



THE ARAL SEA CANNOT BE SAVED, BUT IT IS POSSIBLE TO DEVELOP A NEW TOURIST REGION

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Article history:	Abstract:
Received: 28 th February 2021 Accepted: 7 th March 2021 Published: 30 th March 2021	There are many different views on the causes of the disappearance of the Aral sea. The Aral sea, the former is unique, beautiful and one of the largest enclosed water in the world, almost during the lifetime of one generation found itself on the verge of extinction, which resulted in an unprecedented disaster and irreparable damage to the livelihoods of the populations, ecosystems and biodiversity of the Aral sea region. Despite the current environmental catastrophe, the Aral Sea tragedy provides the opportunity for a new tourist region

Keywords: Central Asian, Aral sea, climatic condition, ecological situation, new tourist region. disaster, ecology, water resources, ecosystem, biodiversity, infrastructure improvement, anthropogenic interference, hydrological regime of rivers, inland water body, climate of the Aral sea region, cyclical nature

INTRODUCTION.

The Aral sea is one of the largest closed inland brackish water bodies of the globe. Located in the heart of Central Asian deserts at an altitude of 53 m above sea level, the Aral sea acted giant vaporizer. From evaporated and entered the atmosphere about 60 cubic km of water. Before 1960, the Aral sea was the fourth largest lake in the world. Only in the last 30 years, the irrigated area increased 2 times, and use of limited water resources is 2. 5 times. Irrigation agriculture in the region can be traced to the VI-VII centuries BC and coincides with the highest flowering of an ancient civilization where irrigation was a major decisive factor of historical and socio- economic development. With the development of agriculture on the natural periods of sea fluctuations begin to significantly affect anthropogenic factor affecting the runoff of the rivers Syrdarya and Amu Darya. Especially noticeable is reflected in the present.

Despite the fact that there is intensive melting of glaciers, which would lead to an increase in the level of the Aral sea during the last 25 years, there is a catastrophic reduction in the world's largest inland body of water. In the last three decades, the intensification of irrigated agriculture, which in Central Asia and Kazakhstan focused on the lands of the foothill areas of the plains and the flow of the Amudarya and Syrdarya rivers resulted in a growing consumptive withdrawal of water from these water arteries that feed the Aral sea. The main reason for the difficult ecological situation in the Aral sea region has been large-scale anthropogenic intervention. The widespread expansion of areas under irrigation in the valleys of the rivers Syrdarya and Amudarya was accompanied not only by withdrawal of water, the violation of the hydrological regime of rivers, salinization of fertile lands, but also the introduction into the environment enormous quantities of chemical substances. Drying of the Aral sea has caused a number of negative consequences. First of all, gone Delta lakes and reed marshes, and the desiccation of the territory led to the formation of vast salt wastes that have become suppliers of salt and dust into the atmosphere.

