

PROBLEMS OF THE POPULATION LIVING IN ECOLOGICALLY UNFAVORABLE AREAS OF THE SOUTHERN ARAL SEA REGION

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✓ Resume

The problems of the Aral Sea disaster, which has a destructive effect not only on the Aral Sea regions, but also on the entire planet. By now, the Aral Sea - the fourth largest lake in the world - has completely lost the status of a stable, super-complex natural system, the creative energy of which over the past three centuries has improved the relationship between various living systems and the latter with inanimate nature. The Aral ecological system maintained a fragile but very stable ecological balance over vast areas, extinguished the entropy of the surrounding world, and held back the movement of deserts to the North. These processes are reflected in the ecological state of the Republic of Uzbekistan, where, according to many experts, an extremely difficult and dangerous ecological situation has developed, which has a negative impact on the sanitary state of the region, on the organism of the population living here, as evidenced by the tendency for the growth and aggravation of many diseases. The investigation carried out confirms the legitimacy of the assumption about the existence of a connection between environmental factors negatively affecting the health of the population in the Aral Sea region with the ecological crises of these regions and the accompanying degradation of the natural environment. The studied phenomena, processes and patterns can be considered as characteristic.

Due to the continuing drying up of the Aral Sea and the ongoing humanitarian catastrophe around it, the preservation of the natural biological fund of the Aral Sea region, the reduction of the destructive impact of the Aral Sea crisis on the environment and, most importantly, on the livelihoods of hundreds of thousands and millions of people living here has become especially urgent.

Therefore, an in-depth study of the ecological, sanitary and epidemiological situation and the development of comprehensive recommendations for the protection of health and restoration of the natural environment in the Aral Sea region is one of the urgent scientific and practical tasks of the whole world.

Key words: Problems of the population living in ecologically unfavorable areas, the southern edge of the Aral Sea region.

ПРОБЛЕМЫ НАСЕЛЕНИЯ ПРОЖИВАЮЩИХ В ЭКОЛОГИЧЕСКИХ НЕБЛАГОПРИЯТНЫХ РАЙОНАХ ЮЖНОГО ПРИАРАЛЬЯ

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✓ Резюме

Проблемы Аральской катастрофы, оказывающее губительное влияние не только на регионы Приаралья, но и на всю планету. К настоящему времени Аральское море – четвертое по величине озеро в мире – полностью потеряло статус стабильной, сверхсложной природной системы, созидательная энергия которой на протяжении последних трех столетий совершенствовала взаимоотношения между различными живыми системами и последними с неживой природой. Аральская экологическая система поддерживала хрупкое, но весьма устойчивое экологическое равновесие на огромных пространствах, гасила энтропию окружающего мира, сдерживала движения пустынь на Север. Эти процессы отражаются и на экологическом состоянии Республики Узбекистан, где по оценке многих специалистов, сложилась крайне сложная и опасная экологическая ситуация, оказывающая негативное влияние на санитарное состояние региона, на организм

проживающего здесь населения, о чем свидетельствует тенденция к росту и утяжелению многих заболеваний.

Проведенные исследования подтверждают правомерность предположения о существовании связи, негативно действующих на здоровье населения факторов окружающей среды в Приаралье с экологическими кризисами данных регионов и сопутствующей деградацией природной среды. Изученные явления, процессы и закономерности могут рассматриваться как характерные.

В связи с продолжающимся высыханием Арала и происходящей гуманитарной катастрофой вокруг него особую актуальность приобрело сегодня сохранение природного биологического фонда Приаралья, сокращение губительного воздействия Аральского кризиса на окружающую среду и, самое главное, на жизнедеятельность проживающих здесь сотни тысяч и миллионов людей.

Поэтому углубленное изучение экологической, санитарно-эпидемиологической обстановки и разработка комплексных рекомендаций по охране здоровья и восстановления природной среды в районе Аральского моря является одной из актуальных научно-практических задач всего мира.

Ключевые слова: Проблемы населения проживавших в экологический неблагоприятных районах, южный край Приаралья.

