ISSN 2181-9408

Scientific and technical journal



Sustainable Agriculture



№4(24).2024







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Our address: 39, Kari-Niyaziy str., Tashkent 100000 Uzbekistan , www.sa.tiiame.uz, www.susagr.uz

The journal "Sustainable Agriculture" is registered in the Press Agency of Uzbekistan on the 12th of February in 2018 (license № 0957).

In 2019, the journal is included in the list of recommended scientific publications by the Higher Attestation Commission of the Republic of Uzbekistan.

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ISLAMIC FINANCE AND DIGITAL ECONOMY: NEW HORIZONS FOR SUSTAINABLE AGRICULTURAL DEVELOPMENT

Sh.Mirzaev - Associate Professor, «Tashkent Institute of Irrigation and Agricultural Mechanization Engineers» National Research University

F.T.Egamberdiyev - Doctor of economic sciences, professor, Alfraganus University

Abstract

The article explores the potential for integrating Islamic financial instruments and digital technologies in the agricultural sector of Uzbekistan. In the context of growing interest in Islamic finance among the population and banks, as well as the need to improve the sustainability of agriculture, this study focuses on the opportunities that open up for agribusiness through the use of modern financial technologies. The article examines the core principles of Islamic finance, such as the absence of riba (interest) and an emphasis on ethical investment, and their application in the context of digitalization. It analyzes the existing barriers to the development of Islamic finance in Uzbekistan, including the lack of a regulatory framework and low levels of financial literacy among the population.

Particular attention is paid to successful examples of the application of digital technologies in the agricultural sector, such as the use of blockchain technologies to increase the transparency of supply chains and the introduction of platforms for crowdfunding agricultural projects. The article emphasizes the importance of creating a favorable regulatory environment to support Islamic financial institutions and digital startups.

In conclusion, the study offers recommendations for the integration of Islamic finance and digital technologies in the agriculture of Uzbekistan, emphasizing their role in ensuring food security and sustainable development of the country's economy.

Keywords: *Environmental Sustainability, Digitalization of Agribusiness, Food Security, Innovations in Finance, Islamic Finance Market.*

Introduction. In recent years, Uzbekistan has been faced with the need to modernize its agricultural sector and increase the resilience of agriculture in the face of global challenges such as climate change and food security. In this context, Islamic finance and the digital economy represent key tools that can significantly improve financial inclusion and efficiency of agribusiness. Islamic finance, based on Sharia principles, offers alternative financing models that exclude riba (interest) and focus on ethical investments. This makes it particularly attractive to a large part of the Uzbek population, which avoids traditional credit systems for religious reasons.

Digitalization, in turn, opens up new horizons for the agricultural sector, allowing the introduction of modern technologies such as blockchain and the Internet of Things (IoT) to optimize resource management processes and increase supply chain transparency. Research shows that about 15-20% of Uzbeks do not use traditional loans due to religious considerations, which highlights the importance of developing Islamic financial instruments adapted to the needs of the local population.

This article aims to analyze the possibilities of integrating Islamic finance and digital technologies into agriculture in Uzbekistan. We will review the current state of Islamic finance in the country, identify existing barriers and offer recommendations for overcoming them. As a result, we hope to demonstrate how the synergy between Islamic finance and the digital economy can contribute to sustainable agricultural development in Uzbekistan, ensuring food security and economic stability.

Materials and Methods. Materials and Methods of the article "Islamic Finance and the Digital Economy: New Horizons for Sustainable Agricultural Development in Uzbekistan"

Materials. Literature on Islamic finance: Research and articles on the fundamentals of Islamic finance, including Sharia principles such as the prohibition of riba (interest) and an emphasis on ethical investment. This includes works describing existing Islamic financial instruments and their application in various sectors of the economy.

Statistics: Data on the population of Islam in Uzbekistan and the level of use of traditional credit services. According to research, about 15-20% of Uzbeks do not use loans for religious reasons, highlighting the need for Islamic financial products. Case studies: Examples of successful application of Islamic finance in the agricultural sector in other countries, as well as potential projects in Uzbekistan. This may include case studies of the introduction of digital technologies in agriculture.

Documents and reports: Official documents, such as Uzbek government decrees on the establishment of Islamic banking and finance infrastructure. Reports from international organizations, such as the Islamic Development Bank (IDB), on the state and prospects of Islamic finance will also be used..

Results: The study identified key aspects and statistics that support the potential of Islamic finance and the digital economy for sustainable agricultural development in Uzbekistan.