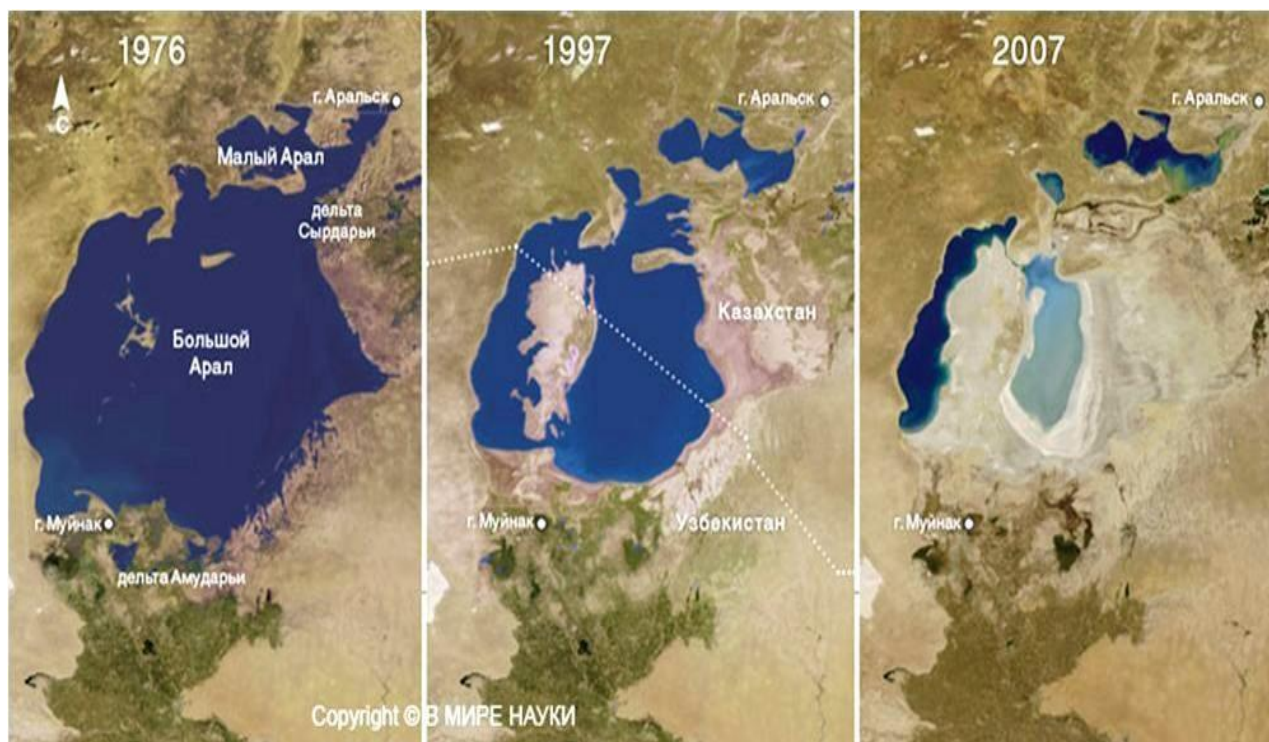


Fig.1. The gradual disappearance of the Aral sea

Most of the territory of the region is used as natural grassland. Pasture exposed to significant loads and anthropogenic processes of desertification, which leads to their degradation, vegetation cover, formation of transplantable Sands. In the last 5-10 years due to the drying process of the Aral sea, there has been a noticeable change in the climatic conditions of the region. Previously, the Aral sea acted as a regulator mitigating cold winds coming autumn and winter from Siberia and reducing, like a great conditioning, strength, heat in the summer months.

Today the Aral and surrounding territories have become world famous due to anthropogenic environmental disasters. With the tightening of climate summer in the region has become drier and shorter, the winters are long and cold. The vegetative season was reduced to 170 days. Productivity of pastures has decreased by half, and the loss of riparian vegetation has reduced the productivity of the floodplain by 10 times. With the increase in water consumption associated with the development of new irrigated lands are mainly cotton and rice; the increase in the population mainly employed in agricultural production, the flow of water into the sea from the two main river systems of the basin - Amudarya and Syrdarya - has almost completely ceased. At the bottom of the Aral sea in Kazakhstan discovered an ancient burial - the remains of the mausoleum, built about 600 years ago. According to some experts, this finding suggests that the Aral sea dried up long before it started the current shoaling, and that the changes in water levels are cyclical in nature.

After all, natural disasters can be avoided. Today not only has this historical fact, but also its consequences, which you must handle. Tell me, what is being done to improve the ecological status of the region. - The Aral sea began to dry up in the 60-ies of the twentieth century that led to the process of aridity and desertification in the region. Since 2000 here have been carried out phytomeliorative measures, planting of saxaul, Kandym, Cherkez and other salt - and drought-resistant plants.

