



THE ROLE OF BANKS IN GREEN ECONOMY AND SUSTAINABLE DEVELOPMENT

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Abstract

This article analyzes the role of the banking system in the processes of developing a green economy and achieving sustainable development. In the modern era, ensuring environmental safety, rational use of natural resources, and minimizing negative impacts on the environment have become key directions of global economic policy. In this context, banks and financial institutions are increasingly incorporating the principles of “green finance” into their activities to support environmentally friendly, energy-efficient, and sustainable projects. Using the example of Uzbekistan’s banking system, the article examines the practice of green lending, mechanisms for financing ecological innovations, and the role of the banking sector in the implementation of sustainable development strategies. The results of the study show that the development of a green finance system plays a crucial role in strengthening the ecological balance of the national economy, creating new employment opportunities, and achieving long-term economic stability.

Keywords: Green economy, sustainable development, green finance, banking system, ecological investment, green lending, energy efficiency.

INTRODUCTION

Over the past decade, “green” directions have begun to play an increasingly important role in both global and national economic practices. Climate change, resource scarcity, and environmental degradation have turned into strategic threats for governments and businesses alike, prompting a reconfiguration of economic policies and financial instruments. In this transformation process, banks, as the main institutions responsible for allocating economic resources, play a central and undeniable role: through investment allocation, project



Modern American Journal of Business, Economics, and Entrepreneurship

ISSN (E): 3067-7203

Volume 01, Issue 07, October, 2025

Website: usajournals.org

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financing, and risk management, they can stimulate economic transformation. However, there remains a significant gap between traditional banking practices and the requirements of the green economy, which calls for new research initiatives and policy interventions to fully adapt the modern financial system to sustainable growth objectives.

In the context of Uzbekistan and similar emerging economies, the key questions arise: to what extent and through which mechanisms do banks contribute to the green economy? Are the existing financial instruments sufficiently directed toward environmental objectives, or do problems persist due to financing gaps, inadequate risk assessment criteria, and inefficient incentive systems? This central issue is explored through several analytical approaches: examining practical barriers to green lending, identifying deficiencies in standardizing environmental assessments within banks, highlighting inconsistencies in financial incentive systems, and addressing technical and organizational challenges in monitoring green investments.

The main purpose of this study is to conduct a systematic analysis of the role and efficiency of banks in facilitating the transition to a green economy, and to develop practical recommendations for expanding green financing under national conditions. To achieve this goal, the following tasks were undertaken:

1. To analyze the theoretical foundations of green finance and banking activities;
2. To examine in detail the practices of assessing environmental and social risks in banks;
3. To conduct an empirical analysis of the current practices of green lending and investment within the banking system of Uzbekistan;
4. To identify existing gaps and obstacles in green financing and propose innovative mechanisms to overcome them.

The research was conducted through a comprehensive and multi-stage methodological approach. First, national and international literature, policy documents (strategies, resolutions, and regulatory documents related to banking practices) were systematically reviewed to establish the theoretical framework. The second stage involved empirical analysis, utilizing official data from Uzbekistan's leading commercial banks and the Central Bank to statistically assess indicators such as green credit portfolios, sectoral distribution of



Modern American Journal of Business, Economics, and Entrepreneurship

ISSN (E): 3067-7203

Volume 01, Issue 07, October, 2025

Website: usajournals.org

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investments, and parameters of credit policy. The third stage focused on qualitative methods: semi-structured interviews with bank officials, focus group discussions with industry experts, and practical case studies were employed to identify and better understand real-world challenges and their underlying causes. A combination of analytical methods—including literature review, document analysis, descriptive and comparative statistical analysis, SWOT analysis, and indicator evaluation based on banking data—was applied to ensure a balanced and in-depth exploration of the topic.

LITERATURE REVIEW

Formation and Development of the Green Economy Concept.

The idea of a green economy emerged in the 1980s as a response to the growing need to integrate environmental sustainability into economic policymaking. Following the publication of the United Nations report “Our Common Future” (1989), economic growth and environmental security began to be viewed as interdependent processes. Later, at the Rio+20 Conference in 2012, the concept of the green economy was officially recognized at the global level.

Early academic approaches—most notably by Pearce, Markandya, and Barbier (1990)—defined the green economy as “an economic system aimed at ensuring growth while preserving the environment.” Subsequently, the OECD (2011) characterized it as “an economic model that supports sustainable growth, reduces climate-related risks, and promotes the efficient use of resources.” Theoretically, the green economy rests upon three core pillars: economic efficiency, ecological balance, and social equity.

