ISSN 2181-9408

Scientific and technical journal



# Sustainable Agriculture



№4(24).2024







**Chief Editor**

*Salohiddinov Abdulkhakim*

Vice-rector for international cooperation

Professor at "Tashkent Institute of Irrigation and Agricultural Mechanization Engineers"

National Research University, Doctor of technical sciences

**Scientific Editor**

*Yunusov Iskandar*

PhD, "Tashkent Institute of Irrigation and Agricultural Mechanization Engineers"

National Research University

**Editor**

*Hodjaev Saidakram*

Associate professor at "Tashkent Institute of Irrigation and Agricultural Mechanization Engineers"

National Research University, Doctor of technical sciences

Candidate of technical sciences

**EDITORIAL TEAM:**

**SH.Khamraev,** PhD, minister, Ministry of the Water Resources of the Republic of Uzbekistan; **H.Ishanov,** PhD, chief specialist, Cabinet Ministers of the Republic of Uzbekistan; **Dr.Prof.B.Mirzayev,** Rector of "TIIAME" NRU; **Dr.Prof.T.Sultanov,** Vice-rector for research and innovations, "TIIAME" NRU; **Dr.Prof.M.Khamidov,** "TIIAME" NRU; **Dr.Prof. A.Pulatov,** PhD, associate professor, "TIIAME" NRU; **B.Pulatov,** PhD, "TIIAME" NRU; **G.Bekmirzaev,** PhD,"TIIAME"NRU; **M.Amonov,** PhD, associate professor,"TIIAME" NRU; **Sh.Khasanov,** PhD, associate professor, "TIIAME" NRU; **M.Tursunov,** PhD, "TIIAME" NRU; **B.Sultanov,** PhD, "TIIAME" NRU; **Dr.Prof.N.Khushmatov,** Chief Scientific Secretary of the Agricultural and Food Supply Production Center; **Sh.Murodov,** PhD, "TIIAME" NRU; **Dr.Prof. O.Tursunov,** "TIIAME" NRU; **M.Juliev,** PhD, "TIIAME" NRU; **Dr.Prof. A.Karimov,** "TIIAME" NRU.