The result of the changes affected more than one hundred coastal freshwater lakes with a total area of 600 thousand hectares. currently, the former bottom was formed of new Aralkum area of more than five million hectares. Since 2000 here have been carried out phytomeliorative measures, planting of saxaul, Kandym, Cherkez and other salt - and drought-resistant plants. Especially large areas in Akademski area is mastered thanks to the help of the German society for technical cooperation (GTZ). For the study of contemporary state of the natural environment of the region, our staff periodically visits. To mitigate the negative consequences of the ecological and social situation in the Aral sea basin projects.

"The program of Aral sea basin" of the ASBP-1 and ASBP-2 carried out a phased implementation of complex of measures on engineering water management and water infrastructure rehabilitation of the southern Aral, the creation of a chain of flooded lands along the shoreline of the Aral sea as a buffer zones against salt, dust drift, to prevent desertification, maintenance of biodiversity in the region. - However, the issues of creating the necessary conditions for the population, nature conservation remains on the agenda. So, in the future, the work will continue. Not so long ago the Aral sea was the fourth largest lake in the world, famous for rich natural resources, and the Aral sea area was considered a prosperous and biologically rich natural environment. Unique seclusion and diversity of the Aral sea did not leave anyone indifferent. And it is not surprising that the lake got its name. After all, the word "Aral" in translation from Turkic language means "island".

Probably, our ancestors considered the Aral sea saving island of life and wellbeing within the desert hot Sands of the Karakum and Kyzylkum. References to the Aral sea. The Aral sea - endorheic salt lake-sea in Uzbekistan and Kazakhstan. By 1 the area was 36, 5 thousand square km (including the so-called Big sea 33, 5 thousand sq km); up to 1960 square 66, 1 thousand sq. km. the Prevailing depth of 10-15 m, maximum - 54, 5 m. more than 300 Islands (the largest is Barsakelmes and Renaissance). However, due to unreasonable activity "lords of nature" - of humans, especially in recent decades the situation has changed dramatically. By 1 the sea lost three quarters of its volume and the surface area decreased by more than half. Now stripped and subjected to desertification, over 33 thousand square kilometers of seabed.

The shoreline has retreated 100-150 kilometers. The salinity of the water increased in 2, 5 times. And the sea itself was divided into two parts - the Large Aral and the Small Aral. In short, the Aral sea dries up, the Aral sea is dying. The consequences of the Aral disaster has long gone beyond the region. With dried up the waters of the sea annually, as from the crater of the volcano, spread over 100 thousand tons of salt and fine dust with admixtures of various chemicals and poisons, adversely affecting all living things. The effect of pollution is amplified by the fact that the Aral sea is located in the path of a powerful jet stream of air from West to East, contributing to aerosols in the high atmosphere. Traces of salt flows can be traced across Europe and even in the Arctic ocean.

DATA AND METHODOLOGY.

Analysis of the dynamics shallowing of the Aral sea and desertification of the surrounding regions leads to a sad forecast: the complete disappearance of the sea by 2010-2015. As a result, formed a new Aral-Kum desert, which is a continuation of the deserts of Karakum and Kyzylkum.

Increasing the amount of salt and various highly toxic poisons will be for decades spread around the globe, poisoning the air and destroying the ozone layer of the planet. The disappearance of the Aral sea threatens a dramatic change in the climatic conditions of the adjacent territories and the region in general. There feels already much stronger and tighter the sharply continental climate. Summer in the Aral sea region has become drier and shorter, and winter is cold and long. And the first from such a situation suffers, of course, the population of Aral sea. First of all, there is a strong need in the water. So, at an average rate of 125 liters per day local residents receive only 15 to 20 liters. But not only the need of water struck the multimillion-dollar region. Today it suffers from poverty, hunger, and various epidemics and diseases. The Aral sea has always been one of the richest suppliers of seafood. Now the level of salinity is so high that most species of fish have died. In the tissues of the fish that are caught today, often show disproportionately high levels of pesticides. Which, of course, has a negative impact on the health of Aral Sea region, not to mention the fact that the extinction of the fishing and processing industry and people remain without work.