Interest in Islamic finance: About 15-20% of Uzbeks do not use traditional loans for religious reasons, which creates a significant market for Islamic financial products. According to a recent study, 75% of citizens and 61% of entrepreneurs expressed their willingness to use Islamic financial services if they were available on the market.

Growth prospects: Islamic banking has the potential to attract up to $10 billion annually to the economy of Uzbekistan. This opens up new horizons for financing the agricultural sector, which needs investment to improve productivity and sustainability.

Challenges and barriers: The main obstacles to the development of Islamic finance in Uzbekistan are insufficient financial literacy of the population, a lack of professional expertise, and the absence of necessary IT tools and regulatory mechanisms.

This indicates the need for educational programs and raising awareness of the principles of Islamic finance. Bank readiness: Most commercial banks in Uzbekistan expressed

their readiness to implement Islamic finance upon creation of the necessary regulatory and technological platforms. However, they also noted the lack of experience among specialists, which requires additional efforts to train personnel.

The role of the digital economy: Digitalization of the agricultural sector through the use of technologies such as block-chain and the Internet of Things (IoT) can significantly improve the efficiency of resource management and the transparency of supply chains. This creates synergies with Islamic finance, offering new investment opportunities.

International cooperation: Uzbekistan's participation in the global Islamic financial community opens up new horizons for cooperation and investment, which helps strengthen the country's position in the international arena. The signing of memorandums of cooperation with the Islamic Development Bank also indicates a growing interest in the development of Islamic finance in the country.

The results obtained highlight the importance of integrating Islamic finance and digital technologies as a key factor in achieving sustainable agricultural development in Uzbekistan. Given the growing interest in these instruments, it is necessary to continue working on creating an appropriate regulatory framework, educational initiatives and platforms for the introduction of Islamic financial services.

Table 1:

Integration of Islamic Finance and Digital Technologies as a Key Factor for Achieving Sustainable Agricultural Development in Uzbekistan.

Indicator	Value/Description
Percentage of Muslims in Uzbekistan's Population	Approximately 94% of the population (around 34 million people) are Muslims, creating a demand for Islamic financial services.
Number of Banks Offering Islamic Financial Services	12 banks, including "Agrobank," "Uzpromstroybank," and "Microcreditbank," provide Murabaha services.
Volume of Islamic Financial Assets	Estimated at approximately 92.2 billion UZS (around 21.7 million USD) as of early 2021.
Expected Sukuk Issuance Volume	Planned issuance of state and corporate Sukuk may reach 4-5 billion USD.
Level of Financial Literacy Among the Population	Low level; many citizens are unfamiliar with the principles of Islamic finance.
Investment from the Islamic Development Bank	The Islamic Development Bank allocated $200 million for agricultural development in Uzbekistan.
Expected Date for Submission of Islamic Finance Legislation to Parliament	2024 is anticipated for the completion and submission of the draft law on Islamic finance.
Percentage of Farmers Interested in Islamic Financing	High interest among farmers in rural areas for Islamic financing services to develop agribusiness.
Digital Transformation Initiatives	Launch of projects by FAO and the Ministry of Agriculture aimed at digital transformation in agriculture.
Number of Workshops on Digitalization and Innovation	Multiple workshops conducted to assess the current state of digitalization in agriculture (e.g., FAO seminar).
Expected Impact on Agricultural Productivity	Digital innovations expected to enhance productivity and sustainability in agri-food systems.

Table 1 illustrates key indicators and statistics related to the integration of Islamic finance and digital technologies in Uzbekistan, with a focus on their impact on sustainable agricultural development. The statistics are based on data from various sources, including reports from the Central Bank of Uzbekistan, the Islamic Development Bank, and initiatives from international organizations such as FAO.

This table can be used to analyze the current state of integration of Islamic finance with digital technologies in Uzbekistan and their role in sustainable agricultural development.

Discussion. The article "Islamic Finance and the Digital Economy: New Horizons for Sustainable Development of Agriculture in Uzbekistan" examines key aspects of integrating Islamic finance and digital technologies into the country's agricultural sector. Islamic finance represents a unique alternative to traditional financial instruments, which is especially relevant for Uzbekistan, where about 94% of the population is Muslim. However, despite the high interest in Islamic finance, there are a number of barriers to its widespread adoption.

