



THE ROLE OF THE GREEN ECONOMY IN ENSURING SUSTAINABLE DEVELOPMENT

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Abstract. This article is based on the development and implementation of a climate budget labeling model for Uzbekistan with the support of the United Nations Development Program. The history of the economic approach to the concept of sustainable development is covered. A forecast of funds provided for 2024 for the section of "green" budgeting sectors is given.

Keywords: UN development program, concept of sustainable development, green economy, financial mechanisms, trust funds, climate change, environmental problems.

BARQAROR RIVOJLANISHNI TA'MINLASHDA YASHIL IQTISODIYOTNING O'RNI

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Toshkent to'qimachilik va yengil sanoat instituti

Annotatsiya. Ushbu maqolada Birlashgan Millatlar Tashkiloti Taraqqiyot dasturi ko'magida O'zbekiston iqlim byudjetini markirovkalash modelini ishlab chiqish va joriy qilish asoslangan. Barqaror rivojlanish konsepsiyasiga nisbatan iqtisodiy yondashuv tarixi yoritilgan. "Yashil" byudjetlashtirish bo'yicha sohalar kesimida markirovka qilingan mablag'larning 2024-yil uchun prognozi keltirilgan.

Kalit so'zlar: Birlashgan millatlar tashkiloti taraqqiyot dasturi, barqaror rivojlanish konsepsiyasi, yashil iqtisodiyot, moliyaviy mexanizmlar, markirovka qilingan mablag'lar, iqlim o'zgarishi, ekologik muammolar.

РОЛЬ ЗЕЛЕННОЙ ЭКОНОМИКИ В ОБЕСПЕЧЕНИИ УСТОЙЧИВОГО РАЗВИТИЯ

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Аннотация. Данная статья основана на разработке и внедрении модели маркировки климатического бюджета Узбекистана при поддержке Программы развития ООН. Освещена история экономического подхода к концепции устойчивого развития. Дан прогноз средств, предусмотренных на 2024 год по разделу отраслей «зеленого» бюджетирования.

Ключевые слова: программа развития ООН, концепция устойчивого развития, зеленая экономика, финансовые механизмы, целевые фонды, изменение климата, экологические проблемы.

Introduction.

In recent years, the rapid growth of industrial production, energy, construction, transport, mining, and other sectors of Uzbekistan's economy has posed serious challenges in the field of environmental protection. The country's accelerated transition toward a green economy, the growing share of alternative and renewable energy sources, the expansion of the national "Green Space" project, and the establishment of the Ministry of Ecology, Environmental Protection and Climate Change all demonstrate that transitioning to a green economy and achieving carbon neutrality have become key strategic priorities of New Uzbekistan.

With the assistance of the United Nations Development Programme (UNDP), through its "Financing Sustainable Development in the Republic of Uzbekistan" project, the Government of Uzbekistan is developing an integrated national financing framework to support national development strategies and the Sustainable Development Goals (SDGs). The UNDP project aims to mobilize public and private resources necessary for financing sustainable development, ensuring that national strategies and reforms maximize their economic, environmental, and social impact within the framework of the 2030 Agenda.

Achieving sustainable development in Uzbekistan's 2030 social and economic development strategy requires the coordination of economic, social, and environmental components, which is a complex challenge. The economic and social dimensions introduce new responsibilities—such as promoting intergenerational equity and targeted support for vulnerable population groups—while the economic and environmental components demand the evaluation of external environmental impacts and the creation of new approaches to sustainability assessment.

The 2019 Presidential Decree approving the "Strategy for the Transition to a Green Economy for 2019–2030" serves as a key programmatic framework for ensuring sustainable development in Uzbekistan based on green economic principles. The strategy emphasizes increasing energy efficiency and rational consumption of natural resources, to be achieved through technological modernization and the development of financial mechanisms. By 2030, Uzbekistan aims to reduce greenhouse gas emissions per unit of GDP by 10 percent compared to 2010 levels, ensure 100 percent access to modern and affordable electricity, and expand the use of environmentally improved fuels, electric transport, and eco-friendly production technologies.

Literature Review.