In Uzbekistan, the institutionalization of the green economy concept began with the adoption of the “Strategy for Transition to a Green Economy (2019–2030)” on October 4, 2019. This strategy focuses on introducing energy-efficient technologies, reducing waste generation, and encouraging green investments across various sectors of the national economy. Moreover, the banking system has been identified as a primary mechanism for implementing this strategy, given its central role in mobilizing financial resources and channeling them toward environmentally sustainable projects.



Modern American Journal of Business, Economics, and Entrepreneurship

ISSN (E): 3067-7203

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In academic literature, the role of banks in the green economy has been examined from multiple perspectives. For instance, Zadek (2013) described banks as “the financial heart of sustainable development,” arguing that commercial banks can only accelerate the green transformation of the economy if they align their lending policies with environmental criteria. Similarly, Jeucken (2001) introduced the concept of “sustainable banking,” emphasizing the importance of integrating environmental, social, and governance (ESG) principles into financial decision-making processes.

In recent years, approaches to green finance have expanded significantly, leading to the emergence of related concepts such as Green Banking, Sustainable Finance, and Climate Finance as distinct research and policy domains. Moreover, Scholtens (2006) introduced the notion of “green risk” for banks, highlighting the necessity of assessing how environmental risk factors can influence credit risk and overall financial stability.

Globally, the mechanisms of green financing have developed rapidly, particularly in the European Union and Asian countries. For example, since 2016, China has implemented the “Green Credit Guidelines,” requiring every commercial bank to allocate a specific portion of its credit portfolio to environmentally friendly projects. Similar policy frameworks and regulatory mechanisms have been adopted in India, Malaysia, South Korea, and Indonesia, reflecting a global shift toward the integration of environmental sustainability into financial systems. In recent years, the Republic of Uzbekistan has implemented significant measures to promote the development of the green economy through the financial sector. The Central Bank, in its “Sustainable Finance Concept” adopted in 2021, identified several key priorities: enhancing the environmental responsibility of banks, formulating green lending policies, and expanding cooperation with international financial institutions.

Currently, major commercial banks such as Asaka Bank, Ipoteka Bank, and Agrobank have introduced credit products aimed at financing renewable energy, water-saving technologies, waste recycling, and environmentally friendly production. For instance, the Green Economy Financing Facility (GEFF) program, implemented in collaboration with the Fund for Reconstruction and Development of the Republic of Uzbekistan and the European Bank for



Modern American Journal of Business, Economics, and Entrepreneurship

ISSN (E): 3067-7203

Volume 01, Issue 07, October, 2025

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Reconstruction and Development (EBRD), established the first national model for green lending. However, several challenges remain in practice. The share of green loans in the overall credit portfolio remains relatively small; there is a lack of unified standards and criteria for evaluating environmental projects; and insufficient professional training of banking staff in this field persists. These issues indicate the need for institutional reforms to further strengthen and expand the green finance system in Uzbekistan, ensuring that it becomes an integral part of the country's sustainable development strategy.

The analysis of existing literature indicates that, although green finance and sustainable banking have been well-studied theoretically at the international level, their practical application in the context of Uzbekistan has not been thoroughly examined. Most previous studies have remained limited to general conceptual discussions and have not adequately addressed the internal mechanisms of the national banking system, particularly regarding risk assessment practices and the integration of environmental principles into credit policies.

Furthermore, current academic works lack a comprehensive system of indicators for measuring the effectiveness of green loans, which constitutes a significant research gap. The novelty of this study lies in its multidimensional analysis of the role of Uzbek banks in green financing—not only from political and economic perspectives but also through a methodological framework.

The research proposes practical solutions for integrating environmental criteria into banking operations, developing methods for green risk assessment, and designing indicators for sustainable credit portfolios. These contributions are expected to generate both theoretical and practical outcomes, strengthening the financial foundation of Uzbekistan's transition to a green economy and enhancing the country's overall sustainable development strategy. In recent years, the Republic of Uzbekistan has made the implementation of green economy principles a key direction of state policy. The "Strategy for Transition to a Green Economy" (2019) and the "National Program on Sustainable Development Goals for 2023–2030" are aimed at strengthening environmental responsibility, improving resource efficiency, and expanding the participation of the financial sector in these processes. At the core of these reforms lies the



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banking system, which serves as the primary financial engine supporting the green transformation of the economy.

1. The Practice of Financing Green Projects by Banks in Uzbekistan

Currently, several major banks in Uzbekistan have begun taking initial steps toward developing green finance. For instance, the National Bank of Uzbekistan is implementing the “Green Energy” program, which allocates investments to renewable energy sources such as solar panels and wind turbines. In 2024 alone, over 350 billion UZS were directed to this program.