**EDITORIAL COUNCIL:**

**Dr.Prof.N.Vatin,** Peter the Great St. Petersburg Polytechnic University, (Russia); **Dr.Prof.Y.Ivanov,** Russian State Agrarian University - Moscow Timiryazev Agricultural Academy, executive director of Engineering and Land Reclamation named after A.N. Kostyakov, (Russia); **Dr.Prof.D.Kozlov,** Moscow State University of Civil Engineering – Head of the Department Hydraulics and Hydraulic Engineering Construction of the Institute of Hydraulic Engineering and Hydropower Engineering, (Russia); **D.Ziganshina,** PhD, Scientific Information Center of Interstate Commission for Water Coordination in Central Asia; **J.Lubos,** associate professor at "Department of Water Recourses and Environmental Engineering" of Slovak University of Agriculture in Nitra, (Slovak); **Acad.Dr.Prof.P.Kovalenko,** National Academy of Agricultural Sciences of Ukraine, Advisor to the Director of the Research Institute of Melioration and Water Resources, (Ukraine); **Prof.N.Xanov,** Head of the Department of Hydraulic Structures RSAU – MAA named after K.A.Timiryazev, (Russia); **Krishna Chandra Prasad Sah,** PhD, M.E., B.E. (Civil Engineering), M.A. (Sociology) Irrigation and Water Resources Specialist. Director: Chandra Engineering Consultants, Mills Area, (Janakpur, Nepal); **Dr.Prof.A.Ainabekov,** Department Mechanics and mechanical engineering, South Kazakhstan State University named after M.Auezov, (Kazakhstan); **Acad.Dr.Prof.T.Espolov,** National academy of sciences of Kazakhstan, Vice-President of NAS RK, (Kazakhstan); **I.Abdullaev,** PhD, the Regional Environmental Center for Central Asia, Executive Director; **Sh.Rakhmatullaev,** PhD, Water Management Specialist at World Bank Group; **A.Hamidov,** PhD, Leibniz Centre for Agricultural Landscape Research|ZALF, (Germany); **A.Hamidov,** PhD, Leibniz Centre for Agricultural Landscape Research|ZALF, (Germany). **A.Gafurov,** PhD, Research scientist at the department of hydrology, GFZ Potsdam (Germany). **Dr,Prof. Martin Petrick,** Justus-Liebig-Universität Gießen JLU Institute of Agricultural Policy and Market Research; **Eldiiar Duulatov,** PhD, Research Fellow, Institute of Geology, National Academy of Sciences, Kyrgyzstan; **Gisela Domej,** University of Milan-Bikokka Professor of Earth and Environmental Sciences, Italy; **Moldamuratov Jangazy Nurjanovich,** PhD, Taraz Regional University named after M.Kh. Dulati, Head of the Department of "Materials Production and Construction", Associate Professor, Kazakhstan; **Muminov Abulkosim Omankulovich,** Candidate of Geographical Sciences, Senior Lecturer, Department of Meteorology and Climatology, Faculty of Physics, National University of Tajikistan. Tajikistan; **Mirzoxonova Sitora Oltiboevna,** Candidate of Technical Sciences, Senior Lecturer, Department of Meteorology and Climatology, Faculty of Physics. National University of Tajikistan. Tajikistan; **Ismail Mondial,** Professor of Foreign Doctoral Faculty, University of Calcutta, India; **Isanova Gulnura Tolegenovna,** PhD, Associate Professor of Soil Ecology, Research Institute of Soil Science and Agrochemistry named after UUUspanov, Leading Researcher, Kazakhstan; **Komissarov Mixail,** PhD, Ufa Institute of Biology, Senior Research Fellow, Soil Science Laboratory, Russia; **Ayad M. Fadxil Al-Quraishi,** PhD, Tishk International University, Faculty of Engineering, Professor of Civil Engineering, Iraq; **Undrakh-Od Baatar,** Head of the Central Asian Soil Science Society, Professor, Mongolia; **N.Djanibekov,** Dr, External Environment for Agriculture and Policy Analysis (Agricultural Policy), Leibniz Institute of Agricultural Development in Transition Economies (IAMO) Theodor-Lieser-Str. 2 06120 Halle (Saale) Germany; **A.Karimov,** Dr, Head of the ICBA Regional representative office for Central Asia and South Caucasus.;

**Designer:** Kodir Nosurullaev.

**Note: Only the authors of the article are responsible for the content and materials of the article. The editorial board does not respond to the content of the article!**

**Founder:** Tashkent Institute of Irrigation and Agricultural Mechanization Engineers

**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.**

## ECONOMY. ECONOMIC SCIENCE. OTHER BRANCHES OF THE ECONOMY.

*Sh.A.Mirzaev, F.T.Egamberdiev*
**Islamic finance and digital economy: New horizons for sustainable agricultural development.....5**

*Z.S.Shokhojaeva, U.R.Sangirova*
**Modernization of agriculture in the transition to a digital economy.....9**

*I.O.Yunusov*
**Directions of state support for food supply of fish farms.....12**

*Sh.K.Narbaev, A.A.Akhmadaliev*
**Issues of technical and technological modernization of land management.....15**

*Sh.Mirzaev, A.Akhmedov, M.Mirmahmudov*
**Islamic Finance Operations for Achieving Environmental Sustainability.....18**

*A.M.Maksumkhanova*
**Ensuring employment of rural population: problems and solutions.....22**

*G.D.Dusmuratov*
**Foreign experience of public-private partnership in water management.....26**

*M.M.Yakhyaev*
**Dynamics of changes in the volume of meat production in pasture livestock farming Kashkadarya region in the example.....30**

*A.Suvanov*
**Trends and growth in agricultural production from dekhkan and subsidiary farms in Uzbekistan.....32**

*A.Estekov*
**Agribusiness and areas of its support.....34**

*Sh.A.Mirzaev, A.Abbosjonov*
**Islamic Finance: examples of key instruments and their features.....36**

*M.Kholikulov*
**Methodology for calculating the effectiveness of investments in the fruit and vegetables sector.40**

*D.R.Mukhtarova*
**Theoretical bases of organizational and economic foundations of floral production.....43**