According to research, about 15-20% of Uzbeks do not use traditional credit services for religious reasons. This creates a significant market for Islamic financial products, especially in the agricultural sector, where farmers often face difficulties in obtaining financing. Survey results show that 75% of citizens and 61% of entrepreneurs are willing to use Islamic financial services if they are available on the market. [1,2] This confirms the growing interest in Islamic finance as a way to address access to finance issues. However, the main barriers to the development of Islamic finance in Uzbekistan remain the lack of financial literacy of the population and the lack of professional expertise. According to experts, the lack of necessary IT tools and regulatory mechanisms also complicates the implementation of Islamic banking in the country. For example, at the international PLUS-Forum Digital Uzbekistan, the problems and opportunities of Islamic finance were discussed, where experts noted the need to create an appropriate infrastructure for the successful functioning of Islamic financial institutions.

In addition, it is important to note that Islamic banking can attract up to $ 10 billion annually to the economy of Uzbekistan. [1] This opens up new horizons for investing in agriculture, which needs significant investment to increase its productivity and sustainability. Islamic financial instruments can become an important source of financing for small and medium-sized farms, which are often left outside the traditional banking system.

Digitalization of the agricultural sector through the use of technologies such as blockchain and the Internet of Things (IoT) can significantly improve the efficiency of resource management and the transparency of supply chains. This creates synergies with Islamic finance, offering new opportunities for investment and improved market access.

Modeling the economic effects of using digital technologies in combination with Islamic finance for agriculture Uzbekistan, a critical sector of the economy, faces many challenges, including the need to improve productivity, climate resilience and access to finance. The introduction of Islamic financial instruments and digital technologies can be a key factor in addressing these issues. Islamic finance, based on Sharia principles, offers alternative financing models that exclude riba (interest) and focus on ethical investments. When combined with digital technologies such as blockchain and the Internet of Things (IoT), this can lead to significant improvements in the productivity and sustainability of the agricultural sector.

The objective of this modeling is to assess the potential economic effects of introducing Islamic financial instruments and digital technologies in agriculture in Uzbekistan. Key objectives include:

1. Assessing the impact on access to finance for farmers.
2. Analyzing increases in productivity and efficiency of agribusiness.
3. Forecasting long-term economic benefits for the sector.

Methodology. Data Analysis: Collecting statistical data on the current state of agriculture in Uzbekistan, including production volumes and levels of financing.

Using data on the growing interest in Islamic finance among the population: 75% of citizens and 61% of entrepreneurs are ready to use Islamic financial services. [2]. Econometric Modeling: Using regression analysis to assess the impact of Islamic finance on credit availability and productivity in the agricultural sector and Using general equilibrium models to assess the impact of digitalization on resource management efficiency.

Case Study: Examining successful examples of integrating Islamic finance and digital technologies in other countries, such as Malaysia and Indonesia, to identify best practices.

Expected Results.

Increasing access to finance: The introduction of Islamic financial instruments is expected to increase the amount of finance for small and medium-sized farms by 20-30%, which will provide them with access to the necessary resources. [2]

Increased productivity: The use of digital technologies can lead to a 15-25% increase in productivity by streamlining resource management processes and improving supply chain transparency.[2]

Long-term economic benefits: The integration of Islamic finance and digital technologies is projected to attract up to $10 billion annually to Uzbekistan's agricultural sector, contributing to the sustainable development of the country's economy.

Table 1.

Current state of Islamic finance in Uzbekistan and its role in sustainable development of agriculture.

Indicator	Value/Description
Percentage of Muslims in Uzbekistan's Population	Approximately 94% of the population (around 34 million people) are Muslims, creating a demand for Islamic financial services.
Number of Banks Offering Islamic Financial Services	12 banks, including "Agrobank," "Uzpromstroybank," and "Microcreditbank," provide Murabaha services.
Volume of Islamic Financial Assets	Estimated at approximately 92.2 billion UZS (around 21.7 million USD) as of early 2021.
Planned Volume of Sukuk Issuance	Expected issuance of state and corporate Sukuk may reach 4-5 billion USD.
Level of Financial Literacy Among the Population	Low level; many citizens are unfamiliar with the principles of Islamic finance.
Investment from the Islamic Development Bank	The Islamic Development Bank allocated $200 million for agricultural development in Uzbekistan.
Expected Date for Submission of Islamic Finance Legislation to Parliament	2024 is anticipated for the completion and submission of the draft law on Islamic finance.
Percentage of Farmers Interested in Islamic Financing	High interest among farmers in rural areas for Islamic financing services to develop agribusiness.
Survey Results on Willingness to Use Islamic Financial Institutions	61% of businesses and 75% of individuals expressed willingness to opt for Islamic financial institutions when conducting operations in Uzbekistan.

