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THE CONTENT AND ESSENCE OF THE DESERTIFICATION PROBLEM AND ITS GEOGRAPHICAL ASPECTS

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Abstract: This article describes the process of desertification and the natural and anthropogenic factors affecting it, the causes and consequences of the problem of desertification, and their geographical aspects.
Key words: Desert, arid, degradation, erosion, ecosystem, natural resource, tropical forest, anthropogenic factors, soil salinity, desertification.

Desertification means destruction of ecosystems of arid lands under the influence of human economic activity and natural factors, degradation of all organic life forms and, as a result, reduction of the natural economic potential of these areas. Desertification is caused by improper use of natural resources of arid lands and extensive land development.
The issue of desertification is currently one of the global issues and is an integral part of the problems of environmental protection.
Desertification is a set of natural, geographical and anthropogenic processes that lead to the destruction of ecological systems in arid regions, the deterioration of all forms of organic life in them, and, as a result, a decrease in natural and economic opportunities.
These processes include the reduction of the types and quantity of natural plants, soil erosion, soil salinization, and the reduction of fertility. 48.5 million of the earth's surface. About 10 million km2 of it consists of deserts and semi-deserts. about km2 was caused by anthropogenic factors.
The process of desertification in arid regions is mainly due to the increasing impact of human economic activity on desert landscapes as a result of the growth of the population in these regions and the rapid exploitation of natural resources in agriculture and industry.
The use of plants for fuel and fodder, overgrazing of livestock on pastures, and construction of roads, pipelines, large irrigation canals, industrial enterprises, and settlements all contribute to the development of deflationary processes.
It also leads to sand shifting, and disruption of the water balance leads to soil salinization and environmental pollution, and in arid regions, to a disruption of the dynamic balance in nature, that is, to an intensification of the desertification process.
The UN Secretary-General's address to the Intergovernmental Committee on Drought in the Sahel (south of the Sahara) stated that "within another 50 years, three or four countries on the map of Africa could be completely wiped out by deserts."
Deserts are also emerging in other parts of the world. The areas that have already become deserts or are at risk of becoming deserts are most abundant in Asia, Africa, and Australia; less in Europe, North, and Central America; and South America is in the middle. Thus, desertification is occurring at varying rates in the world's arid regions. In some deserts in Africa and Asia, this process is accelerating rapidly.
Currently, desertification is occurring at a rapid pace in many parts of the world. As a result of the desertification of arid regions, 50-70 thousand km2 of usable land is being lost every year. If we take into account that the cost of 1 sq. km. of arable land is 200 thousand dollars in US dollars, then desertification causes economic losses of 10 billion dollars every year.

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Such a large amount will make a significant difference in the lives of even 6.3 billion people. The process of desertification is characteristic of arid (dry) climate regions, which occupy about 30% of the Earth's land area. Desertification is sometimes observed in semi-humid climates. Drought is the "leavening" of the desertification process.

The term "desertification" was introduced into science in 1949 by the French geobotanist A. Aubreville, who studied the humid tropical forests of Africa. There are different interpretations of the meaning of the term desertification. However, most scientists recognize desertification as the impoverishment of landscapes (ecosystems), that is, the decrease (impoverishment) of their biological productivity.

Desertification increases the salinity of soils, increases wind and water erosion, pollutes the atmosphere with dust aerosols, degrades the quality of the ecological environment, and ultimately leads to serious socio-economic and moral damage. The situation with desertification in the Central Asian region, and in particular in Uzbekistan, is becoming more serious every year.

The main reason for this is:

• the area of tree groves decreases from year to year;

• The rate of desertification in the area of the Aral Sea increases, sand and salt appear instead of sea water;

• increased water erosion of land as a result of excessive water use.

Considering that more than 70 percent of the territory of the Republic of Uzbekistan consists of deserts and semi-deserts, we can clearly see the consequences of desertification in irrigated lands, including salinization, waterlogging, wind and water erosion, and rising groundwater levels in pastures, especially in the Karakhotyn, Ayaqagitma, Mullali, and Mingbulak swamps in the Kyzylkum Desert.