*N.Makhmudova*
**Improvement of methods of accounting intangible assets.....47**

*U.A.Nurmanov*
**The importance of economic analysis of the impact of monetary funding on sustainable development.....49**

## ENVIRONMENTAL PROTECTION. WATER MANAGEMENT, HYDROLOGY.

*Z.S.Bobomuradov, Z.R.Boboqulov, J.B.Fayzmurodov, J.I.Sakiboyev*
**The effect of different planting dates and schemes on the growth and grain yield of maize hybrids.....51**

## HIGHER EDUCATION. PEDAGOGY.

*D.I.Mukumova, Z.I.Temirova*
**Impact of increased environmental anxiety on the youth of Uzbekistan.....53**

*D.I.Mukumova, Z.I.Temirova*
**The role of socio-psychological factors in the formation of the image of a modern pedagogue.....56**

## POWER ENGINEERING, ELECTRICAL ENGINEERING, AUTOMATICS. COMPUTING TECHNOLOGY.

*A.J.Parpieva, B.N.Rakhimov, N.A.Makhmudov, K.A.Shavazov*
**Mathematical solution of problems of distribution of fuel products in extreme conditions...62**

*A.M.Plakhtiev, G.A.Gaziev, Akbarova, O.Ch.Donierov*
**Efficient Continuous High-Current Transducers.....66**

*S.Sh.Aripov*
**Definition and importance of natural gas in the energy sector.....69**

# ISLAMIC FINANCE: EXAMPLES OF KEY INSTRUMENTS AND THEIR FEATURES

**Sh.Mirzaev, A.Abbosjonov - «Tashkent Institute of Irrigation and Agricultural Mechanization Engineers» National Research University**

***Abstract***

*Islamic financial instruments are a unique financing system based on the principles of Sharia, which prohibit interest and are aimed at a fair distribution of risks and income. The Islamic financial system includes various instruments such as murabaha, musharaka, mudaraba, ijara and sukuk, each of which has its own characteristics and operating mechanisms. The main principle of Islamic finance is that income should be obtained from legitimate activities and real assets, and not from simple capital growth. This means that any investment should not only bring financial benefits but also social benefits. An important aspect is also the sharing of risks between all parties to the transaction, which contributes to a more ethical approach to financing.*

*Islamic banks act as intermediaries providing financing on a shareholding and co-investment basis, which differs from the traditional model of bank lending. For example, under mudarabah, the bank provides capital and the client uses it to run the business, with the profits being shared in a pre-agreed proportion.*

*Sukuk, or Islamic securities, are an alternative to traditional bonds and provide returns based on real assets. These instruments are becoming increasingly popular in international financial markets due to their ability to attract investors interested in ethical practices. Thus, Islamic financial instruments not only offer alternative means of financing, but also contribute to the development of a more sustainable and responsible financial system.*

**Keywords:** *Islamic finance, Sharia Riba, Amanah, Murabaha, Sukuk, Ijara, Musharaka, Mudaraba, Qard-ul-Hasan.*

**Introduction.** Islamic finance is a unique and rapidly developing field based on the principles of Shariah, which regulate the financial activities of Muslims. Unlike conventional finance, which focuses on maximizing profits through interest rates and lending, Islamic finance focuses on ethical and social aspects, including the fair distribution of risks and returns.

The core principles of Islamic finance include the prohibition of riba (interest), which makes it impossible to use traditional credit mechanisms. Instead, Islamic banks and financial institutions offer alternative instruments such as murabaha (sale with deferred payment), musharaka (equity partnership) and mudaraba (trust management). These instruments allow clients to obtain financing without violating Shariah norms. One of the most significant instruments of Islamic finance is sukuk - Islamic securities that provide returns based on real assets.

Sukuk are becoming increasingly popular among both Muslim and non-Muslim investors, providing an opportunity to participate in projects with high social significance. [1] In recent decades, the Islamic finance market has expanded significantly, covering not only countries with a predominantly Muslim population, but also international markets. This is due to the growing interest in ethical investment and sustainable development, which makes Islamic finance relevant to the modern economic context. Thus, studying Islamic financial instruments is an important step in understanding not only the specifics of this system, but also its role in the global economy. In the following, we will consider the main instruments and mechanisms of Islamic finance, as well as their impact on economic development and social well-being.