Modeling the economic effects of using digital technologies in combination with Islamic finance shows significant potential for the sustainable development of Uzbekistan's agriculture. This collaboration can not only increase agribusiness productivity, but also ensure social well-being through access to ethical financial instruments. To achieve these goals, it is necessary to continue working on creating an appropriate regulatory framework and infrastructure, as well as improving financial literacy among the population.

For the successful implementation of this model, it is recommended to:

1. Develop a legislative framework: It is necessary to accelerate the process of adopting a draft law on Islamic finance in the Parliament of Uzbekistan in 2024. 2. Infrastructure creation: Invest in infrastructure development to support Islamic banking and the introduction of digital technologies in the agricultural sector.

3. Educational programs: Increase the level of financial literacy among farmers through educational initiatives on Islamic finance and digital technologies.

4. Fostering partnerships: Encourage cooperation between government agencies, banks and agribusiness to develop joint projects on the introduction of Islamic finance and digitalization.

5. Monitoring results: Establish monitoring systems to assess the effectiveness of the introduction of Islamic financial instruments and digital technologies in agriculture.

Thus, the integration of Islamic finance and digital technologies represents a promising path to sustainable development of agriculture in Uzbekistan, contributing to economic growth and social justice.

However, to achieve this, it is necessary to overcome existing barriers through the development of educational programs, the creation of a favorable regulatory environment and active cooperation between government agencies, banks and agribusiness. It is important to continue research in this area to identify best practices and develop effective strategies for the introduction of Islamic financial instruments in the agricultural sector.

Conclusion.

The article highlights the importance of integrating Islamic finance and digital technologies as a key factor in achieving sustainable development in the agricultural sector. Islamic finance, based on the principles of ethical investment and social responsibility, offers alternative financing mechanisms that can significantly improve access to capital for farmers and small agribusinesses.

Digitalization, in turn, opens up new opportunities for improving the efficiency of agriculture. The introduction of modern technologies such as blockchain and the Internet of Things allows optimizing resource management processes, improving supply chain transparency and increasing productivity. These innovations not only contribute to economic growth, but also help cope with the challenges associated with food security and climate change. However, a number of obstacles need to be overcome for the successful integration of Islamic finance and digital technologies. This includes the development of appropriate regulatory norms, raising awareness among farmers about the possibilities of Islamic finance and providing access to educational resources.

Thus, the synergy between Islamic finance and the digital economy represents a powerful tool for creating a more sustainable and efficient agricultural system. This collaboration can lead to significant social and economic benefits, contributing not only to the development of the agricultural sector but also to the improvement of the quality of life of the population as a whole. It is important to continue research in this area to identify best practices and develop strategies for the further implementation of these approaches.

Acknowledgments. In conclusion of this article, we would like to express our sincere gratitude to all those who contributed to its creation and development. First of all, we thank our scientific supervisors and experts in the field of Islamic finance and digital economy for their invaluable assistance and support. Their deep knowledge and experience became the basis for the analysis and discussion of the topics presented in the article.

Recommendations.

Based on the conducted research, we offer the following recommendations aimed at the effective integration of Islamic finance and digital technologies in the agricultural sector:

1. Development of specialized financial products: Islamic financial institutions should develop new products tailored to the needs of farmers and agribusinesses. This may include flexible financing schemes such as murabaha and ijarah, which take into account the specifics of agricultural production. 2. Increasing digital accessibility: There is a need to ensure access to modern digital technologies for farmers, especially in remote and rural areas. This can be achieved through government initiatives and partnerships with the private sector to build infrastructure and train users.

3. Educational programs: Developing financial literacy programs and training farmers on the basics of Islamic finance and digital technologies. This will help raise awareness of the tools and opportunities available, which in turn will encourage greater use of these resources.

4. Creating an enabling legal framework: Government agencies should develop and implement regulations that facilitate the development of Islamic finance in combination with digital technologies. This includes creating a legal framework for the use of blockchain, smart contracts and other innovative solutions.

5. Stimulating cross-sector partnerships: Encouraging collaboration between Islamic financial institutions, agribusinesses and technology companies to develop joint projects. This will allow them to combine efforts to create sustainable solutions aimed at agricultural development. 6. Monitoring and evaluating results: Implementing systems for monitoring and evaluating the effectiveness of programs aimed at integrating Islamic finance and digital technologies in the agricultural sector. This will help identify successful practices and areas for improvement.

7. Supporting research and innovation: Funding scientific research in the field of interaction between Islamic finance and the digital economy, as well as supporting start-ups offering innovative solutions for the agricultural sector.

Following these recommendations, it is possible to create a more sustainable and efficient agricultural system that will contribute to economic growth and social well-being, as well as ensure food security in the long term.

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