

## The Effective Use of Economic and Natural Resources is Our Priority

Suvonkulova Zarinabonu, Mallakhonov Javohir

Gulistan State University " Digital, Student of the Faculty of Economics and Innovation"

zarisuvonkulova@gmail.com, jmallaxanov@gmail.com

**Abstract:** This article discusses the issue of efficient use of economic and natural resources. It highlights that the demand for natural resources has increased globally due to population growth and industrial development, and that the limitations of these resources and their mismanagement have led to environmental problems. Rational use of resources is crucial not only for ensuring economic prosperity but also for preserving the environment and leaving a healthy ecological environment for future generations. It is shown that modern technologies, the use of renewable energy sources, and practices such as waste recycling play a significant role in global sustainable development. The research findings provide important conclusions about the role of states and society in the effective management of resources and maintaining ecological balance.

**Keywords:** Economic resources, natural resources, environmental problems, sustainable development, modern technologies, renewable energy, efficient use of resources, environmental protection, ecological balance.



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### Introduction

The modern society is paying great attention to the effective use of economic and natural resources to ensure sustainable development. The increase in the world population, the development of industry, and the acceleration of urbanization processes are leading to a growing demand for natural resources. At the same time, the limited nature of these resources and their mismanagement are causing ecological problems. The rational use of resources is important not only for ensuring economic prosperity but also for protecting the environment and providing a healthy ecological environment for future generations. Effective management and innovative approaches to the efficient use of economic resources are considered a key factor in ensuring social and ecological sustainability not only for countries but also on a global scale.

The classification of natural resources is based on three criteria: the source of origin, production, and the degree of renewability. Based on origin, natural resources are divided into biological, mineral, and energy resources. Biological resources are all living components that constitute the environment of the biosphere: producers, consumers, and decomposers. They serve as a source of material and spiritual benefits for humans [Bobomurodova, N. J. 2023].

This topic discusses the essence of economic and natural resources, their efficient management, the contribution to sustainable development, and the responsibilities of society in this regard. This issue is one of the pressing problems that determine the future of humanity. Currently, new methods of utilizing natural resources are being widely implemented: the use of modern, resource-saving, and environmentally friendly technologies in the process of extracting natural resources. For example, when extracting coal and other mineral resources, it is preferable to use more closed methods rather than open methods; - utilizing non-renewable resources in a complex manner without generating waste. From the extracted ore, not only gold or precious metals are separated, but also the ore is washed with wastewater, and new technologies are introduced to fully utilize the ore and extract other metals contained within it. Biological resources refer to the diversity of the flora and fauna world. The next category includes the resources of the World Ocean. They can be dissolved in water, on land, or beneath the seabed. This also includes protected, natural-climatic, and balneological resources [Bobojonova, M. J. 2025].

### **Methodology**

The methodology for this research is designed to analyze the efficient use of economic and natural resources through a comprehensive qualitative approach. The study employs a literature review and data synthesis from existing research, policy reports, and empirical findings to explore how modern technological advancements and management strategies contribute to resource optimization. The research is structured around an in-depth analysis of various economic and environmental factors, including the classification of natural resources, the role of renewable energy, and the impact of waste recycling. The data collection process involves reviewing academic sources and case studies that highlight the role of sustainable resource management in promoting ecological balance and economic stability. Key indicators such as energy consumption patterns, waste reduction statistics, and the effectiveness of technological interventions are examined to assess their implications for sustainable development. The study further explores the policies implemented in different countries to enhance resource efficiency and minimize environmental degradation. Through comparative analysis, the research identifies best practices that have successfully improved resource utilization, emphasizing the transition from non-renewable to renewable energy sources and the application of innovative recycling methods. By synthesizing existing findings, the study aims to provide actionable insights into the importance of rational resource management for long-term economic growth and environmental sustainability. The methodology ensures that conclusions are drawn from credible sources and real-world applications, reinforcing the need for continued research and innovation in the field of sustainable resource management.