There are many different views on the causes of the disappearance of the Aral sea. Someone is talking about the destruction of the bottom layer of the Aral sea and its overflow into the Caspian sea and surrounding lakes. Someone claims that the disappearance of the Aral sea - a natural process associated with the General climate of the planet. Some see the reason in the degradation of the surface of glaciers, their dusty and mineralization of precipitation feeding rivers Syrdarya and Amudarya rivers. However, the most common is still the original version - improper distribution of water resources that feed the Aral sea. The Amudarya and Syrdarya into the Aral sea, formerly were the main arteries feeding the pond. Once they brought in a closed sea 60 cubic kilometers of water per year. Now- about 4-5. As you know, both rivers originate in the mountains and pass through Tajikistan, Kyrgyzstan, Uzbekistan, Kazakhstan and Turkmenistan. With the 60-ies the main part of the water resources of these rivers began to leave for irrigation of farmland and water supplies of the Central Asian region.

RESULTS.

As a result, the riverbed flowing rivers often do not reach the dying sea, soaking into the sand. However, only 50-60% of the diverted water reaches the irrigated fields. In addition, due to improper and inefficient water allocation of the Amudarya and Syrdarya somewhere is bogging the entire regions of irrigated lands, making them unsuitable, and where, on the contrary, created a catastrophic shortage of water. Of 50-60 million hectares of land suitable for agriculture, is irrigated only about 10 million hectares. Central Asian States and the international community is taking steps to address the problems of the Aral sea. However, they are, unfortunately, mostly directed not against the root cause of environmental disaster, and dictated, primarily, by a desire to eliminate its consequences. The main forces and means allocated by States and international humanitarian organizations is spent on maintaining the living standards of the population and infrastructure in the region. The reconstruction of the sea was almost forgotten. Currently, pursuant to resolution of the Cabinet of Ministers of the Republic of Uzbekistan "On the Complex programme of measures to mitigate consequences of Aral sea disaster and restoration and socio-economic development of the Aral sea region for 2015-2018, the company has developed and implemented a comprehensive exercise to improve the situation. In accordance with that envisaged work on the rational use of water resources, creation of conditions for reproduction and preservation of the gene pool and population health, ecosystem restoration and biodiversity preservation and protection of flora and fauna, the modernization of production and enhancement of infrastructure for socio-economic development of Karakalpakstan. In addition, the message of the Oliy Majlis, the head of state noted that the Ministry of Finance established the development Fund for Aral sea region, which was allocated funds of more than \$ 200 billion soums. They will be used to improve water supply and living

conditions of the population.

Pictures of the Aral sea, the European Space Agency, confirmed the sad fate of the once one of the largest lakes in the world. In the photos you can see the Aral sea in 1985, and in this. Earlier the belongs to the American Agency of NASA. The latest shooting was made by the Meris spectrometer installed on Board of the Envisat satellite in June 2003. Meris can observe almost any point on the Earth.

For 18 years the Aral sea has decreased by almost half. During this time salt desert formed in 1-ies, spread over thousands of square kilometers. Naked saline bottom contains toxic substances, involved for many years in the sea with industrial and domestic waste drains. According to the latest data, the salinity of the sea increased five times. This, in turn, led to the disappearance of fish. The desiccation of the Aral sea has not only affected coastal regions, where fishing huts were empty far from current shores. Earlier in the Aral sea reigned continental climate. The Aral sea acted as a kind of regulator, softening winds in the winter and reducing heat in the summer months.

In the last 10 years the region had a tougher climate. The summer has become drier and shorter, the winters are long and cold. Productivity of pastures has decreased by half. The people, tired to fight diseases and poverty, began to leave their homes. The culprit – improvement. The Aral sea is the border between Kazakhstan and Uzbekistan. The rivers that feed it - the Amu Darya and Syrdarya originate in the mountains of Pamir and go a long way before falling into the Aral sea. Before 1960, the Aral sea was the fourth largest closed water basin in the world. The main cause of death of the Aral sea is a conscious withdrawal from the tributaries of the Aral sea water resources to irrigate cotton fields. Probable reserves of gas are estimated at 100 billion cubic meters, and oil - 1-1, 5 billion tons. In the Aral sea basin is already a search for oil and gas the Japanese Corporation JNOC and the British-Dutch company Shell.

