

## MEDICAL GEOGRAPHIC SITUATION OF KASHKADARYA REGION

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### **ABSTRACT**

*In this article, medical geographical situations in Kashkadarya region are studied and analyzed. In the assessment of the medical and ecological situation in the region, issues such as air, water, and soil pollution and their impact on human health, as well as the impact of climate change on the population were deeply analyzed and suggestions and recommendations were developed.*

**Key words:** *medical, disease, air, climate, area, acute, spread, ecological problem*

## МЕДИКО-ГЕОГРАФИЧЕСКОЕ ПОЛОЖЕНИЕ КАШКАДАРЬИНСКОЙ ОБЛАСТИ

### **АННОТАЦИЯ**

*В данной статье изучена и проанализирована медико-географическая ситуация в Кашкадарьинской области. При оценке медико-экологической ситуации в регионе были глубоко проанализированы такие вопросы, как загрязнение воздуха, воды и почвы и их влияние на здоровье человека, а также влияние изменения климата на население и разработаны предложения и рекомендации.*

**Ключевые слова:** *медицина, болезнь, воздух, климат, территория, острота, распространение, экологическая проблема.*

It is known that the rapid development of science and technology by the 21st century is causing a number of global problems that are closely related to each other during the life of mankind. One such important worldly problem is environmental problems. In recent years, a number of ecological changes have been taking place on our planet due to human activity. In particular, the climate and weather are changing significantly in all regions of the globe, the composition of water and soil is becoming more and more polluted, and species of flora and fauna are decreasing. This, in turn, has a severe impact on the health of all people living on earth. The World Health Organization notes that about 80% of all diseases are the result of environmental problems [1].

Therefore, the prevention of such an ecological danger poses a number of issues not only to ecologists, but also to the general public, including geographers. In the assessment of the medical and ecological situation of Kashkadarya region, issues such as air, water, and soil pollution and their impact on human health, as well as climate change, the impact of the Aral Sea problem on the territory and population of the region are highlighted.

Severe air pollution has a negative effect on human health, as well as on all living things. A person breathes an average of 25 kg of air per day. Harmful dust, particles, and harmful gases in the air accumulate in the human body. As a result, it causes an increase in diseases such as skin and eye diseases, cirrhosis of the liver, high blood pressure, chronic bronchitis, shortness of breath, and lung cancer. Bronchitis and gastritis (inflammation of the stomach lining) occur as a result of high sulfur oxides in the air.

To the set of logical actions developed and implemented in practice by the Department of Ecology and Environmental Protection of Kashkadarya Region to combat air pollution:

- ✓ creation of new types of engines for cars, which are one of the main sources of air pollution, switching them to technologically clean fuel type;
- ✓ relocation of all air polluting enterprises outside the city;

✓ strict prohibition of placing production enterprises close to each other, etc. [2].

One of the types of pollution that seriously affects the territory and population of the region is soil pollution. As a result of soil pollution, its chemical and biological properties change. Consequently, there is a disturbance in the metabolism. Pathogenic microorganisms that spread various diseases multiply rapidly. The soil is polluted by the following factors: industrial and municipal garbage, communications (gas, oil, water pipes, electric cables and heating pipes, vehicles, sewage, etc.). The state of pollution with urban garbage and industrial waste is visible in Karshi, Koson, Guzor, Dehkhanabad, Kitab districts and other regions (land where toxic chemicals and household waste are dumped in some remote areas of the district, city, and villages). If sanitation zones and waste processing facilities are not organized in such areas, the soil of these areas may become contaminated and cannot be cleaned naturally. At the same time, it can seriously affect the environment and human health.

According to data, 1 ha of clean soil contains 16-150 thousand bacteria, while 1 ha of polluted soil contains up to 1 billion microbes. As a result, the soil becomes contaminated and becomes a source of spread of various infectious diseases, including gangrene, cholera, typhus, and tuberculosis. Harmful and toxic chemical elements present in the polluted soil can be transferred to livestock through the plants growing there, and from cattle (due to drinking their milk and eating their meat) to people. As a result of the use of mineral deposits in the region, the irrigated soils in Mubarak, Dehqonabad, and Guzor districts are heavily polluted.

The chemical, physical, biological, microbiological properties of the soil are changing, the water, nutrient and air regimes are disturbed, negatively affecting all soil phases. This, along with soil pollution, has a negative impact on plant, animal and even human health in this area. When the soil cover is contaminated with radioactive substances, the biological world directly related to the soil cover is damaged in various ways. It has been determined that a person severely affected by radioactive radiation

will not live for more than 10 years. In most cases, a person affected by radioactivity gets cancer [3].