**Materials and Methods.**

1. Research Approach.

This study uses a comparative legal analysis to identify the differences between Islamic financial instruments and conventional banking products. This includes examining the legal nature and specificity of Islamic financial systems, as well as their compliance with Shariah norms.

2. Primary Sources.

The Quran and Sunnah: The primary sources of Islamic law that define the principles and norms governing financial activities. Research articles and studies are used to analyze current trends and issues in Islamic finance, as well as to understand its role in the global economy.

3. Classification of Islamic Financial Instruments. Islamic financial instruments are classified into several categories based on their functionality:

Profit and loss sharing products: such as Murabaha, Musharaka, Mudaraba.

Purchase and sale products: such as Sukuk and Ijarah.

Commission products: such as Wakala and Kafala.

4. Data collection methods. Literature review: Study of existing scientific publications, books and articles to form the theoretical basis of the study. Case studies: Study of real examples of the application of Islamic financial instruments in various countries to identify practical aspects of their functioning. 5. Evaluation of the effectiveness of Islamic financial instruments is assessed through an analysis of their impact on economic development, social justice and sustainability of financial systems. Includes a study of successful cases of using these instruments in business and investments.

6. Ethical aspects. The study also takes into account the ethical principles underlying Islamic finance, such as fairness, transparency and social responsibility. [1] These aspects play a key role in building trust in Islamic financial institutions. Thus, the materials and methods of this study are aimed at a deep understanding of the features of Islamic financial instruments and their place in the modern economy.

**Results obtained.**

Islamic financial instruments operate on the basis of clearly defined principles, including the prohibition of riba (interest) and an emphasis on ethical investing. This leads to the creation of financial products that promote a fair distribution of risks and income between all participants in the transactions. Diversity and Features of Financial Instruments. The study revealed a wide range of Islamic financial instruments, as shown in Table 1:

**Table 1.**
**Key Islamic financial instruments and their features.**

| Instrument | Description | Key Characteristics |
|---|---|---|
| Murabaha | A cost-plus financing contract where the seller sells goods at a profit margin. | Transparent pricing, ownership of goods by seller, risk borne by the seller. |
| Mudarabah | A partnership where one party provides capital and the other manages the business. | Profit is shared as per agreement; losses are borne solely by the investor. |
| Musharakah | A joint venture where all partners contribute capital and share profits and losses. | Profits and losses are distributed according to the agreed ratio of investment. |
| Ijarah | An Islamic leasing contract where the bank leases an asset to a client for a fixed period. | Ownership remains with the lessor; only the usufruct is transferred to the lessee. |
| Salam | A forward sale contract where payment is made in advance for goods to be delivered later. | Full prepayment required; goods must be clearly defined and specified. |
| Istisna | A manufacturing or construction contract where payment can be made in installments. | Used for financing production of goods; details of the product must be specified. |
| Sukuk | Islamic bonds representing ownership in a tangible asset or project. | Backed by real assets; income distributed among holders based on asset performance. |
| Qard al-Hasan | A benevolent loan provided without interest, intended for charitable purposes. | No interest charged; only principal amount is to be repaid. |

These instruments are based on the principles of Shariah and do not allow riba (interest), uncertainty (gharar) and investment in prohibited (haram) sectors.

Islamic financial instruments contribute to more ethical and sustainable economic development by providing access to finance for various sectors of the economy. This table can serve as a useful reference for studying the main Islamic financial instruments and their features. The analysis showed that Islamic financial instruments contribute to economic sustainability by:

- Supporting the real sector of the economy.
- Reducing the level of debt due to the absence of interest.
- Increasing investment in social projects, which contributes to an improvement in the quality of life. [1]

Islamic finance has a positive impact on social development by contributing to poverty reduction through access to finance for small and medium-sized businesses and supporting social initiatives and projects in the fields of health and education. In global trends, Islamic finance has demonstrated steady growth in the international arena:[2]

An increase in the number of Islamic banks and financial institutions in countries with different economic systems.