AHOLINING EKOLOGIK JIHATDAN YASHASH MUAMMOLARI JANUBIY OROL DENGIZ MINTAQASINING NOXUSH HUDUDLARI

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Tabiat va jamiyat insonning biologik tabiati ta'sir qilishi mumkin bo'lgan o'zgarishlarning yagona dinamik ekotizimini aks ettiradi. Mamlakatimizda ham, butun sayyorada ham hozirgi va kelajak avlodlarning ahvolini yanada yaxshilash ko'p jihatdan ekologik omillarga bog'liq.

Quriyotgan Orol tabiatning odamlarga bo'lgan abadiy turtki va uning dahshatli ogohlantirishidir. Insoniyat tsivilizatsiyasi tarixida birinchi marta butun dengiz Yer xaritasidan asta-sekin yo'qolib bormoqda.

Hozirgi vaqtda Orol dengizi - dunyodagi to'rtinchi katta ko'l - barqaror, o'ta murakkab tabiiy tizim maqomini butunlay yo'qotdi, uning so'nggi uch asr davomida bunyodkorlik energiyasi turli xil tirik tizimlar va ikkinchisi jonsiz tabiat bilan. Orol ekologik tizimi keng hududlar bo'yicha mo'rt, ammo juda barqaror ekologik muvozanatni saqlab, atrofdagi dunyoning entropiyasini o'chirdi va cho'llarning shimol tomon harakatlanishini to'xtatdi.

Ushbu jarayonlar O'zbekiston Respublikasining ekologik holatida aks etadi, bu erda ko'plab mutaxassislar fikriga ko'ra, mintaqaning sanitariya holatiga, aholi organizmiga salbiy ta'sir ko'rsatadigan o'ta qiyin va xavfli ekologik vaziyat yuzaga kelgan. bu erda yashash, bu ko'plab kasalliklarning o'sishi va kuchayish tendentsiyasidan dalolat beradi.

O'zbekiston hukumati mintaqaning ekologiyasi holatiga katta e'tibor qaratmoqda.

BMTning Mingyillik rivojlanish maqsadlari bo'yicha sammitining yalpi majlisidagi O'zbekiston Respublikasi Prezidenti Shavkat Mirziyoevning nutqida ta'kidlangan: "Ekologiyani muhofaza qilish va atrof-muhitni muhofaza qilish belgilangan maqsadlarga erishish uchun katta ahamiyatga ega. Mingyillik deklaratsiyasi bilan, ayniqsa zamonaviy g'ayritabiiy tabiiy o'zgarishlar sharoitida».

Kalit so'zlar: Orol dengizi mintaqalarida ekologik inqirozning salbiy oqibatlarini o'rganish.

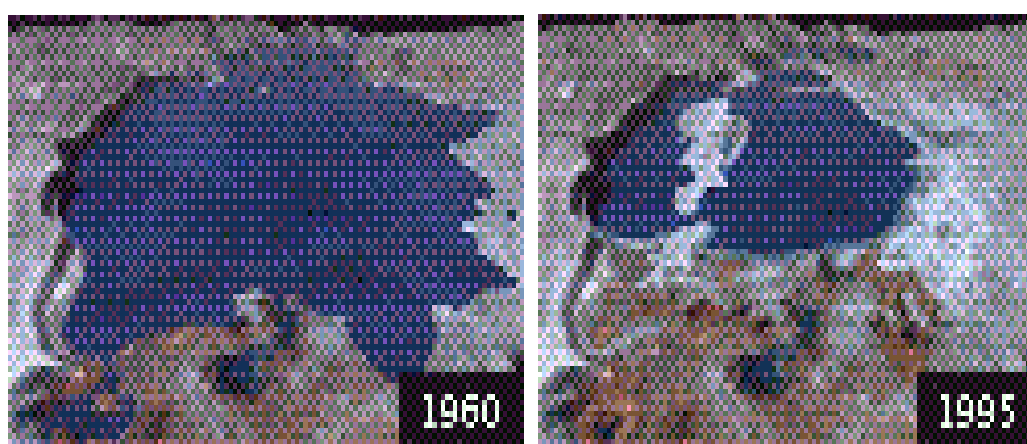
Relevance

To ensure environmental safety and sustainability in the republic, measures are being taken to improve the process of environmental protection, stabilize the environmental situation. A harmonious system of government and administrative bodies has been built, and environmental legislation is being developed. National and international projects are being implemented in the field of environmental protection and rational use of natural resources, dissemination of environmental knowledge and best practices.

