



THE IMPACT OF OIL EXTRACTION ON THE ENVIRONMENT

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Abstract: *This article analyzes the environmental problems of Uzbekistan and the measures taken to address them.*

Key words: *chemistry, ecology, air, water, soil, human, biological*

Introduction

The environmental condition of Uzbekistan has required serious attention in recent years. Climate change, the reduction of water resources, and air pollution pose a threat to the sustainable development of the country. Therefore, it is necessary to implement comprehensive measures to identify and eliminate environmental problems. Today, oil is considered one of the main sources of energy in the global economy. It is almost impossible to imagine the transport, industrial, and energy sectors without oil. However, oil extraction processes have a significant negative impact on the environment. This article discusses the effects of oil extraction on nature, human health, and ecological balance.

Literature Review

Air Pollution: During oil extraction, harmful gases such as methane, carbon monoxide, and sulfur compounds are released into the atmosphere. These gases pollute the air, intensify the greenhouse effect, and contribute to climate change. As a result, global warming, droughts, and extreme weather events occur.

Negative Impact on Water Resources:Oil and chemical substances may leak into underground and surface water sources located near oil fields. This leads to the deterioration of drinking water quality and the death of aquatic organisms. Oil spills in seas and oceans are considered among the most serious environmental disasters.

Soil Pollution:Oil and petroleum products seep into the soil and reduce its fertility. Consequently, plant growth slows down or disappears completely. The degradation of agricultural land also negatively affects human life.

Damage to Biodiversity:In areas where oil is extracted, the habitats of animals and plants are disrupted. Some species are forced to migrate, while others may become extinct. This situation leads to the disruption of ecological balance.

Impact on Human Health:Among populations living near oil industry regions, respiratory diseases, skin diseases, and allergic conditions are more common. Long-term environmental pollution creates serious risks to human health.

Results and discussion

Studies show that oil extraction processes have a significant negative impact on the environment. Research findings indicate that in regions where oil fields are located, the amount of harmful gases in the atmosphere increases, leading to intensified air pollution. In addition, the accumulation of oil and chemical substances in water resources worsens water quality and reduces the number of aquatic organisms. Soil contamination by oil decreases soil fertility and negatively affects plant growth. The reduction of biodiversity and the gradual disappearance of certain animal and plant species disrupt ecological balance. From the

perspective of human health, an increase in various diseases has been observed among populations living in areas with developed oil industries. The obtained results demonstrate the necessity of a deeper analysis of environmental problems related to oil extraction. Air, water, and soil pollution negatively affect not only nature but also social and economic sectors. The disruption of biological balance may destabilize ecosystems and lead to long-term ecological crises.

Therefore, strict compliance with environmental requirements and standards during oil extraction is essential. The introduction of modern and environmentally safe technologies, reduction of waste, and strengthening of monitoring systems can help minimize negative impacts. Furthermore, the development of alternative and renewable energy sources can reduce dependence on oil and contribute to environmental protection. The results and discussions show that sustainable development can only be achieved through environmental responsibility and scientific approaches.

Conclusion

In conclusion, although oil extraction is important for the development of modern society, its negative impact on the environment is extensive and multifaceted. The oil industry causes pollution of air, water, and soil, thereby disrupting ecological balance. Harmful gases released into the atmosphere contribute to climate change, global warming, and the increase of natural disasters. Oil and chemical substances entering water bodies lead to the destruction of aquatic organisms and the deterioration of drinking water quality. Moreover, soil contamination caused by oil reduces agricultural productivity and makes land resources unsuitable for use. This situation negatively affects not

only nature but also the economic well-being of people. The reduction of biodiversity poses a serious threat to ecosystem stability and increases the risk of extinction of certain animal and plant species.

The impact of oil extraction on human health also deserves special attention. In polluted environments, respiratory and allergic diseases are becoming more widespread among the population. Therefore, ignoring environmental problems creates serious risks for future generations. From this perspective, it is important to introduce environmentally safe technologies in oil extraction, strengthen environmental protection measures, and establish strict control systems.

In addition, expanding the development and use of renewable energy sources can reduce pressure on nature. Only through responsible and rational approaches can humanity preserve the balance between humans and nature and achieve sustainable development.

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