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HUMAN GEOGRAPHY AND ECOLOGY

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Abstract: In the current era of developing science and technology, the scope of social research is increasing. In this regard, the study of problems related to public health is becoming an extremely urgent issue. The industrialization of the region, the level of urbanization, the density of the transport network, the integration of production and the state of technological armament, population distribution, anthropogenic and technogenic pressure have become important forces influencing the noso-geographical diversification of space, in general, the social factor or the natural and ecological conditions of the environment. The author gives suggestions and recommendations on human ecology and geography.

Keywords: Social ecology, human ecology, ecological disaster, anthropoecological systems, Sustainable development, Club of Rome

In the current era of developing science and technology, the scope of research in the social field is increasing. In particular, the scope of social ecological research is also rapidly developing. In this regard, in particular, the study of problems related to public health is becoming an extremely relevant issue. It should be noted that "public health" is a very complex and multifaceted concept, and according to the Charter of the World Health Organization, the health of the population (human) is determined by its physical, mental and social (social) condition. Public health is also related to the development and organization of social existence. In the current era of increasing influence of the social environment on natural existence, environmental factors (or geoecological factors) affecting public health are merging with economic and social conditions, becoming a complex influencing force.

The industrialization of the region, the level of urbanization, the density of the transport network, the state of integration of production and technological armament, population distribution, anthropogenic and technogenic pressure, in general, together with the social factor or natural and ecological conditions of the environment, have become an important influencing force on the noso-geographical diversification of space. In most developing countries, the extensive conduct of economic sectors leads to the destruction of the natural environment and the further deepening of social problems. Such regions include the countries of Central Asia. The arid, desert conditions of the region, while creating certain difficulties for the lifestyle of the population, are undergoing severe degradation under human influence.

Population health is one of the main indicators of human development. Despite the fact that this problem is closely related to the ecological system of the territory, the issues of its geographical study date back to the recent past. In particular, such studies are currently only at the stage of formation in many developing countries, but are much more advanced in the developed countries of the world, including the CIS countries.

The increase in the population and the corresponding increase in the impact on the natural environment have posed insurmountable environmental problems of various levels to humanity over the past century.



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In the new century, the United Nations (UN) developed the concept of "millennium sustainable development". It includes issues such as the environment, social protection of the population, improving literacy, restoring health, protecting motherhood and childhood, ensuring the mental and physical development of children, and a number of other social issues. The science of "Human Ecology" teaches the laws of the origin, existence and development of anthropoecological systems.

Anthropoecological systems are a community of people who are in dynamic equilibrium with the environment and satisfy their needs through this relationship.

The main difference between anthropoecological systems and natural ecosystems is the presence of human communities in their composition. The activity of a community of people living in a given territory is determined by the level of their impact on the environment. Along with the increase in the population, the need for food, raw materials, water resources, and waste disposal also increases. This, in turn, increases the impact on the natural environment, accelerating the use of biotic and abiotic factors.

Rapid population growth on our planet as a result of improved health care measures, achievements in medical science, an increase in the average life expectancy of people, and a decrease in child mortality is the main demographic feature of the 20th century. In 1999, the population reached 6 billion. In the 20th century alone, the population increased by 4.4 billion. The population increased by 1 billion in the last 12 years of the 20th century alone.

Rapid population growth further enhances its anthropogenic impact on the environment (the rapid development of agriculture, industry, transport, the increase in the area occupied by cities). In countries with a large population, measures are being taken to limit population growth and family planning (for example, in China and India).

In anthropoecological systems, the interaction between humans and the natural environment proceeds in two directions: 1) the biological and social indicators of individual individuals and the entire community change; 2) the environment itself changes in the process of satisfying human needs.

In the study of human ecology, the impact of biogeographical features of the environment on the biological variability of the human population, and in anthropoecological systems, the issue of human health is of great importance. Man, being an object of influence of environmental factors, also affects the environment. The uniqueness of man as an ecological factor lies in the conscious, purposeful, and powerful nature of his impact on nature.

Any biological species has a limited energy resource, therefore its ability to influence nature is limited. Green plants use the energy of the Sun, while other organisms live off the energy of organic matter from the previous food level.

In the process of its conscious activity, man has created very powerful energy sources - nuclear and thermonuclear reactions. As a result, man's capabilities have expanded. He has the power to occupy any ecological niches of the planet.