The drying up of the Aral Sea has created an additional 5 million hectares of Aral Kum in Uzbekistan. As a result, the ecological environment in this region has deteriorated, desertification processes have intensified, and numerous social problems have arisen.

As a result, the productivity of agricultural land is decreasing year by year, the production of sufficient quantities of food, fodder, and industrial raw materials is slowing down, and the quality indicators of the products produced are also declining.

In order to effectively use natural geographical processes, natural conditions and resources of deserts in the future, it is advisable to pay attention to the following:

1. In the desert zone, there are still large areas of shifting sands that are detrimental to economic activities. The creation of black saxaul corridors in the deserts not only gives the deserts a beautiful landscape, but also protects pastures and soil cover from wind erosion, and adds beauty to the desert.

2. One of the urgent tasks is to search for and organize new protected landscapes to protect rare and unique representatives of the desert zone's organic world.

3. Beyond this, there are pastures that are poor in biological resources. It is desirable to increase the bioproductivity of these areas through phytomelioration measures. In this regard, it is necessary to use aksaksovul, kandym, cherkez, shuvok, izen, iliastragalikabiphyto meliorations.

4. Deserts provide opportunities for the development of not only pastoralism, but also desert tourism.

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If the above-mentioned proposals are implemented, deserts will be used effectively and the ground will be created for future generations. At the same time, we will prevent environmental problems.

List of used literature:

1. Хайитов Ёзил Косимович, Тошбеков Нурбек Ахмадович, Jumaeva Тозагул Аъзамовна. The Formation of Water Collector-Resources Drainage Network of Zarafshan Oasisand the Questions of Recycling. TEST Engineering & Management, 27380 – 27385.
2. Toshbekov Nurbek Ahmadovich. Efficient use of water resources of the amu-bukhara canal. academik. An International multidisciplinary Research Journal 5, 30.
3. Toshbekov Nurbek Ahmadovic. Criteria and scales of the secondary use of collector-drainage waters (on the example of the Bukhara oasis). Bulletin of the Karakalpak branch of the Academy of Sciences of the Republic.
4. Khayitov Yozil Qosimovich, Toshbekov Nurbek Ahmadovich. On some hypotheses of return water. The Way of Science, 39
5. Хайитов Ёзил Косимович, Нурбек Ахмадович Тошбеков, Хамдамова Диловар Нуруллаевна. Гидрологические основы использования дренажных сетей (по премире бухарской области). Monografia pokonferencyjna science. Research, development 26, 2020-28.02
6. Khayitov Yozil Qosimovich, Toshbekov Nurbek Ahmadovich, Zhumaeva Tozagul A'zamovna. Hydrological Assessment Of The Meliorative Condition Of Collector Drink Water In Bukhara Region. Nature and Science. MARSLAND PRESS 18 (4), 2020.99-101
7. Khayitov Yozil Qosimovich, Toshbekov Nurbek Ahmadovich, Zhumaeva Tozagul A'zamovna. Efficient use of water resources of the Amu-Bukhara canal. academik. An International multidisciplinary Research Journal 30, 2020.15-18
8. Тошбеков Нурбек Ахмадович. Scientific basis of water resources and their exploitation use (on the example of Bukhara region). Electronic journal of actual problems of modern science, education and 14. N. Komilova, H. Oblakulov, U. Egamberdiyeva, S. Mirzayeva, N. Shadieva. Some theoretical issues of social geographical research.Asia Life Sciences 22 (2), 157-170.
9. A. Nematov, N. Shadyeva. Ecotourism opportunities in the Bukhara region. Экономика и социум, 206-208.
10. N.S Shodiyeva, Z.M Anvarova. Hydrogeological regime of the Bukhara oasis. Academicia: An International Multidisciplinary Research Journal 10 (11 …
11. A. Nematov, N. Shadyeva. Ecotourism opportunities in the Bukhara region. Экономика и социум, 206-208.
12. А.Н Неъматов, М.К. Эргашева. Географические аспекты организации сельской местности в пустынных зонах (на примере Бухарской области). Ученый XXI века, 27-29.