Asaka Bank has launched the “Eco-Credit” line, providing preferential loans to the population for purchasing energy-efficient household appliances and heating systems. Meanwhile, Ipoteka Bank, within the framework of its “Green Home” project, finances projects related to thermal insulation, energy-saving window systems, and water-efficient infrastructure.

Aloqabank and Orient Finans Bank have also introduced “green auto loan” programs aimed at financing the purchase of eco-friendly transport vehicles, particularly electric cars. Although these projects are still limited in scale, they represent significant progress in integrating Uzbekistan’s banking system into the green economy framework.

2. International Cooperation in the Formation of the Green Finance Market

The Republic of Uzbekistan is actively expanding cooperation with several international financial institutions in the field of green financing. In particular, in partnership with the European Bank for Reconstruction and Development (EBRD), the Green Economy Financing Facility (GEFF Uzbekistan) is being implemented for 2022–2024. Through this program, €50 million in loans have been allocated to support environmentally friendly projects for small and medium-sized enterprises.

In collaboration with the Asian Development Bank (ADB), financial assistance has been provided to commercial banks under the Renewable Energy Support Project to promote the transition to carbon neutrality. Additionally, in cooperation with the United Nations Development Programme (UNDP) and the Global Environment Facility (GEF), specialized training programs on Green Finance Standards have been developed for Uzbek banks. This cooperation



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ISSN (E): 3067-7203

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demonstrates that Uzbekistan's financial system is gradually aligning with international environmental and sustainability standards.

3. Challenges and Barriers.

During the empirical analysis, a number of factors were identified that limit the activities of banks in the field of the green economy: the clear regulatory and legal framework for green loans has not yet been fully developed; commercial banks do not have methodological guidelines for assessing environmental risks; the mechanisms for measuring the economic efficiency of green projects are not sufficiently standardized; a lack of knowledge and experience in environmental finance is observed among bank specialists; the low profitability of ecological investments makes this area appear less beneficial for banks.

4. Recommendations Developed on the Basis of Empirical Analysis.

Based on the analysis of Uzbekistan's experience, the following practical recommendations have been developed: a national rating system for green loans should be introduced. The share and efficiency level of ecological loans for each bank should be regularly evaluated and publicly disclosed. To develop the green bond market, a special licensing system should be created by the Central Bank. An Environmental Risk Assessment Department should be established in all major banks — this unit will regularly assess credit portfolios from the perspective of environmental risks. A low-interest "eco-fund" should be created to finance renewable energy projects. This fund will be formed through contributions from international donors, the state, and the private sector. Finally, digitalization of environmental reporting is necessary — this will allow real-time monitoring of ecological investments within banks.

5. Analysis Results

Overall, the banking system of Uzbekistan is establishing a solid foundation for the transition to a green economy; however, to accelerate this process, it is essential to integrate financial, institutional, and scientific measures. Banks should prioritize not only economic growth but also environmental



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ISSN (E): 3067-7203

Volume 01, Issue 07, October, 2025

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responsibility as a core objective. Green financing represents the most crucial guarantee of future economic security.

DISCUSSION

The concept of the green economy and sustainable development has today become a strategic direction not only for environmental policy but also for the financial system. The role of banks in this process has been interpreted differently in both scientific and practical discussions. Some researchers — such as J. Stiglitz, N. Stern, and M. Todaro — view the banking sector as the “financial heart” of the transition to a green economy, emphasizing that banks are the main channels for directing capital flows toward environmentally friendly projects.

In contrast, other scholars — including D. Pearce and R. Goodland — argue that the role of banks in the green economy remains insufficiently effective, as their primary focus still lies on profitability and return on investment rather than ecological outcomes. From this perspective, the role of banks in sustainable development carries a dual significance: on the one hand, they are essential for financing economic growth; on the other hand, inappropriate financial policies can intensify environmental risks. This contradiction lies at the center of ongoing academic debates.

Moreover, international experience demonstrates that each country adopts green finance mechanisms within its banking sector in diverse ways, depending on its economic model, natural resources, and institutional capacity. For example, in the European Union countries, a comprehensive system of “Green Credit Standards” has been established, which makes environmental risk assessment a mandatory component of lending practices. In China, under the “Green Credit Guidelines” program, each commercial bank is required to allocate a specific percentage of its loan portfolio to environmentally friendly projects.