Economic approaches to sustainable development concepts were established by Lindall and Hicks (2016). According to Hicks-Lindalls theory of maximum flow of gross income, income must be generated while maintaining gross capital. In this context, rational use of limited resources and ecological technologies (such as energy and material-saving technologies), creation of ecological products, and waste management are considered. The main issue in addressing this problem is which type of capital (physical, natural, or human capital) should be preserved, the extent to which different types of capital can substitute for each other, and the issue of valuing these assets (ecological resources). As a result, two types of economic sustainability emerged:

- **Weak sustainability** — economic sustainability based on the preservation of natural and accumulated capital over time without diminishing it;

- **Strong sustainability** — economic sustainability based on the non-depletion of natural capital (where profits derived from the sale of non-renewable resources are directed to increasing the value of renewable natural capital).

The social aspect of sustainable development is human-centered, aimed at ensuring the stability of social and cultural systems.

The concept of **“Green Economy”** as an economic discipline emerged in the late 20th century. It studies the relationship between the economy and the natural environment, recognizing that the natural environment is an integral part of the economy and must operate within its boundaries. The concept of a green economy encompasses scientific ideas in various economic fields, such as resource conservation economics, ecological economics, environmental economics, green politics, international economic relations theory, economic modernization, and innovative economics. As a scientific field, **“Green Economy”** has its own history of development and stages of formation. The problems related to the limited and non-reproducible nature of natural resources have a serious impact on all areas of human activity, including economic activity (Beder, 2011).

The scientific study of this issue began to gain momentum in the 1960s-1970s. During this period, a new direction based on the principles of traditional economics emerged, known as **“environmental economics”**. Within this direction, the social-economic consequences resulting from economic activities impact on the environment began to be interpreted as externalities, or external effects. According to this, environmental problems must be addressed within the framework of existing economic relations and generalized at the international level (Resolution, 2019). For example, the issue of organizing international trade in greenhouse gases can be cited.

In the 1980s-1990s, as an alternative approach to solving environmental problems through narrow economic approaches, the field of **ecological economics** emerged and began to develop rapidly. Unlike environmental economics, this field is seen not as a specific branch of economics but as an independent field of scientific research (SPASH, 2011).

The development of **environmental economics** and **ecological economics** led to the integration of their principles into economic policies, resulting in the formation of the concept of **“green economy”**. This term was first used in 1989 by leading economists for the UK government in their **“Plan for the Development of the Green Economy”** (2023).

Unlike environmental economics or ecological economics, **“green economy”** is more practical in nature. **“Green economy”** is not a scientific field, but rather an area of real economic policy with concrete activities in sectors such as energy, innovation, agriculture, and others. This difference can be seen in how the term **“green economy”** is expressed using the word **“economy”** (referring to real economic activities) rather than **“economics”** (referring to environmental economics, ecological economics, or other economic disciplines).

Research Methodology. This article evaluates the outcomes of managing “green economy” processes at the economic level. It examines the interconnection between economic activities and the environment. The study investigates methods for managing economic systems that aim to minimize environmental damage in the long term, while incorporating ecological and social factors.

Environmental Economics and Green Financing. In the transition to a green economy, green financing plays a pivotal role. In 2023, Uzbekistan issued sovereign international green bonds worth 4.25 trillion Uzbek UZS on the London Stock Exchange, directing the funds towards financing ecological projects.

Furthermore, the World Bank and the European Bank for Reconstruction and Development (EBRD) allocated a total of 56.45 million USD to Uzbekistan to support the development of its green economy. These funds are intended for the installation of solar panels, construction of wind power plants, and the development of an ecological transport system. Additionally, green loans and sustainable investments are increasing the interest of large companies in the development of ecological projects and technologies. Specifically, international banks are planning to allocate 10 million euros in grant funding to promote the growth of the green economy in Uzbekistan.

Analysis and Discussion of Results. With the support of the United Nations Development Program (UNDP), Uzbekistan is in the process of developing and implementing

the Climate Budgeting Marking (CBM) model. The CBM involves identifying specific budget items based on their relevance to climate change and subsequently publishing the results. It is expected that the CBM will encourage policymakers to consider climate change issues more in their budgeting decisions; help track progress in the implementation of climate change strategies; and improve communication with stakeholders regarding government activities related to climate change. Over time, these benefits will enable the country to access additional resources for climate-related financing and enhance effective programming.

This aligns with the results of the 2022 State Expenditure and Institutional Analysis on Climate Change (CPEIR) conducted in Uzbekistan. Table 1 presents the results of the CPEIR analysis, showing that nearly 11% of the state budget is intended to support climate change outcomes, with a large portion related to climate change adaptation. Additionally, the analysis identified “negative” expenditures (costs that harm climate change outcomes), which constitute less than 0.5% of the state budget.