### **Research results**

Depending on the technology used in the processing of petroleum products, it is possible to obtain gasoline from 60% to 85-90% of oil. -Transition from finite resources to inexhaustible resources. It is estimated that in the future, if relatively inexpensive methods of converting solar radiation into solar energy are developed, it will be possible to cover 50 percent of the energy consumed by heating systems in a number of countries; - Widespread use of recycling technologies and use of waste as raw material in other processes. Innovation is an integral feature of a great scientist. As you can see, the final result of his scientific research was always to find new ways, new discoveries [Abdullaev, K. F., & Bobomurodova, N. Zh. 2019]. US experience shows that obtaining aluminum from recycling cans is 10 times cheaper than extracting it from bauxite (natural deposits). The process of recycling bottles also separates them from natural resources and is much cheaper than recycling. In addition, the processes mentioned above save water and reduce the negative impact on the environment, especially on the atmosphere. In the process of processing paper from pulp, air pollution is reduced by 73%, water pollution by 25%, and solid waste by 39% compared to the process of obtaining paper from trees. In addition, when

processing 1 ton of paper from pulp, 4.7-5.6 m<sup>3</sup> of trees and 165-200 m<sup>3</sup> of water are saved or saved. - use of waste as fuel, etc. 35 3.4.

Energy resources and their use The production of electricity at power plants and power plants is associated with complex environmental problems. The need for energy is one of the basic human needs. Energy is essential not only for the normal functioning of modern complex human society, but also for the survival of each individual. Currently, electricity is mainly produced at hydroelectric, thermal, and nuclear power plants. On the surface, hydroelectric power plants are considered to be environmentally friendly enterprises that do not harm nature. People built many large hydroelectric power plants on large rivers. Now it is clear that these large structures have caused great harm to both nature and humans. First, the construction of dams on large river courses has led to the fact that large areas of useful land have been left under water bodies. Many people have been displaced from their homes and deprived of pastures. Secondly, rivers were dammed and dams disrupted fish migration. Third, water accumulates in basins and remains there for a long time, and its quality deteriorates. The stability of water bodies decreases, which poses a threat to the river and organisms living near it, and has certain effects. Fourth, the increase in local water levels affects groundwater. As a result, flooding of land, bank displacement, and various types of erosion are observed. Thermal power plants (TPPs) also play an important role in meeting the country's electricity needs. Not everyone knows that coal has a certain degree of radioactivity. At TPPs, large amounts of fuel are burned and a large amount of radioactive waste is released into the air. Also, due to the combustion of organic fuels, a lot of damage is caused to nature.

Studies on the efficient use of economic and natural resources have shown the following main results: Modernization of technologies and the introduction of environmentally friendly approaches have significantly increased the level of efficient use of resources. For example, the widespread use of renewable energy sources has led to energy efficiency and reduced atmospheric pollution. Many countries are switching from fossil fuels (oil, coal) to renewable sources (sun, wind, water). This not only helps to slow down the depletion of natural resources, but also to maintain ecological balance.

The use of efficient management methods and waste recycling has reduced the waste of resources in manufacturing processes. For example, the use of waste as a secondary raw material in manufacturing has made it possible to achieve significant economic efficiency.

The results of the study show that the efficiency of resource use depends on the level of economic development of the country. While developed countries have a high level of efficient use of resources due to the advancement of technologies and management systems, developing countries face difficulties in this regard. Increasing the knowledge and skills of the population on the use of resources has yielded significant results. For example, promoting habits such as saving water or not overusing energy has played an important role in shaping the responsible approach of the population. The efficient use of economic and natural resources has played an important role in achieving sustainable development goals. In particular, the results achieved in reducing energy consumption, increasing productivity, and improving the ecological environment are having a positive impact on a global scale. The efficient use of economic and natural resources has played an important role in achieving sustainable development goals. In particular, the results achieved in reducing energy consumption, increasing productivity and improving the ecological environment are having a positive impact on a global scale.