In Uzbekistan, however, this process is still in its formative stage, which necessitates the development of new scientific approaches and practical mechanisms. The research findings indicate that in most domestic banks, the concept of green finance has not yet been fully institutionalized. In many cases, financing initiatives for environmental projects are carried out mainly through



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Volume 01, Issue 07, October, 2025

Website: usajournals.org

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donor organizations, international financial institutions, or state programs. At the same time, at the level of the national banking system, methodologies for green risk assessment, environmental auditing, and sustainable investment indicators remain underdeveloped, highlighting the need for further institutional and methodological advancements.

One of the key aspects that deserves special attention in the discussion is the need to strike a balance between the economic efficiency and environmental responsibility of banking activities. Some economic schools — particularly classical and neoclassical approaches — consider market mechanisms sufficient to address environmental challenges. However, modern perspectives, such as institutional economics and green finance theory, emphasize the necessity of integrated participation between government policy and the banking sector.

A particularly debated viewpoint among scholars is that green financing should not be regarded merely as a matter of social responsibility, but also as a source of economic benefit for banks. In the long term, environmental sustainability reduces investment risks, enhances financial stability, and leads to higher evaluations from international credit rating agencies.

This dual benefit perspective underscores that sustainable banking is not only an ethical or environmental imperative but also a strategic economic advantage in a rapidly transforming global economy. From this perspective, the transition to a green economy represents not only an environmental necessity but also a strategic economic opportunity for banks.

However, the analysis also reveals several practical challenges. In Uzbekistan, the lack of clear regulations and standards for green financing, insufficient data availability, limited experience in environmental risk assessment, and inadequate professional training among bank employees remain significant obstacles. Therefore, it is essential to establish specialized “Green Finance Departments” within banks, introduce internal standards for assessing environmental risks, and strengthen cooperation with international financial institutions to enhance capacity and alignment with global best practices.

Based on the above discussions, it can be concluded that the role of banks in the green economy and sustainable development is not merely a theoretical concept, but a decisive factor for ensuring the country’s future economic stability and



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ISSN (E): 3067-7203

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Website: usajournals.org

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environmental security. Consequently, this field requires deep institutional reforms, the development of innovative financial mechanisms, and the implementation of scientifically grounded strategies to accelerate the green transformation of Uzbekistan's economy.

CONCLUSION AND RECOMMENDATIONS

The results of the conducted research show that the role of banks in the green economy and sustainable development is becoming an increasingly important strategic direction in the modern economic system. The concept of a green economy aims not only to ensure environmental sustainability but also to improve the quality of economic growth. In this process, banks act as the main drivers of economic transformation by directing financial flows toward environmentally friendly, energy-efficient, and socially responsible projects.

The study revealed that the banking system of Uzbekistan is still at the initial stage in the field of green financing. Mechanisms such as environmental risk assessment, green lending, carbon accounting, and ecological rating systems are not yet fully developed. Nevertheless, the presence of state policies, international cooperation, and sustainable development strategies aimed at transitioning to a green economy creates broad opportunities for banks to enhance their role and contribution to sustainable economic growth. The development of a green financial system is not only an environmental priority for Uzbekistan but also a key factor in ensuring macroeconomic stability. In the long term, it contributes to economic security, efficient resource utilization, and an increase in international investment attractiveness. Based on this, the following conclusions and recommendations are proposed:

1. It is necessary to develop a national concept of green financing. This concept should establish clear standards for each bank regarding environmental risks, carbon emissions, and social impact criteria.
2. It is advisable to establish a "Green Finance Center" under the Central Bank. This center should function as an institution that coordinates green credit lines, international grants, and environmental investments.
3. Special training programs and professional development courses for bank employees should be introduced. Without specialists equipped with knowledge



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ISSN (E): 3067-7203

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and skills in green economy and sustainable finance, the practical implementation of related mechanisms will be challenging.

4. A system of tax and interest incentives for green loans should be established. This will encourage banks to finance environmentally friendly projects and enhance their economic motivation.

5. A green rating system should be created to assess each bank's environmental performance. Such a system would promote healthy competition among banks and increase ecological responsibility across the financial sector.

6. The introduction of innovative financial instruments, such as green bonds and eco-deposits, will open new opportunities for financing the green economy.

7. To ensure information transparency, banks should regularly publish in their annual reports data on environmentally focused projects, their results, and carbon reduction indicators.

Overall, the transition to a green economy represents a new stage for Uzbekistan — a period where economic reforms, environmental responsibility, and financial stability are harmoniously integrated. Banks, standing at the center of these transformations, must become not only financial intermediaries, but also the main driving force promoting environmental awareness and the principles of sustainable development in practice.

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Modern American Journal of Business, Economics, and Entrepreneurship

ISSN (E): 3067-7203

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