In 2022, more than 10% of the Republic of Uzbekistan's State Budget was evaluated as directed towards positively supporting the final outcomes of climate-related activities (Table 1).

2022	Total “Positive” Climate Change-related Expenditures	“Positive” Expenditures related to Climate Mitigation	“Positive” Expenditures related to Climate Adaptation	Negative Expenditures related to Climate Change (all related to mitigation)
Billion Uzbek UZS	26,302.4	612.7	25,414.8	1,006.0
Percentage of State Budget	11.1%	0.3%	10.7%	0.4%

Source: National Information Report on Climate Change Financing, Capacity Building, and Technology Transfer by the International Community.

However, the government of Uzbekistan views a number of other ecological (or green) issues as an integral part of the Sustainable Development Goals (SDGs), in addition to climate change. While addressing climate change remains a key task, there are also several highly prioritized environmental issues that can either mitigate or complicate decisions related to state expenditure. For instance, within the scope of scientific research, 9 planetary boundaries have been defined: these include changes in freshwater availability, ozone layer depletion, atmospheric aerosol loading, ocean acidification, emerging substances (such as plastics), changes in the Earth system, biosphere integrity, and climate change.

Uzbekistan plans to expand the IBM approach to account for how its budget addresses environmental issues that are not related to climate change. As a result of several projects related to climate financing and the transition to a green economy, international organizations' funding is being mobilized in 2023.

For example, on May 17, 2023, during the 32nd Annual Meeting of the Board of Governors of the European Bank for Reconstruction and Development (EBRD) held in Samarkand, a memorandum of understanding was signed between the Ministry of Economy and Finance, the European Union, and the French Development Agency regarding the allocation of €10.2 million in technical assistance funds for “green” economy cooperation in Uzbekistan.

On August 8, 2023, the President of the Republic of Uzbekistan approved a decree (PQ-271) for the implementation of the “Innovative Carbon Resources for Energy Sector Reforms” project, in partnership with the World Bank. The decree sets out the tasks for Uzbekistan

transition to a “green” economy and the achievement of “green” growth by 2030, and to ensure the low-carbon development of the national economy, particularly the industry sector. The World Bank has agreed to allocate \$46.25 million to implement the “Innovative Carbon Resources for Energy Sector Reforms” (iCRAFT) project. The project consists of a \$20 million “Emission Reduction Purchase Agreement” component and a \$25 million “Adaptation Purchase Agreement” component. The funds allocated under this project are intended for the following areas (Table 2).

Main Areas	<i>Estimated Amount of Financing (million USD)*</i>
Component 1: Emission Reduction Purchase	
1.1 Subcomponent: Development of the Monitoring, Reporting, and Verification (MRV) system based on UNFCCC requirements	
Greenhouse Gas Inventory (a systematized database describing greenhouse gas emissions and sequestration based on official statistical data)	6.00
Greenhouse Gas Registry (information system containing reports on greenhouse gas emissions)	
Carbon Units Registry (information system for registering "green" projects, tracking carbon units and related operations)	
Data and Information Center	
1.2 Subcomponent: Strengthening the capacity of the following ministries and agencies for "Green" Growth and Carbon Trading: of Ministry Economy and Finance, Ministry of Energy, Ministry of Investments, Industry and Trade, Strategic Reforms Agency, Hydrometeorological Service Agency	2.00
1.3 Subcomponent: Establishment of the Project Implementation Group under the Ministry of Economy and Finance in accordance with Article 6 of the Paris Agreement (covering greenhouse gas emission trading, project review, MRV, iCRAFT project coordination, monitoring, etc.)	7.00
Preparation of National Legislative Framework	
Preparation of the Regulations for the Project Implementation Group (center)	
Preparation of National Rules for Project Review based on UNFCCC requirements	
Financing until the first carbon sale in international markets (salaries, equipment)	
Launch of a Unified Electronic Platform for "Green Energy" Certificates	
Component 2: Purchase of Climate Change Mitigation Results	
2.1 Subcomponent: Energy Tariff (Subsidy) Reforms and Related Awareness Campaigns	2.00
Effective tariff policy, price formation, and implementation	
Development of awareness campaigns	
2.2 Subcomponent: Social Protection for Vulnerable Households in Energy Tariff Reforms (Strengthening the social security network, social registers, etc.)	5.00
2.3 Subcomponent: Use of Renewable Energy Sources (installing solar panels, solar water heaters in households, etc.) and implementing energy efficiency measures (heat pumps, solar water heaters, cooling systems, etc.) through development and pilot projects	5.00
Source: National Information Report on Climate Change Financing, Capacity Building, and Technology Transfer by the International Community.	