The problem of the Aral Sea crisis is an ecological, socio - economic, medical and demographic catastrophe, which affects not only the fate of the peoples of Uzbekistan, Kazakhstan

and Turkmenistan. The negative consequences of the environmental crisis of the Aral Sea region go far beyond the framework of these regions, acquiring a planetary character. All this testifies to the fact that delay in liquidating the current crisis can lead to more serious moral and socio-economic costs.

From 1961 to 1990, the level of the Aral Sea decreased by 14.8 m. At the same time, the volume of water in the Aral Sea (from 1093 to 330 km³, that is, by 763 km³, or more than three times) and the area of the reservoir (from 68,500 to 36,500 km², that is, by 32,000 km², or almost twice) decreased significantly. By 1995, the level of the reservoir had dropped by another 2 m. (Picture 1).



Picture 1. View from space. Aral Sea in 1960 and 1995.

Until the middle of the last century, the Aral Sea was the fourth largest inland water body of the planet, containing more than a thousand cubic kilometers of water. The salinity of the sea was then about three times lower than the average salinity of the waters of the World Ocean. The presence of such a large reservoir had a softening effect on the climate, turning the Aral Sea region into a kind of oasis in the middle of the desert. The unique ecosystem of the Aral Sea included hundreds of species of marine animals and plants, many of which were found only here. Gradually, thickets of Asiatic poplar, oleaster, willow began to disappear or shrank, they began to be replaced by salt-tolerant vegetation. Of the floristic richness of 574 plant species, 230 species are actually found at present, in addition, the

presence of 192 species is noted, and 152 plant species have disappeared irrevocably. Of the remaining 422 plant species, 54 types are on the verge of extinction. Due to the consequences of the drying up of the Aral Sea, not only the delta of the Amu Darya River has been degraded, but also the vast desert areas of the Southern Aral Sea, which are pastures for distant pasture breeding. In the past, a rich fauna, numbering 498 species of vertebrates, including 307 birds, 33 reptiles, 2 amphibians, 44 fish. At present, more than 12 species have disappeared from this faunal composition, 19 species of mammals, 76 species of birds, 6 reptiles and 12 species of fish are on the verge of extinction.

Today, the Aral Sea area has decreased by three quarters (Pictures 2 and 3).



Picture 2. Aral Sea 2009 view from space.



Picture 3. Aral Sea 2011 view from space.

At the same time, the salinity of the reservoir has catastrophically increased, which is now almost three times higher than that of the ocean.

About 30 thousand square kilometers of the former seabed have become an arena for desertification. Today, almost twice as much moisture continues to evaporate from the mirror of the Aral Sea than it comes in.

From the surface of the salt marshes, which occupy vast areas of the dried bottom of the Aral Sea, about 65 million tons of toxic finely dispersed salt rises into the atmosphere annually. Spreading to the west, it forms dust-salt clouds, the range of which is unlimited. In recent years, the salt content in rainwater has more than doubled in the vicinity of Tashkent, in Belarus, and in Lithuania. In the immediate vicinity of the Aral Sea - seven times.

The consequences of the Aral Sea crisis for the Central Asian states are defined by international experts as a global ecological disaster of the 20th century.

The tragedy of the Aral Sea is the result of short-sighted and irrational policies in the former Soviet Union. One of the main causes of the Aral

Sea ecological catastrophe is of anthropogenic nature.

From the 1960s to the late 1980s, the inflow of water into the sea decreased from 50-60 to 5 km³. At the same time, there was a steady, unprecedented increase in the number of fertilizers and pesticides used (due to large-scale and uncontrolled use in agricultural practice of pesticides, defoliants, mineral fertilizers, environmental pollution with radionuclides, heavy metal salts).