Table 1
Comparative table of the reduction in the indicators

Indicators	1960	1990	2003	2004	2007	2008	2009	2010
Water level, m	53,40	38,24	31,0					
Volume, km3	1083	323	112,8		75			
Surface area, thousand km2	68,90	36,8	18,24	17,2	14, 183	10,579	11,8	13,9
Mineralization, ‰	9,90	29	78,0	91	100			
Runoff, km3/year	63	12,5	3,2					

In attracting global investment see the salvation of the region and many local officials, aware of the great benefits for yourself. However, this is unlikely to solve the problem of the Aral sea. Likely mining will only worsen the ecological situation in the region. In addition, over the years the population has increased two and a half times, about the same increased total water withdrawals of water from rivers feeding the Aral sea. In 1962 the Aral sea level has fluctuated around 53 meters. Over the next 40 years, he fell 18 meters, and the volume of water in the sea has decreased by five times. At the time, to solve the problems of the Aral sea was created by the international Fund for saving the Aral sea, which includes the Aral state. However, among its members there is no agreement, and his work is ineffective. Despite the fact that measures were taken to reduce the intake, the Aral sea continues to dry. According to experts, to maintain the stability of the Aral sea to increase the flow of water in 2,5 times.

CONCLUSION.

In conclusion I want to note that one of the largest in the recent history of global environmental disasters experienced by countries and 62 million people in Central Asia is the tragedy of the Aral sea, which according to their ecological-climatic, socio-economic and humanitarian consequences is a direct threat to sustainable development, health, gene pool and the future of people living in it. The Aral sea, the former is unique, beautiful and one of the largest enclosed water in the world, almost during the lifetime of one generation found itself on the verge of extinction, which resulted in an unprecedented disaster and irreparable damage to the livelihoods of the populations, ecosystems and biodiversity of the Aral sea region. The President of Uzbekistan Shavkat Mirziyoev during the visit to Karakalpakstan familiarized with the ongoing work on the development of the regional economy, improve social conditions. On the specific measures taken to improve the environmental situation in the Aral sea region, said the head of state in his address to the Oliy Majlis. Working on the prospect has potential.

Besides a solid legal framework - adopted decrees of the President "On State program on development of the Aral sea region for the years 2017-2021" 18 Jan and "On additional measures for economic development and employment Muynak district of the Republic of Karakalpakstan during the period 2017-2018" dated 28 February. They in particular focused attention on the improvement of tourism potential Muynak district. What are the prospects of steps taken in this direction to date. The problem of the Aral ecological crisis gained international fame in the late 80-ies. Large-scale economic activity led to such changes, which are incomparable in its speed, and often the overall value, with changes caused by natural processes.

But all is not lost! Aral is alive. Just in a different form. The former sea will never be returned, but it is possible to successfully maintain the life of the remaining lakes: the Small Aral and the Western Aral. The level of the Small Aral Sea, located on the territory of Kazakhstan, is even growing as a result of the built Kokaral dam. Fishing is successfully developing there.

The Western Aral Sea, most of which is located on the territory of Uzbekistan, is gradually stabilizing. Now the Western Aral is a small, highly saline lake with an area of 3,270 square kilometers. This is four times more than the famous Dead Sea. However, the Middle Eastern companion of the Aral Sea contains twice as much salt in the water. The depth of the Western Aral Sea can sometimes exceed 20 meters. Scientists are hopeful: "The natural environment is surprisingly resilient. Therefore, we should not lose hope and abandon efforts to preserve it, even when the task looks scary. Many people have dismissed the Aral Sea as hopeless, but now it is clearly shown that significant parts of it can be preserved and environmentally restored."

The Western Aral Sea must be seen. It's a mind-boggling sight. And it is located in our country.

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