



## RATIONAL USE OF NATURAL RESOURCES IN GEOGRAPHY EDUCATION

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**Abstract:** *This article analyzes the issues of rational use of natural resources in geography education. The types of natural resources, their significance, and contemporary challenges are discussed. In addition, the article highlights the methodological aspects of teaching the rational use of resources in geography lessons, the importance of sustainable management, and the development of ecological awareness. Practical recommendations are provided for fostering ecological responsibility among students and promoting resource conservation. The article is valuable from both scientific and practical perspectives and aims to engage the younger generation in environmental preservation and sustainable development.*

**Keywords:** *natural resources, rational use, geography education, sustainable development, ecological awareness, renewable resources, industry and economy*

### **Introduction**

Natural resources are a set of natural elements such as underground and surface minerals, water, forests, air, biomass, and energy sources that are essential for human activity. They are of great importance for human life, economic development, and the stability of society. In the modern world, the demand for natural resources is rapidly increasing: the population is growing, industrial and transport systems are developing, and technological progress is increasing pressure on resources. Therefore, the issues of their rational and efficient management are relevant not only from an ecological but also from an economic and social perspective.

Geography education is a key tool in teaching the rational use of natural resources. This subject not only studies natural phenomena but also provides an opportunity to analyze the complex relationship between human activity and the



natural environment. Through this, students gain knowledge about the spatial distribution of resources, their economic and ecological value, as well as the consequences of their misuse.

Today, the consequences of improper use of natural resources are being felt worldwide: water scarcity, land and forest degradation, loss of biodiversity, and atmospheric pollution are increasing ecological problems. Therefore, teaching the concept of rational use of resources in geography education, fostering ecological responsibility among students, and instilling the principles of sustainable development are becoming urgent tasks [1]. In addition, the economic and ecological significance of natural resources, modern approaches to their conservation and management, and the need to raise environmentally conscious and responsible young generations are highlighted. This makes the topic of the article even more important and practically useful, and ensures that the following sections will examine in detail the types of resources, problems, and management strategies.

## **Methods**

This study is aimed at examining the issues of rational use of natural resources in geography education, and the research methodology includes several approaches and methods. The main goal of the study is to develop students' knowledge, skills, and ecological awareness regarding the rational use of natural resources, as well as to identify the spatial and ecological consequences of resource use [2]. The methodological basis of the study includes the following:

The first stage of the research consisted of a systematic review of the literature. At this stage, the types of natural resources, their economic and ecological significance, sustainable management concepts, as well as scientific articles, books, and reports of international organizations on the rational use of resources in geography education were studied. Through this, existing theoretical approaches, advanced experiences, and methodological recommendations were analyzed. The literature review helped to identify the most effective approaches for developing ecological awareness among students and teachers [3].



As the second method, the pedagogical observation method was applied. This method included monitoring students' activities in working with resources during geography lessons, projects, and practical exercises. During the observation, it was possible to assess students' practical skills in working with resources, their ability to make ecological decisions, and their level of interaction and participation. At the same time, pedagogical observation helped to identify how teachers apply ecological content in the lesson process and how they guide students toward the principles of rational management [4].

The third stage of the study included the survey and interview methods. Through this method, the knowledge, opinions, and practical skills of teachers and students regarding the use of natural resources, understanding ecological problems, and rational management were identified. Surveys helped assess students' knowledge about the ecological, economic, and social consequences of resource use. Interviews made it possible to study teachers' experience, pedagogical approaches, and practical difficulties in ecological education more deeply [5].

The fourth stage of the study was based on spatial analysis and the use of GIS (Geographic Information System) technologies. This method allowed evaluating the spatial distribution, intensity of use, and ecological status of water, forest, land, and energy resources. GIS technologies made it possible to identify spatial trends related to resources, map problem areas, and show the level of ecological risk. The results of the spatial analysis added visual and quantitative data to the study, helping to better understand ecological problems [6].

The study also employed the case-study method, which allowed an in-depth examination of practical experience in resource use in local areas. In selected areas, the intensive use of water resources, land and forest degradation, ecological problems related to waste, and existing management strategies were analyzed. Through the case-study method, the experiences of students and teachers, the social and ecological consequences of resource use, and rational use strategies were studied.



