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On The Question Of The Study To Assess The Change In Blood Indicators In Children Under The Influence Of Environmental Factors In The South Aral Sea Region

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According to the World Health Organization for 2021, neurological disorders encompass a wide range of diseases affecting the brain and spinal cord, as well as the interconnected nervous systems of the body [10]. This large group includes Alzheimer's disease, Parkinson's disease, autism spectrum disorders, anxiety, depression, and neural inflammation.

The change in the biosphere as a result of anthropogenic impact, the exacerbation of global and local (regional) environmental problems, necessitated changes in the main directions of the development strategy of the "nature and society" system [6, 7]. The necessity and importance of assessing the scale of anthropogenic impact involving territories affected and not affected by economic activity at all levels [1, 3] is defined by the concept of territory as the main ecological resource. When assessing the level of anthropogenic pressure in the region, it is necessary to consider the number of preserved natural ecosystems, as well as their features and ecological-social-economic characteristics.

In ecologically unfavorable areas and cities with a high level of chemical industry, there is a sharp decrease in birth rates, an increase in mortality from congenital anomalies and tumors, and an increase in disability. These are the most objective health indicators [2, 6, 9].

Air and water pollution, soil erosion, desertification, excessive consumption of fossil fuels are leading to global warming, an increase in natural disasters, and

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harming the environment and public health. In response to this, three years ago, the nationwide "Green Space" project was launched in our country. Joint implementation of the Regional Climate Strategy with neighboring countries has begun. The Central Asian University for the Study of the Environment and Climate Change has been established in our capital [8].

At the first stage of the study, data were collected and analyzed on the dynamics of indicators characterizing the quality of the environment (QOS) and the level of development of the regions.

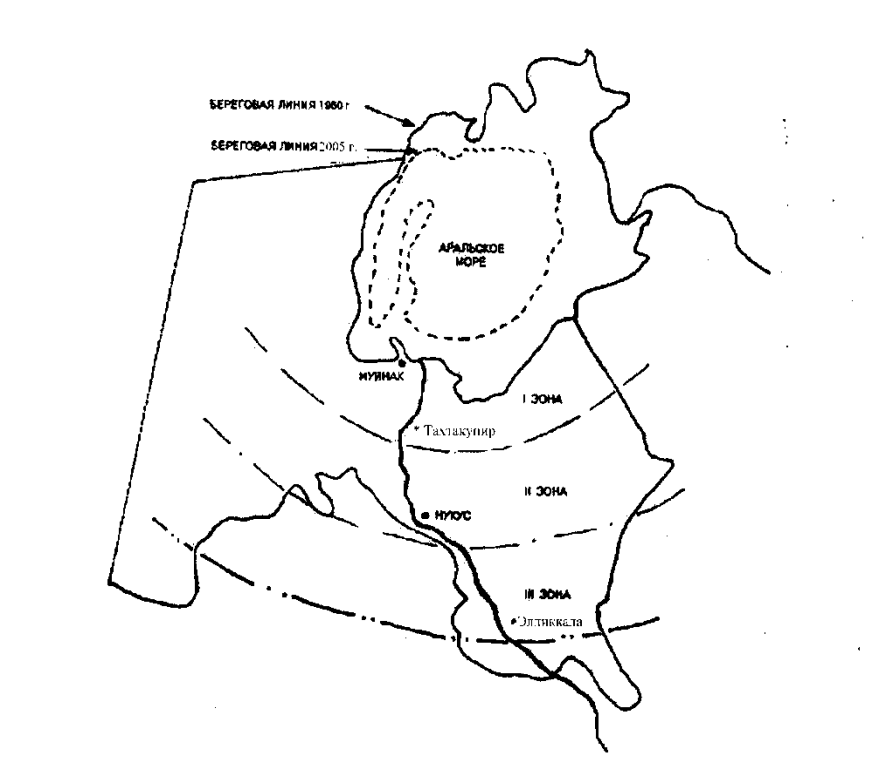

Figure 1. Diagram with geography of zones differing in the degree of ecological state of the Republic of Karakalpakstan

In many studies aimed at developing and using a comprehensive environmental quality assessment, the practice of comparing territories and regions with subsequent ranking of their ecological state is being implemented [4, 5].