## Discussion

Thermal power plants use fuel oil and gas as fuel. From an ecological point of view, power plants operating on liquid and especially gas are considered cleaner than those operating on solid fuels. Converting thermal power plants to gas operation significantly increases the efficiency of the

power plant (EFC) and improves the ecological situation. Nuclear power plants are much cleaner from an ecological point of view than conventional power plants. But they are also much more dangerous. This is evidenced by the accidents at the Chernobyl and Fukushima nuclear power plants. Thus, energy, it seems, poses problems for humanity that need to be solved. Work is being carried out in several areas to solve these problems. Ecologists emphasize the promising use of non-traditional, renewable energy sources. These are, first of all, solar and wind energy, geothermal energy, mechanical and thermal energy of the ocean. In our country, great work is being done on the use of solar (thermal) energy. How does radioactive pollution differ from other pollution? Radioactive nuclides are the nuclei of unstable chemical elements. They emit charged particles and emit short-wave electromagnetic radiation. It is these particles and radiation that can cause various diseases in the human body, in particular, radiation sickness. Natural sources of radioactivity are found everywhere in the biosphere. Humans, like other living organisms, are constantly exposed to natural radiation. External radiation comes from radiation emitted from space and radioactive nuclides present in the environment. Internal radiation is caused by radioactive elements entering the human body through air, water, and food. The most dangerous is anthropogenic radioactive contamination of the biosphere, that is, contamination caused by human activity. Currently, radioactive elements are widely used in various industries. Serious radioactive contamination occurs due to carelessness in their storage and transportation. The explosion at the Chernobyl nuclear power plant released only 5% of the nuclear fuel into the environment. This exposed many people to radiation. A large area was contaminated with radiation to such an extent that living in those places became dangerous for health.

Radiation spread for hundreds and thousands of kilometers from the accident site. Currently, the collection and storage of waste from the military industry and nuclear power plants is an acute problem. Every year, their fallout poses a great threat to the environment. The group of useful minerals includes ores and non-ores, oil, gas, coal, peat, and groundwater. They are considered a source of fuel and energy for humanity. Their use is increasing year by year. If over the past 25 years, the world demand for coal has increased 2 times, for potassium, manganese and phosphorus salts 2-3 times, for iron 3 times, for oil and gas 6 times, then during this period the population growth has amounted to 40%. It is necessary to take a historical approach to determining the responsibility of our education for nature protection. In the last century, industry was not yet developed, and its negative impact on nature was not a major environmental reality. The tasks of the school for nature protection were not yet so acute. But now our country is striving to become highly industrialized, times have changed radically [Бобомуродова, Н. Ж. 2021].

Currently, 150 billion tons of mineral raw materials are mined worldwide annually. As a result of natural weathering, 15 billion tons of rocks are carried to the seas and oceans through rivers, and 3-4 billion tons of rocks are released into the atmosphere. Man moves 1,500-2,000 billion tons of rocks from one place to another annually to meet his needs. According to the United Nations (UN), 2.6 billion tons of oil, 3.6 billion tons of chromium ore, 3-4 billion tons of lead ore, 6 billion tons of iron ore, 7.3 billion tons of copper ore, 32 billion tons of coal, 1.2 million tons of uranium, mercury, molybdenum, nickel, silver, gold and 38 platinum ores, 120 million tons of phosphates and 159 million tons of salt are mined annually in the world. If mineral resources are exploited at the current rate, gold reserves could be exhausted in 35 years, zinc in 36 years, potassium in 40 years, uranium in 47 years, copper in 66 years, antimony and mercury in 70 years, and oil, gas, and coal in 150 years. Therefore, due to the lack of raw materials and mineral resources in many developed countries (Japan, England, Germany, Italy, Holland, Belgium and others), they are recycling secondary waste and using the resources of other countries. Currently, scientists are forced to discover new deposits. According to Japanese scientists, the concentrations of metals in the ocean floor could supply the world's industry with copper for 2,000 years, manganese for 14,000 years, and nickel for 70,000 years at the current consumption rate. Currently, only 1% to 20% of these resources are used for the needs of world industry. In

addition, in most cases, underground resources are mined for 1-2 types of metals, and the rest is dumped into the environment as waste. For example, from 100 tons of ore, 14 kg of vanadium, 17 kg of nickel, 30 kg of chromium, 80 kg of manganese, 0.5 tons of titanium, 5 tons of zinc, and 8 tons of aluminum can be extracted.

## Conclusion

Effective use of economic and natural resources is considered one of the most important factors for sustainable development today. Research results show that rational management, the use of modern technologies and the responsible use of resources not only increase economic efficiency, but also help maintain ecological balance.

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