

GEOECOLOGICAL PROBLEMS IN KOKDALA DISTRICT

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Abstract: *Kokdala district is located in the Kashkadarya region, and its main economic activity is agriculture, especially cotton cultivation. Geoecological problems in the district include, in particular, problems such as reduced soil fertility, inefficient irrigation systems, climate change, and depletion of water resources. This article analyzes the geoecological situation in Kokdala district, considers the main problems and the factors that caused them. The necessary measures to eliminate the problems, the importance of environmental education, and recommendations aimed at ensuring environmental sustainability are given. The article proposes a comprehensive and systematic approach to reducing environmental crises in the district.*

Keywords: *Kokdala district, geoecological problems, irrigation system, agriculture, land fertility, climate change, salinity, ecological balance, resource management, environmental education.*

ГЕОЭКОЛОГИЧЕСКИЕ ПРОБЛЕМЫ В РАЙОНЕ КОКДАЛА

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Аннотация: *Кокдальский район расположен в Кашкадарьинской области, и его основной экономической деятельностью является сельское хозяйство, особенно хлопководство. Геоэкологические проблемы района включают, в частности, такие проблемы, как снижение плодородия почв, неэффективные ирригационные системы, изменение климата и истощение водных ресурсов. В данной статье анализируется геоэкологическая ситуация в Кокдальском районе, рассматриваются основные проблемы и факторы, их вызвавшие. Приводятся необходимые меры по устранению проблем, важность экологического образования и рекомендации, направленные на обеспечение экологической устойчивости. В статье предлагается комплексный и системный подход к снижению экологического кризиса в районе.*

Ключевые слова: *Кокдальский район, геоэкологические проблемы, ирригационная система, сельское хозяйство, плодородие земель, изменение климата, засоление, экологический баланс, управление ресурсами, экологическое образование.*

Introduction: Kokdala district is located in the Kashkadarya region, and agricultural activities predominate in this area. Cotton, grain, vegetables, and fruit

crops are grown in the district, but these activities have negative environmental impacts. Although Kokdala district is known for its natural resources and land use, serious environmental problems need to be addressed to ensure long-term environmental sustainability. This article analyzes the geoecological problems of Kokdala district, focuses on their causes, and provides recommendations for addressing these problems.

Main part: Kokdala district, located in Kashkadarya region, is the basis of its economic activity. There are irrigated lands in the district, which are used to grow many crops, but improper management of land resources, especially the outdated and inefficient use of irrigation systems, exacerbates geo-ecological problems in the region. A large part of the crop in the district is cotton, which reduces land fertility and pollutes the environment.

The irrigation system in Kokdala district is unevenly and inefficiently used. The irrigation system in the district, like in other regions of Uzbekistan, is mainly associated with intensive irrigation methods in agriculture. This method leads to excessive consumption of water resources, resulting in water shortages. Irrigation, which is carried out using large irrigation canals and wells, is not always effective, which leads to salinization of the land.

The outdated irrigation system and mismanagement of resources, along with reducing land fertility, are leading to a decline in water resources in the district. The lack of water, especially during the summer growing season, leads to a lack of irrigation for crops, which leads to a decrease in yields. At the same time, water pollution sometimes increases the salinity of the soil, making it unsuitable for other crops.

Climate change, which is exacerbating environmental problems around the world, is also having a significant impact on agriculture in the Kokdala district. Rising temperatures in the summer months, a decrease in heavy rainfall, and unfavorable climatic conditions are further increasing the need for irrigation. In the Kokdala district, climate change is causing difficulties, especially in growing

cotton and other crops. The reduction in the amount of water needed for crops and the weakness of irrigation systems are leading to an increase in the ecological crisis.

Land salinization in the Kokdala district is one of the primary geocological problems. Improper irrigation management and excessive consumption of water resources are leading to land salinization. Salinization reduces soil fertility and prevents plants from absorbing nutrients. This process, in turn, significantly reduces yields. To prevent salinization, it is necessary to improve the resource management system, introduce crop rotation, and take agrotechnical measures.

The largest ecological crises in the Kokdala district are associated with the excessive use of land and water resources. This, in turn, leads to a disruption of the natural balance. This leads to problems with salinization, water pollution, crop diseases and harmful insects. These processes disrupt the stability of interconnected ecological systems and reduce the ability of ecosystems to recover. The level of environmental education of the district population and the effective use of natural resources has decreased.

To solve geocological problems in the Kokdala district, it is necessary to implement the following recommendations:

- ✓ Modernization of the irrigation system: Introduction of modern, water-saving irrigation technologies and effective management of irrigation systems.
- ✓ Land resource management: Taking agrotechnical measures to maintain and restore soil fertility, implementing crop rotation and proper land management.
- ✓ Effective management of water resources: Introduction of water-saving technologies, creation of optimal water management and monitoring systems.
- ✓ Adaptation to climate change: Cultivation of crops suitable for climatic conditions, adaptation of water management and agrotechnical methods to climate change.

✓ Environmental education and awareness raising: Informing the population about environmental problems, effective use of natural resources and strengthening environmental education.

Conclusion: Geocological problems in the Kokdala district have become the main problems of agricultural activity. The unevenness of the irrigation system, soil salinization, climate change and depletion of water resources are causing an ecological crisis. To solve these problems, an integrated approach is needed, the resource management system is modernized, and ecological sustainability is ensured. For this, important measures should be taken to increase the environmental education of the population and ensure ecological sustainability.

Adabiyotlar

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