The consequences of this catastrophe were gross distortions of the natural environment over vast territories, and an extreme ecological and socio-economic situation developed.

In the southern Aral Sea region, many small lakes have become shallow and dry, which has led to the disappearance of almost 90 percent of the existing tugai thickets on an area of 800 thousand hectares, and with them their inhabitants. As a result of anthropogenic desertification, the biological productivity of the Aral Sea region has decreased by 10 times.

Over the past 35-40 years, the level of the Aral Sea has decreased by 29 m, the area of the water area has decreased by more than 5,8 times,

the volume of water has decreased from 1064 to less than 80 km³, the salinity of water in the western part has reached 110-112 g/l., and in the eastern basin 280 g/l. The area of the drained bottom of the Aral Sea is more than 4,0 million hectares.

Environmental problems pose a serious threat to human health. According to the Global Humanitarian Forum, global climate change is responsible for 300,000 deaths a year. Three hundred million people live under its negative influence. The economy also suffers from this.

Due to warming, or rather climate change in the region, degradation and reduction of the area of snow and ice resources that feed the rivers of the Aral Sea basin are taking place. Glaciologist's assessments show that mountain glaciation in Central Asia has already decreased by more than a third.

Earlier, the Aral Sea acted as a kind of regulator, softening the cold winds that came from Siberia in winter and, like a huge air conditioner, reducing the heat in the summer months. With the aridization of the climate, summers in the region have become drier and shorter, winters - long and cold. The climate of the Khorezm region was mainly formed under the influence of the Aral Sea, but due to the crisis of the Aral Sea, the climate of the region changed, so the summer became hotter, drier, the air temperature in some months reached + 60 degrees Celsius, the winter became colder and longer, the temperature mark decreased to 30-40 degrees, the amount of atmospheric precipitation also decreased to 80-100 mm. The number of wind days has increased. This entails the pollution of the air basin, soil and water of the Khorezm region with thousands of tons of dust and poisonous salt, carried by sand-salt storms from the drained shores and the bottom of the Aral Sea, thereby aggravating the existing ecological crisis of the region, as it were, in a vicious circle.

By now, in the Khorezm region, the volume of medium saline soil has reached 33.1%, highly saline 13%, in addition to widespread soil salinization, it has been established that about 40% of the soils in the Khorezm region are contaminated with such herbicides as duplex doppler and hexachlorocyclohexane, the number of which in 2009 year was the multiplicity of increasing the maximum permissible value by 1-3 times, for 2010 1-9 times, for 2011 1-3, 4 times.

Deterioration in the quality of drinking water in terms of salinity, total hardness, sulfates and chlorides is noted throughout the Aral Sea region.

The share of water samples that do not meet sanitary and chemical standards in watercourses in the Republic of Karakalpakstan is 55,9%, in the Khorezm region – 60,8%, and microbiological – 16,2% and 2,7%, respectively.

The drinking water supply of the region improved after the commissioning of the first start-up complex in 1990, the second start-up complex in 1992 of the Tuyamuyun water pipeline with a total capacity of 200 thousand cubic meters per day of tap water. Coverage of the population of the region with centralized tap water was 44,7%, including 60-70% in cities and regional centers, 15-20% in rural areas.

Sanitary violations in the operation of water supply facilities, low water supply and water consumption of the population, high water salinity, affected the health of the population.

On the territory of the Khorezm region there are more than 200 stationary sources of air pollution, one of the largest are cotton processing enterprises and enterprises of the construction industry. Basically, all cotton factories are located in residential areas, the organic and inorganic dust of which pollutes populated areas and harms the environment and public health. The annual emission of all enterprises, together with vehicles, is thousands of tons. In samples taken from the atmospheric air of populated areas, an increase in the maximum permissible norms for the concentration of dust and various toxic substances was noted.