The uniqueness of man as an ecological factor is also in the fact that his activities are active, creative in nature. The fact that man can create an artificial environment around him also distinguishes him from other ecological factors.



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One of the main factors of the external environment for humans is food. Food replenishes the energy consumed in the body, ensures the plastic metabolism of cells and the body. A person needs at least 2500 kcal of energy per day, this energy is replenished mainly at the expense of carbohydrates, fats and proteins. Easily digestible animal, poultry and fish products are the main sources of protein.

Food should be high-quality and rich in calories, and in addition to proteins, fats and carbohydrates, it should contain enough vitamins (especially vitamins that are not synthesized in the body).

The body also needs proteins that activate enzymes and minerals (Na, K, Ca, P, etc.), which are part of biologically active substances. Malnutrition or a lack of necessary substances in food leads to disruption of various functions in the body. For example, a lack of proteins and vitamins in food leads to a slowdown in growth and development. In continental regions far from the oceans, for example, in Central Asia, there is a lack of iodine in the external environment, and as a result, in food. As a result, the functioning of the thyroid gland is disrupted. To prevent such disorders, iodine must be added to the composition of table salt.

Industry and environmental problems. The development of industry has a strong impact on the environment. Because industries are the main "consumers" of underground and surface resources. As a result of the development of the mining industry, the destruction of the natural landscape and the release of rocks into the open air cause serious damage to the environment. Its consequences are extremely dangerous for humanity, leading to soil degradation, pollution of groundwater sources, and high costs in reclamation processes. The expansion of marine mining is creating a serious environmental hazard, negatively affecting the pollution of the waters of the World Ocean and its bioresources.

In the fuel and energy complex, thermal power plants emit harmful substances to the environment, disrupt the gas composition of the atmosphere, raise water temperatures, while nuclear power plants emit extremely harmful radioactive elements to the environment, or the consequences of disasters at nuclear power plants (the accident at the Chernobyl nuclear power plant in Ukraine) lead to irreparable situations, which requires a very careful approach. Although nuclear power plants are relatively "clean", dams, dams, reservoirs affect the surrounding terrain, flora and fauna, groundwater, and lead to a disruption of the ecological balance.

The development of the metallurgical industry, in addition to seriously degrading the appearance of resource-rich regions, also poses a threat to human health by releasing waste, particles, and dust of iron, lead, tin, copper, mercury, antimony, and other harmful metals into the environment.

The chemical and petrochemical industries, the forestry-cellulose and other industries pollute the air, water, and soil with various harmful emissions. Accidents at chemical industry enterprises in particular have extremely dangerous consequences.

Therefore, it is extremely important to take into account the environmental factor in the development and location of industrial sectors, to adhere to the principles of environmental protection, to introduce "waste-free technologies" and closed production systems.



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Agriculture and environmental problems. The development of agriculture and animal husbandry over thousands of years has had a significant impact on the environment and has created cultural landscapes. In particular, the system of grazing and field agriculture has led to the deforestation of many forests in Europe, and today this process is being repeated in Asia, Africa and Latin America, leading to the opening of the topsoil (washed out by tropical rains), and to the intensification of erosion processes.

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In recent years, as a result of the ban on the use of toxic chemicals in agriculture in economically developed countries, biological methods have become more widespread. Biological methods are safe for the environment and do not cause harm. Biological methods are especially used in horticulture, viticulture, vegetable and melon cultivation, and these ecologically "pure" products are distinguished by their high price. Nevertheless, mineral fertilizers, pesticides, and various chemicals are still widely used in countries around the world to obtain high yields from agricultural crops and increase livestock productivity, as a result of which, according to incomplete data, from 400 thousand to 2 million people are poisoned annually, the bulk of which falls on the rural population of developing countries.

Water transport is one of the main sources of pollution of the hydrosphere (oceans, seas, rivers and lakes). Especially in international economic relations, thousands of tons of oil, as a result of the destruction of tankers and supertankers carrying oil and oil products, cover the ocean and sea waters with a thin film over large areas, causing irreparable damage to the biofoundation of these regions. Air transport is also increasingly making its "contribution" to atmospheric pollution.

That is why today, in economically developed countries and countries transitioning to a market economy, serious scientific research and a set of measures related to the problem of "transport and the environment" are being carried out.

Ecological specialization of mankind - natural and artificial environmental factors constantly affect humans. In different parts of the planet, as a result of the ecological specialization of the population of the Earth during the history of human development under the influence of various natural factors, adaptive types of people have arisen.

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