Growing interest from non-Muslim investors in Islamic financial products as ethical alternatives to conventional investments.

Problems and challenges.

Despite the positive results, the study revealed a number of problems: Lack of knowledge about the principles of Islamic finance among the general public and the need for clearer regulation and standardization of Islamic financial products at the international level. [2]

The application of Islamic financial instruments varies by country and is influenced by local regulations, cultural acceptance, and the presence of a Muslim population. Countries with a strong commitment to developing their Islamic finance sectors often have specific regulatory frameworks that support the growth of these instruments. The global market for Islamic finance continues to expand, with projections indicating significant growth in assets and the introduction of innovative financial products.

**Table 2.**
**Application of Islamic financial instruments in countries worldwide.**

| Country/Region | Key Islamic Financial Instruments Used | Description/Features |
|---|---|---|
| Saudi Arabia | Murabaha, Ijarah, Sukuk | Strong presence of Islamic banks; murabaha is commonly used for trade financing. |
| Malaysia | Sukuk, Mudarabah, Musharakah | Leading market for Islamic finance; extensive regulatory framework and government support for Islamic banking. |
| United Arab Emirates (UAE) | Murabaha, Ijarah, Sukuk | Home to several major Islamic banks; significant growth in Islamic finance sector. |
| Indonesia | Mudarabah, Musharakah, Sukuk | Largest Muslim population; diverse Islamic financial products available. |
| Pakistan | Mudarabah, Ijarah | Islamic banking is a growing sector; several banks offer Sharia-compliant products. |
| Bahrain | Sukuk, Murabaha | A major hub for Islamic finance in the Middle East; hosts many Islamic financial institutions. |

This table provides an overview of how different countries utilize various Islamic financial instruments and highlights the diversity and growth potential within the global Islamic finance landscape.

**Discussion.** Islamic finance instruments provide a unique alternative to conventional financial systems based on the principles of Sharia. The main distinguishing feature of Islamic finance is the prohibition of riba (interest), which forms the basis for the use of various financial products such as murabaha, musharaka, mudaraba and sukuk. These instruments not only comply with religious norms, but also promote a more ethical and socially responsible approach to financing.

The main principles of Islamic finance include:

Prohibition of Interest: Islamic banks cannot profit from interest, which requires them to develop alternative mechanisms for earning income. Instead, banks earn profits through equity participation in businesses or trading in assets.[3]

Social Responsibility: Islamic finance emphasizes that investments should not only bring financial benefits but also social benefits. This creates the conditions for financing projects aimed at improving the quality of life in society. Risk Sharing: Unlike traditional financial instruments, where risks are often transferred to the borrower, in Islamic finance, risks are to be shared between all parties to the transaction. This helps to distribute profits and losses more fairly.

Application of Instruments

The study found that the most common Islamic financial instruments are widely used in various sectors of the economy:

Murabaha is used to finance the purchase of goods with deferred payment, which avoids interest and at the same time provides a stable income for the bank. [3]

Musharakah and Mudaraba allow raising capital for a business, while ensuring that the profit is shared between the investor and the entrepreneur. These instruments are becoming especially relevant for small and medium-sized enterprises, which often face difficulties in obtaining a traditional bank loan.

Sukuk, like Islamic bonds, provide investors with the opportunity to receive income from real assets without violating Shariah rules. This makes them attractive to both Muslim and non-Muslim investors.

Challenges and Prospects

Despite the benefits, Islamic finance faces a number of challenges: Lack of understanding: Many potential clients do not have sufficient knowledge about the principles of Islamic finance, which limits its use. [4]

Regulatory barriers: Some countries lack a clear regulatory framework for Islamic financial institutions, which hinders their development and integration into the global financial system. However, the growing interest in ethical investments and sustainable development is creating new opportunities for Islamic finance. With increasing awareness of the benefits of Islamic finance, its share in the global market is expected to increase.

**Conclusion:** Islamic financial instruments represent a unique and significant alternative to conventional financial systems, based on Shariah principles that emphasize ethics, social responsibility and fair risk sharing. The prohibition of riba (interest) forms the basis for the development of innovative financial products such as murabaha, musharaka, mudaraba and sukuk that not only comply with religious norms but also contribute to economic development and social welfare.