In addition, on December 3, 2023, during the COP28 UN Climate Change Conference in Dubai, a meeting was held between the Uzbekistan Ministry of Economy and Finance and the German International Cooperation Society (GIZ). The parties signed an agreement for a €9 million grant project titled “Advisory Support for Private Sector Development and Green Industrialization in Uzbekistan”.

The Presidential Decree PQ-436 (December 2, 2022) also focuses on strengthening institutional capacity for green growth planning and implementation, through seminars and training for national and regional authorities on sustainable development management.

Green Technologies and Innovations. In modern green economies, innovative technologies play a key role. For example, smart grids help optimize energy consumption and reduce waste. These systems are based on Artificial Intelligence (AI) and Internet of Things (IoT) technologies, enabling real-time management of electrical energy. Such grids are being implemented in major cities in China and the United States. Additionally, solar panels and wind power plants play a crucial role in green energy production. In Uzbekistan, large solar power plants were launched in Samarkand, Jizzakh, and Navoi regions in 2023. All these efforts contribute to the country's goal of achieving carbon neutrality by 2030.

Another project, implemented with the support of the UN Development Program, developed the “Green Budgeting Marking (GBM) Methodology and Roadmap” for Uzbekistan. The main activities of the project include:

- Ensuring the state budget process effectively supports the implementation of Sustainable Development Goals (SDGs).

- Developing and implementing the “Climate Budgeting Marking” model in Uzbekistan.

- **Table of Funds Marked by Sector for “Green” Budgeting, Forecast for 2024, trillion UZS (Table 3)**

Category	Forecast	Positive	Negative	No Impact
Total Expenditures	312.8	34.2	0.9	277.7
Percentage of Total Expenditures	100.0	10.9	0.3	88.8
1. Social Expenditures	151.4	0.7		150.7
2. Economic Expenditures	36.8	20.2	0.9	15.8
3. Investment Expenditures	31.7	12.1		19.7
4. Expenditures for State Administration, Justice, Prosecutors Office, Judiciary, and Local Self-Government	19.8	1.0		18.8
5. Reserves for the Cabinet of Ministers, Republic of Karakalpakstan, Regions, Cities, and Districts	2.1			2.1
6. Expenditures for Servicing and Repaying State Debt	16.4			16.4
7. Expenditures Related to Increases in Salaries, Pensions, Scholarships, and Tariffs for Certain Services	9.6			9.6
8. Other Expenditures	44.9	0.2		44.7

Source: National Information Report on Climate Change Financing, Capacity Building, and Technology Transfer by the International Community.

Uzbekistan, for the first time, placed “green” sovereign international bonds worth 4.25 trillion UZS and international bonds worth 660 million USD on the London Stock Exchange.

The funds raised from these “green” bonds will be directed toward financing green projects such as implementing water-saving technologies, developing rail and metro transport, organizing sanitation and waste management, establishing windbreaks against wind erosion, and preventing sand encroachment on water management infrastructure in populated areas. Furthermore, in collaboration with the UN Development Programme, efforts will be made to ensure transparency in the monitoring of projects, providing investors and the general public with all necessary information about the impact of these investments on Uzbekistan’s “green” and sustainable development goals.

Conclusion and Recommendations.

The green economy is a global necessity. Uzbekistan’s transition to a green economy not only enhances the nation’s international reputation but also contributes significantly to the health, prosperity, and longevity of its population.

From the analysis presented above, it becomes clear that the development of a green economy in Uzbekistan requires addressing several key challenges and priorities: The main challenge in the successful implementation of the green economy concept lies in simplifying it as green growth, directing additional investments toward energy and resource-efficient technologies and the development of alternative energy sources.

- The complexity of scientifically substantiating the necessity of transitioning to a green economy, combined with the high degree of uncertainty in forecasting environmental problems, leads to difficulties in explaining the concept in a clear and simple way. For example, there is no unified agreement on the reduction of greenhouse gas emissions in terms of both timing and level, while the volume of emissions continues to rise.

- The green economy cannot replace sustainable development but serves as a criterion for achieving sustainable development.

- Sustainable development requires the integrated and interconnected development of economic, social, and environmental components.

- The process of transitioning to a green economy is of particular significance for each country and is directly linked to characteristics such as natural capital, human capital, and the country's level of economic development.

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