It is known that for human health and longevity, clean air, water and soil, the consumption of products grown in natural conditions and rich in useful microelements are needed. For more than 10 years, scientists from the Urgench branch of the Tashkent Medical Academy and the Khorezm Regional Committee for Nature Protection have been closely cooperating to study the causes, prevalence, environmental impact on the health of the population of the Khorezm region, the characteristics of the course, prevention and new approaches to the treatment of various diseases of the population of the South Aral Sea region.

More than 10 million people live in the territories directly affected by the ecological disaster of the Aral Sea. As numerous studies have shown, dust, wind and salts rising from the bottom of the dried-up Aral Sea basin have an adverse effect not only on the stability of the ecosystem, but also on human health. Despite the ongoing medical and preventive measures, among the population of this region, there is an increasing frequency and aggravation of the

number of many diseases (anemia, goiter, developmental delays in children).

The incidence rate of acute intestinal infections, typhoid fever, infectious hepatitis in the Aral Sea region is the highest and exceeds the national average by several times. A particularly high incidence of various infections is noted among children under 14 years of age.

The Aral Sea crisis has a negative impact on the conditions and quality of life of the entire population of the region, but it is felt most by the residents of the ecological disaster zone living in Karakalpakstan, the Kyzyl-Orda region of Kazakhstan, the Khorezm, Bukhara and Navoi regions of Uzbekistan and the Tashauz region of Turkmenistan.

The study of morbidity in the Khorezm region for a three-year period from 2008 to 2010 revealed the following: the average rate of patients with neoplasms per 100,000 population among children under 14 years old in the Khorezm region was 894,54 cases, among adolescents (15-17 years old) – 552,07 cases, among adults – 3113,92 cases; with diseases of the blood and hematopoietic organs among children under 14 years of age, this figure was 81936,13 cases, among adolescents (15-17 years old) – 43956,58 cases, among adults – 33822,77 cases; with diseases of the circulatory system among children under 14 years of age, this indicator was 9096,72 cases, among adolescents (15-17 years old) – 20615,19 cases, among adults – 29428,17 cases; with diseases of the respiratory and digestive organs among children under 14 years old, these indicators were 68637, 45 and

53386,85 cases, among adolescents (15-17 years old) – 34610,37 and 33966,5 cases, and among adults - 50367.72 cases ... These indicators also exceed the average republican indicators.

The investigation carried out confirm the legitimacy of the assumption about the existence of a connection between environmental factors negatively affecting the health of the population in the Aral Sea region with the ecological crises of these regions and the accompanying degradation of the natural environment. The studied phenomena, processes and patterns can be considered as characteristic.

Due to the continuing drying up of the Aral Sea and the ongoing humanitarian catastrophe around it, the preservation of the natural biological fund of the Aral Sea region, the reduction of the destructive impact of the Aral Sea crisis on the environment and, most importantly, on the livelihoods of hundreds of thousands and millions of people living here has become especially urgent.

Conclusions

Summing up, it is necessary to once again note the seriousness of the global Aral catastrophe, which has a disastrous effect not only on the Aral Sea regions, but also on the entire planet. Therefore, an in-depth study of the ecological, sanitary and epidemiological situation and the development of comprehensive recommendations for the protection of health and restoration of the natural environment in the Aral Sea region is one of the urgent scientific and practical tasks of the whole world.

LIST OF REFERENCES:

1. Alibekov L. and others. Consequences of the Aral Sea tragedy // *Fan va Turmush* J. 1994. №3. –P.8-9.
2. Berdimuratova A. Ecological crisis in the Aral Sea region problems of its solution. J. "Ekonomika I Statistika". -1997. -№ 11-12. - P.70-71.
3. Goldstein R. Our geoecology. J. "Ekonomika I Statistika. -1996. -№3. –P.64-63.
4. Duschanov B. A. Ecologically unfavorable situation in the South Aral Sea region. Materials of practice. conf. Urgench. -1999. – P.2-3.
5. Kuchma V.R. Hygiene of children and adolescents. -M.-2010.-P.472.
6. Matkarimova D.S., Duschanov Sh.B. The Aral sea crisis: Problems of environmental culture and health. Monograph. Urgench. -2012.- P.120.

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