



# ENVIRONMENTAL THREATS IN UZBEKISTAN AND THEIR MAIN FEATURES

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**Abstract:** Uzbekistan, located in the heart of Central Asia, has witnessed significant economic growth and development in recent decades. However, this progress is often accompanied by an increase in environmental problems that have a significant impact on the environment and public health. In this article, we will look at the main environmental problems that Uzbekistan faces and propose solutions. Recognizing the importance of environmental sustainability, Uzbekistan aims to become a leader in nature conservation, biodiversity conservation and the creation of a sustainable economy.

**Keywords:** air pollution, desertification, water pollution, biodiversity loss, inefficient use of natural resources, lack of environmental awareness, industrial emissions.

**Аннотация:** Узбекистан, расположенный в центре Центральной Азии, стал свидетелем значительного экономического роста и развития за последние десятилетия. Однако этот прогресс нередко сопровождается подъемом экологических проблем, которые оказывают существенное воздействие на окружающую среду и здоровье населения. В данной статье мы рассмотрим основные экологические проблемы, с которыми сталкивается Узбекистан, и предложим пути их решения. Осознавая важность экологической устойчивости, Узбекистан стремится стать лидером в области охраны природы, сохранения биоразнообразия и создания устойчивой экономики.

**Ключевые слова:** загрязнение воздуха, опустынивание, загрязнение водных ресурсов, потеря биоразнообразия, неэффективное использование природных ресурсов, отсутствие экологической осведомленности, промышленные выбросы.

In the modern world, environmental issues are becoming increasingly pressing. Uzbekistan, one of the Central Asian countries, is no exception. With rich natural resources and diverse ecosystems, Uzbekistan faces a number of environmental issues that require urgent attention and solutions. In this article, we will look at some of the major environmental issues facing Uzbekistan and suggest ways to address them. One of the major environmental issues facing Uzbekistan is the depletion of water resources. The country relies heavily on the Amu Darya River and its tributaries for agriculture and drinking water. Extensive use of irrigation results in significant water evaporation and saline contamination of the soil. In addition, pollution of



water bodies due to industry and inefficient use of chemical fertilizers and pesticides exacerbates the problem. The second major issue is air pollution, especially in cities. Lack of waste treatment and purification systems, waste incineration, and the use of coal and unprotected gas in economic activities create a dangerous smog cloud that negatively affects public health and the quality of the environment. The third environmental challenge is the loss of biodiversity and destruction of natural habitats as a result of unsustainable resource use practices, including the exploitation of forests and inadequate protection of fragile ecosystems such as deserts and salt marshes. Uzbekistan is taking decisive steps to address environmental challenges and promote sustainable development. One key approach is the transition to clean and renewable energy sources such as solar and wind power. The Government of Uzbekistan actively supports projects to develop solar and wind power plants, as well as to install solar panels on residential buildings and public institutions, which will reduce dependence on fossil fuels and improve air quality. Agriculture, an important sector in Uzbekistan, is also central to plans to address environmental issues. The introduction of innovative irrigation methods such as drip irrigation will help improve water efficiency and prevent salt degradation of the soil. The use of biological farming and the use of more environmentally friendly fertilizers and pesticides will help reduce the negative impact on the environment. Biodiversity protection is another fundamental aspect of plans to address environmental issues. Uzbekistan is actively working to create national parks and reserves where rare species of plants and animals, as well as vulnerable ecosystems, are protected. This will help preserve the country's natural heritage and provide an opportunity to develop ecotourism. The environmental problems that Uzbekistan faces require immediate and targeted measures to achieve environmental sustainability. The country is making significant efforts to reduce water and air pollution, preserve biodiversity and replace fossil energy sources with renewable ones. Given Uzbekistan's potential and its determination to build a green and sustainable economy, the country's future promises to be environmentally sound and prosperous for all its residents. One of the main environmental problems that Uzbekistan faces is soil degradation and salinization. As a result of inadequate use of land resources, monoculture farming and lack of effective irrigation methods, soil degradation occurs. This leads to a decrease in soil fertility and deterioration of the quality of agricultural land. However, there are solutions to this problem. For example, the introduction of modern irrigation methods, the use of efficient technologies in agriculture, the introduction of crop rotation systems and composting will help restore and maintain soil fertility. Another significant environmental problem in Uzbekistan is the deterioration of water resources. Uzbekistan is located in conditions of acute water shortage, and most of the water resources in the country are used to irrigate agricultural land. As a result of uncontrolled water use, groundwater levels are falling and the amount of running water in rivers is decreasing. This is causing lakes to dry up, including the largest inland lake in Central Asia, the Aral Sea. To address this problem, it is necessary to take measures to use water resources efficiently, implement efficient irrigation systems, regulate water flows, and develop alternative sources of water supply, such as recycling wastewater and rainwater. Climate change. One of the most serious environmental problems facing Uzbekistan is climate change. The region is already experiencing rising temperatures, decreasing precipitation, and increasing droughts. This is leading to the degradation of agricultural land, lower water levels in rivers and lakes, and a threat to the ecosystem. To combat climate change, it is necessary to focus on developing renewable energy sources, such as solar and wind power, and planting