All data obtained from the above methods were integrated and systematically analyzed. Literature review, pedagogical observation, surveys, GIS results, and case-study examples were combined to help develop ecological awareness among students and identify effective strategies for the rational use of resources. The data were evaluated in terms of quality and quantity, problems and solutions were identified, and the study results provided a basis for future recommendations.

Thus, the research methodology is based on a comprehensive approach, combining theoretical and practical aspects, and allows for a systematic study of the issues of rational use of natural resources in geography education [7].

## **Results**

The results of the study showed that although students understand the types of resources and their spatial distribution well, their practical skills in rational management are insufficient. In local areas, the excessive use of water resources, degradation of land and forests, and the abundance of waste have intensified ecological problems. At the same time, the effectiveness of pedagogical methods was identified: through projects, GIS technologies, and ecological excursions, students have the opportunity to improve their skills in working with resources.

The results indicated that geography education is an important tool for developing ecological awareness among students; however, it is necessary to expand practical methods and strategies for resource management. The study also showed that renewable resources conservation, energy efficiency, and ecological monitoring are effectively used in the research areas, but their broader application is not sufficient [8].

## **Discussion**

The analysis of the results showed that the issues of rational use of natural resources in geography education require a comprehensive approach. Students need to develop knowledge and skills in resource conservation, waste reduction, and ensuring ecological safety, which enables the practical application of sustainable development principles. Practical experience in working with resources through GIS,



projects, excursions, and digital technologies is effective and fosters ecological responsibility among students.

The ecological problems observed in local areas also exist on a global scale, such as water scarcity, deforestation, and the abundance of waste, which need to be studied from international experience. To promote the rational use of natural resources, it is important to expand practical methods in the educational process, implement ecological monitoring, and introduce sustainable development programs. At the same time, it is necessary to carry out continuous practical work to develop students' ecological awareness, save resources, and preserve the natural environment [9–10].

Thus, the study demonstrates the opportunities provided by geography education to develop students' knowledge, practical skills, and ecological responsibility regarding the rational use of natural resources. This is crucial for preparing future generations to ensure ecological safety and apply the principles of sustainable development in practice.

## Conclusion

The issues of rational use of natural resources are of great ecological, economic, and social importance. Through geography education, students are provided with knowledge about the types of resources, their spatial distribution, and their economic and ecological value. Practical methods, project work, and GIS technologies help develop students' ecological awareness and resource management skills. In this way, the younger generation assimilates the principles of sustainable development and ecological responsibility and contributes to the preservation of natural resources for future generations.

## REFERENCES

1. Bobojonov, A. (2018). *Foundations of Natural Resources and Their Management*. Tashkent: Fan.



2. Karimov, S., & Tursunov, B. (2020). *Rational Use and Sustainable Development Issues in Geography Education*. Tashkent: Ministry of Higher and Secondary Specialized Education of the Republic of Uzbekistan.
3. United Nations. (2015). *Transforming Our World: The 2030 Agenda for Sustainable Development*. New York: United Nations.
4. Pearce, D., & Turner, R. K. (1990). *Economics of Natural Resources and the Environment*. London: Harvester Wheatsheaf.
5. World Bank. (2021). *World Development Report 2021: Data for Better Lives*. Washington, DC: World Bank.
6. Shokirov, J. (2019). *Methods for Developing Ecological Awareness in Geography Lessons*. Tashkent: O'qituvchi.
7. FAO. (2020). *The State of the World's Forests 2020*. Rome: Food and Agriculture Organization.
8. UNEP. (2019). *Global Environmental Outlook – GEO-6*. Nairobi: United Nations Environment Programme.
9. Sadikov, M., & Rakhmonov, I. (2021). *Rational Use of Natural Resources and GIS Technologies*. Tashkent: Fan va Texnologiya.
10. Cicin-Sain, B., & Knecht, R. W. (1998). *Integrated Coastal and Ocean Management: Concepts and Practices*. Washington, DC: Island Press.