Radioactive radiation of a person occurs not only through soil or food, but also during life activities. The use of telecommunication technologies by the population of the region is at a very high level, and as a result of the use of Tallimarjon IES in Nishon district, some elements of radioactive radiation are felt in the population's organism. One of the next environmental problems is the scarcity of water resources and its pollution in the region. Since the 1970s, the development of the Karshi desert has had a strong impact on the underground and surface water regime. In addition, as a result of the increase of industrial enterprises, the increase in the volume of production, the growth of the urbanization process, the development of animal husbandry, and the establishment of collector-water systems, the water quality in the river basin began to change rapidly.

In general, the sources of water pollution are numerous and diverse. These include wastewater from industrial enterprises and households, wastewater from the production of fossil resources: water from oil refineries, untreated water from hospitals, animal husbandry complexes, etc. Excess of chlorine, sulfate, calcium salts, petroleum products, and waste of radioactive elements in the water causes diseases that have a negative effect on the body of animals and people. In particular, not only the bodies of people living around the Aral Sea, but also the residents of Kashkadarya region, among the regions affected by the Aral problem, suffer from the salts formed as a result of the salinity of the water. That is, the population is more likely to suffer from kidney and gastrointestinal diseases. The drying up of the Aral Sea has a significant impact on the ecological environment of the Kashkadarya region. In particular, under these effects, there is an increase in windy days in the region, an increase in the amount of toxic salts falling with wind and precipitation, and as a result, it leads to a decrease in the productivity of plants.

Wind also has a great effect on improving human health. While the gently blowing mountain-valley winds bring peace, the local "Afghan" wind blowing in the

plains in summer has a negative effect on the human body. At this time, the relative humidity of the air decreases and dust rises. When organizing rest and treatment zones, it is necessary to try to choose areas with a wind speed of 2.2-3.0 meters per second. Our ancestors knew how to use and protect the eastern and southeastern winds. The wind speed in the region is 4.2 m/s in Karshi, 3.7 m/s in Qamashi, 2.6 m/s in Kitab, 3.8 m/s in Guzor, very strong winds are rarely observed, mountain-valley winds are characteristic of valleys [2]. In Kashkadarya region, the direction of winds is mostly north, north-west and east, and these winds prevail mostly in the plains. Southwest and west winds prevail in the foothills. Especially, the mountain-valley winds created a unique atmosphere in the mountainous regions. In the area where the "Avtomobilchi" children's sanatorium is located in Yakkabog, between 15:00 and 17:00, the blowing of the wind that heals the respiratory tract was detected by the employees of the research institute named Semashko (Kibray t.) [4].

A children's climatic healing center for treating respiratory tracts was also established in Kaynar Valley. According to the results of the research, the condition of a person is kept in the norm when the air temperature and humidity are mutually exchanged. A person feels better in dry air when the temperature is high. If the relative humidity is less than 20%, the mouth will be dry, the lips will crack and it will cause discomfort, and dust and germs can pass through the mouth and nose cavities. If we take into account the quantitative abundance of total solar radiation in Kashkadarya region, then 24-27°C may be the most favorable in dry weather [2]. Based on the analysis of the above, we consider it appropriate to divide the Kashkadarya region into mountain, sub-mountain and plain parts, which differ from each other as a result of natural and anthropogenic influence in terms of medical landscape studies. Today, the time has come to fully and effectively use all climatic possibilities of the region in the way of strengthening people's health.

The Kitab-Shahrisabz basin has a great potential in the Kashkadarya valley in terms of its wealth of natural resources for recreation. All streams flowing from the surrounding mountain slopes, as well as dozens of irrigation networks, riverbeds

crossing gardens, hedgerows and fields, refresh this part of the valley. Recreational resources of the region have convenient natural opportunities for relaxation and healing. It is desirable to establish hospitals and sanatoriums for the treatment of various diseases (lungs, nerves, respiratory tracts, tuberculosis, gastrointestinal tract, etc.) in mountain valleys and villages such as Gilan, Sarchashma, Siyob. Western recreation features of mountain landscapes (purity of air, coolness of the weather compared to plains, etc.) are favorable for establishment of spa-sanatorium complexes. Lung, nerve, and blood vessel diseases can be treated in such recreation and treatment facilities. In addition, winter weather conditions can be used for sports purposes, organizing trips for recreation. The formation of a thick snow cover in the mountains and its preservation from 2 to 6 months provides opportunities for organizing hiking and skiing.