Assessment of the quality of the regional environment at the local or regional level is of interest, where a unique complex of interacting natural and

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technogenic-anthropogenic components capable of influencing the health of the population living in this territory has formed.

The current scientific and technological crisis is characterized by the rapid development of industry, the growth of electricity production, and the use of all modes of transport. These processes contribute to the growth of environmental pollution, which is one of the most important problems of public health. This involves preventing the potential harmful effects of environmental pollution on the health of current and future generations [4, 5, 9]. Environmental pollution affects human health in various ways and can have a practical impact through all spheres of human interaction with it.

In the Moynak, Kungrad, Takhtakupyr, Kanlykul, Nukus, and Khojeyli districts of the Republic of Karakalpakstan, a comprehensive assessment of various categories of drinking water (water pipelines, wells, open water bodies) was conducted based on the most important physicochemical components: water mineralization (by dry residue), hardness ($Ca^{+}Mg$), chloride and sulfate content, pH, presence of organic substances (by oxidation of BPK5 and manganate), biogenic elements, macro- and microelements.

The state of atmospheric air was assessed by the amount of solid substances (dust, organic mixtures, etc.), liquid and gaseous substances, including sulfur (SO2), hydrocarbons (CO), nitrogen oxide (NO2), volatile organic compounds. An analysis of drinking water samples, the sources of which are surface and groundwater, is presented.

In some years, the percentage of changes in water quality based on chemical indicators in water networks from surface sources has reached 38 percent, and based on bacteriological indicators - 43 percent. More than 90% of the rural population of the Republic of Karakalpakstan uses irrigation network water in the spring-summer period, and wells dug along dry channels in the winter period. 80 percent of the wells used by the rural population do not meet sanitary requirements. The low quality of drinking water, combined with the hot, sharply continental climate of the South Aral Sea region, is reducing the living conditions of the population and contributing to the emergence of diseases.

Thus, in the system of measures aimed at improving the living conditions and health of the population of the Republic of Karakalpakstan, the provision of

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quality drinking water should become a top priority. In the South Aral Sea region, the water factor is one of the main factors influencing pathological processes in the human body.

List Of Used Literature

1. Агаджанян Н.А., Марачев А.Г., Бобков Г.А. Экологическая физиология человека. М.: Крук, 1999.- 416 с.
2. Гаркави Л.Х., Уколова М.А., Квакина Е.Б. Адаптационные реакции и резистентность организма. Ростов н/Д : РГУД, 1990.- 224 с.
3. Казин Э.М, Мурзаханова Р.М, Тарасова О.Л. Оценка адаптивных возможностей подростков с различным типом полового созревания по соматическим, вегетативным и гормональным показателям // Валеология. 2002.- № 3.- С. 70-73.
4. Мамбеткаримов Г.А., Мамбетуллаева С.М. Количественная оценка экзогенных факторов, влияющих на состояние здоровья детского населения в условиях Республики Каракалпакстан // Медицинский журнал Узбекистана. – Ташкент, 2001. - №1. – С. 99-100.
5. Мираметова Н.П., Данабаева А.Ж. Эколого-физиологические особенности адаптивных реакций организма подростков в условиях Южного Приаралья // Журнал Хорезмской Академии Маъмуна. – 2022.– № 8/1.– С. 82 –86.
6. Сайланова Д.К. Состояние фактического питания и физического развития детей 1-7 лет в условиях Южного Приаралья (Республика Каракалпакстан). - Автореф канд. мед. наук.- Ташкент.- 2004.- 18 с.
7. Kovalenko T., Sornette D. Dynamical diagnosis and solutions for resilient natural and social systems //arXiv preprint arXiv:1211.1949. – 2012
8. Mirzabaev A. Climate change science and policy in Central Asia: current situation and future perspectives // Climate Change in Central Asia: Decarbonization, Energy Transition and Climate Policy. – 2023. – С. 23-32..
9. Mambetullaeva S.M., Madraimova S. The impact of climate change and desertification processes on groundwater in the northern and southern districts of the republic of Karakalpakstan. International Conference on Medicine & Agriculture, 2025. -80-82 p.
10. Peate I. The Nervous System. – John Wiley & Sons, 2025.