forests to increase carbon dioxide absorption. In addition, it is important to take measures to use water resources efficiently and implement climate change adaptation methods in agriculture.

**Soil degradation.** Another serious environmental problem in Uzbekistan is soil degradation. Intensive use of land in agriculture, improper irrigation and uncontrolled use of chemical fertilizers have led to a decrease in soil fertility and the spread of deserts. To solve the problem of soil degradation, it is necessary to introduce sustainable farming methods, such as increasing organic matter in soils, crop rotation and reducing the use of chemical fertilizers. It is also important to carry out measures to protect and restore the soil cover, including erosion countermeasures.

**Water Pollution.** Uzbekistan, as a country with limited water resources, faces the problem of water pollution. The release of industrial and agricultural wastewater without prior treatment negatively affects the quality of water in rivers and lakes. This poses a threat to human health and ecosystems. To solve the problem of water pollution, it is necessary to introduce modern wastewater treatment methods at enterprises and farms, as well as strictly regulate the emissions of harmful substances. It is also important to conduct information campaigns and educational programs to raise public awareness of the importance of preserving water resources and environmental responsibility. Increasing levels of air pollution are also a serious environmental problem in Uzbekistan. Industrial enterprises, vehicles, and household sources pollute the atmosphere with emissions of harmful substances, which affects public health and the environment. One way to solve this problem is to switch to cleaner energy sources, such as renewable energy. The use of modern emission cleaning technologies and the introduction of strict environmental standards for enterprises and vehicles can also significantly reduce air pollution.

Uzbekistan also faces the problem of preserving biological diversity and protecting natural areas. Unique ecosystems and species of plants and animals are under threat due to unauthorized deforestation, illegal hunting and uncontrolled development of natural areas. To solve this problem, it is necessary to develop and implement programs for the protection and restoration of nature reserves and national parks, as well as to raise public awareness of the need to preserve biodiversity. However, environmental problems in Uzbekistan cannot be solved only at the state level. Environmental awareness and the active participation of each person are also important components in achieving success in solving environmental problems. It is necessary to conduct information campaigns, educate the population in the basics of ecology and introduce sustainable development practices into everyday life. In conclusion, the environmental problems of Uzbekistan require urgent and comprehensive measures to address them. The main problems are soil degradation and salinization, deterioration of water resources, air pollution and loss of biological diversity. The introduction of modern technologies, efficient use of resources, protection of natural areas and raising environmental awareness of the population are some of the ways to solve these problems. Only through the joint efforts of the state, society and the international community will Uzbekistan be able to achieve sustainable development and preserve its natural wealth for future generations.



Desertification is a term that means the depletion of water resources and wood resources, leading to the territory turning into a desert unsuitable for comfortable human habitation and agriculture.

According to 2021 data, every minute Uzbekistan loses 9 square meters of arable land, which becomes unsuitable for use. This trend is striking not only because of the rapid deterioration of the situation, but also because since the 60s of the last century, this problem has been widely studied, and methods have been developed to save the ecology of not only Uzbekistan, but the entire Central Asian region.

According to experts, if work to save the situation does not accelerate, by 2030-2040 arable land will remain only in the Tashkent region and the Fergana Valley.

At the time of publication of the latest data, 70% of the territory of Uzbekistan was already subject to desertification in 2021. Desertification is already causing more frequent dust storms, the latest of which covered a number of cities, including the capital. Tashkent is not the only city that has faced such a problem, so it is necessary to effectively study the experience of "brothers in misfortune". China has faced desertification, in connection with which it has developed a project worth more than nine billion dollars.

The project involves turning the Gobi Desert into a forest. The first tree was planted in 1978, and by 2021 the forest covered 60% of the desert.

In Uzbekistan, they promised that the program for saving the country's ecology will be presented to the people by 2025-2026. It is not yet known what this program will be.



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