Kashkadarya region is one of the regions in Uzbekistan where large industrial enterprises are located. In the Kashkadarya region, among the industries, gas-chemical, gas processing industries have a special place. The amount of waste gases coming out of these industrial enterprises is higher than the norm. The industry of Kashkadarya region occupies a special place in the economy of our republic. Among the industrial enterprises in the region, the fuel and energy industries are well developed. However, the oil and gas industry is one of the ecologically dangerous industries and has a great negative impact on human health. Because various chemical reagents, as well as hydrocarbons and their mixtures produced during the technological process during the drilling of oil and gas field wells, extraction of raw materials, and production of finished products, have a negative impact on flora and fauna, as well as on people. proven. According to the statistical data of the province (2019), approximately 0.53 mln. t of oil and oil products, 32.4 billion. m<sup>3</sup> of natural gas, 1.4 mln. t of gas condensate (liquefied gas), 0.3 mln. About t of sulfur, 134.7 thousand t of polyethylene and other products are produced [9]. Karshi, Shahrisabz nodes of industry are of great importance in the province. Especially Mubarak (IEM, gas-chemical complex), Shortan (oil-gas-chemistry), Kokdumaloq (oil) and other industrial centers are gaining

importance not only in the economy of the region, but also in the republic. The integration of these industries in several areas of the region has a significant impact on the health of the population living in these areas. Noise, environmental pollution, and various unpleasant conditions cause the human body to develop diseases related to blood and blood formation, breathing, and digestive organs.

In the samples taken from underground waters of Mubarak district, the change of water hardness ranges from 5.89 mg/l to 19.26 mg/l. The lowest indicator corresponds to the village of Sardoba, and the highest to the village of Khojamubarak. In Karshi district, it ranges from 5.57 mg/l to 23.07 mg/l. Samples taken from the Karshin desert area are characterized by high water hardness compared to other regions. The hardness of water in the samples taken from Kitab district varies from 1.8 mg/l to 2.0 mg/l. The highest indicator corresponds to the water sample taken from the village of Sivaz, the water hardness is 2.0 mg/l. The lowest indicator of water hardness corresponds to the village of Kaynar, i.e. 1.8 mg/l. The hardness of water in the samples taken from Shahrisabz district varies from 1.9 mg/l to 3.2 mg/l. The highest value is 3.2 mg/l in the village of Dukchi, and the lowest value is 1.9 mg/l in the village of Shovkan [6, p. 98]. Water hardness in Yakkabog District varies from 1.9 mg/l to 2.5 mg/l. The high hardness of the water in the obtained samples always leads to an increase in diseases such as inflammation of the gall bladder, kidneys, and urinary tract in those who consume this water. its incarnation has a significant impact on the health of the population living in these places. Noise, environmental pollution, and various unpleasant conditions cause the human body to develop diseases related to blood and blood formation, breathing, and digestive organs.

With the increase of the population in the region, the number of people applying for medical services is also increasing year by year. In turn, the well-established provision of medical services is the main factor in improving the health of rural residents. The unique natural conditions, economic geographical location, socio-economic and demographic development of each district in Kashkadarya region have an impact on the territorial organization of medical service institutions.



Table 1

Some information on the health sector of Kashkadaro region

№	In Kashkadarya region	2018	2019	2020	2021	2022
1	Number of hospitals	94	89	88	87	91
2	Outpatient polyclinics	426	525	504	497	543
3	Medical doctors	5700	6100	6000	6000	6600
4	Medical staff	39.6 thousand	43,8 thousand	40,3 thousand	44,3 thousand	45,0 thousand
5	Secondary medical staff	33.9 thousand	37,7 thousand	34,4 thousand	38,2 thousand	38,3 thousand

Source: Prepared by the author based on the information of the health department of Kashkadarya region.

With the increase in the demand and need for small outpatient medical institutions in Kashkadarya region over the past five years, the number of ambulatory polyclinic institutions has also increased compared to the number of inpatient medical hospitals. This indicator is also different in districts. It is expedient to take measures to improve ecological and social infrastructure, sanitary-hygienic culture, and improve the nosogeographical situation in the regions. It is an urgent issue to carry out complex researches in Kashkadarya region, to improve the living conditions and health of the population, to study the state of its social protection.

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