has not been seen in the world experience yet. Therefore, it is difficult to quantify it in quantitative and qualitative terms.

The desert areas are expanding due to the opening of the sea bed and the drying of river deltas. 4 million/ha of the surface area was covered with fine salt particles and produced sand-forming new covers [2]. Thus, in the Central Asian region, a new source appeared, which flows sand-salt aerosols by means of the wind. According to preliminary data, up to 15 - 75 million tons of dust can appear at the atmosphere per year. The powder-formed salt from bottom of the seabed leads to a great deal of pollution of the atmosphere. For the first time in 1975, dust-salt distribution into atmosphere was observed at space pace. These dust storms occur during the droughty three months of the year. The dust storms are 400 km long and 40 km wide and 300 km in radius. As a result of the salinization of the earth, the yield of cotton has decreased by 5-15%, and the rice - by 3 to 6%. The total amount of powder-dust particles adjoining the Aral Sea basin is about 520 kg, which is one of the main causes of soil degradation. Sandy dust storms annually occupying 15,000 hectares of pastures across the Aral Sea. The zones allocated for the cotton growth are contaminated with infectious pests. The yield of agricultural products is falling.

Ameliorative deterioration in the upper reaches of the Amudarya river (Surkhandarya, Kashkadarya, Bukhara, Samarkand) causes a complex meliorative situation in the water sector of Turkmenistan, located in the middle class of the II category. Due to the soil salinity, agricultural production has decreased by 30% in Uzbekistan, 40% in Turkmenistan, 30-33% in Kazakhstan, 19% in Tajikistan, and 20% in Kyrgyzstan. In the Amudarya delta, artificial lakes and ponds are being established by delivering a particular amount of water (approximately 1-1,5 km 3) to the main sinks. This event allows for the development of fishery in the summer, as well as water supplies to pastures and hayfields [3]. As a result, livestock farmers are able to accumulate fodder base. These measures, in turn, prevent the desertification, allowing the thicket fields to remain at a certain level.

3. RESULT

Today, a number of new small water basins are developing around the Aral Sea. It creates favorable conditions for the development of fishing in fresh water basins. Changes in the Aral Sea levels and pollution of the rivers bring even a climate change. The relative humidity was diminished, the flow of dust-saturated and salt-filled winds increased, and the average daily temperature was higher. In the dried part of the Aral Sea, it is crucial to establish the drought-resistant plants, such as black Salsola Richteri and white Salsola Richteri , Tamarisk, Kandym on dried zones, and Tamarisk gallica., and black Salsola Richteri on sandy zones . In general, with the Aral Sea drainage, the geo-ecological situation in the Aral Sea area has appeared. It is not possible to restore the Aral Sea, and it is still a problem to keep the current level. Thus, various measures should be taken to improve geoecological conditions in these areas.

REFERENCES:

1. A.A. Rafiqov, "Geoecological Problems", Tashkent, "Teacher" 1997.
2. P.Baratov, M.Mamatkulov, A.Rafikov, "Natural Geography of Central Asia", Tashkent, “Teacher”, 1997.
3. Sh.Zokirov, R.Ibragimova "The natural geographical region of the Aral Sea region", Tashkent, 2017