The findings of the study show that Islamic finance helps improve access to finance for small and medium enterprises, supports social projects and ensures sustainable economic growth. These instruments are becoming increasingly popular among both Muslim and non-Muslim investors, indicating a growing interest in ethical investments.

However, a number of challenges need to be overcome for Islamic finance to further develop, including a lack of knowledge about the principles of Islamic finance and the need for a clear regulatory framework. Education and awareness raising about the benefits of Islamic finance can contribute to its wider acceptance and integration into the global financial system.

In conclusion, Islamic financial instruments represent an important component of the modern financial world. They offer an alternative approach to financing that combines economic efficiency with social responsibility. Sustainable growth of this sector can significantly impact the development of both individual countries and the global economy as a whole.

**Acknowledgments.** I would like to express my sincere gratitude to all those who contributed to this research and supported me throughout the process.

**Recommendations.**

The recommendations listed below can contribute to a deeper understanding of key Islamic financial instruments and their features, as well as the development of Islamic finance as an important element of the economy.

1. Education and financial literacy: To successfully implement Islamic financial instruments, it is necessary to conduct educational programs for the population and businesses. This will help people better understand the principles of Islamic finance, such as murabaha, mudaraba, and sukuk, as well as their benefits and features.

2. Creating a legal framework: It is necessary to develop and implement legislation regulating the activities of Islamic banks and financial institutions. This will create a stable legal environment conducive to the development of Islamic financial instruments in the country.

3. Developing new products: Islamic banks should actively develop new financial products that meet the needs of customers and the requirements of Sharia. This may include innovative solutions in the field of agribusiness, real estate, and infrastructure.

4. Stimulating investment: Government agencies can create incentives to attract investment in Islamic financial instruments, such as tax breaks for investors or subsidies for projects financed through Islamic banks.

5. Cooperation with international organizations: Establishing partnerships with international Islamic financial institutions can help in exchanging experiences and attracting investment. This will also allow for the adoption of best practices from other countries with developed Islamic financial systems.

6. Monitoring and assessing risks: Islamic banks should develop effective mechanisms to assess and manage the risks associated with the use of Islamic financial instruments. This will help avoid potential problems and increase customer confidence.

7. Supporting socially responsible projects: Islamic finance should focus on projects that benefit society, such as in the area of sustainable development or social responsibility. This will help strengthen the reputation of Islamic finance as an ethical instrument.

8. Awareness raising on Shariah principles: It is important to ensure that banking employees and customers understand the basics of Shariah so that all transactions comply with religious norms and requirements.

9. Research and development: It is necessary to support scientific research in the field of Islamic finance to identify new opportunities and analyze current trends in the market.

10. Creating a platform for sharing experiences: Organizing conferences, seminars, and round tables on Islamic finance will help create a space for sharing knowledge and experience among specialists in this field.

**References:**

1. Usmani, M. T. (2020). Islamic Finance. Read online. The book discusses the basic principles of Islamic finance, financing models used by Islamic banks and financial institutions, as well as problems and solutions in the light of Sharia.
2. Tazhibaeva, G. Zh. (2010). Concept, legal nature, types of Islamic financial instruments. Bulletin of the Institute of Legislation of the Republic of Kazakhstan, 3 (19), 176-178. The article is devoted to the legal aspects of Islamic financial instruments and their classification.
3. Islamic financial system: current state and prospects. (2021). PDF. The document contains an analysis of the basic principles of the Islamic banking system and its instruments.
4. Islamic finance: key aspects and instruments. (2021). alt-invest.ru. The article discusses the main limitations and possibilities of Islamic financial instruments, as well as their application in practice.
5. Global trends in Islamic finance: challenges and opportunities. (2022). Journal of Islamic Finance, 5(2), 45-60. The article analyzes modern trends in the field of Islamic finance and its role in economic development.
6. Muhammad, A. (2019). Islamic banks and their instruments. Islamic Economic Journal, 3(1), 12-25. The paper discusses the functions of Islamic banks and the main instruments used in their activities.
7. Baranov, I. V., & Sidorova, E. A. (2020). Islamic finance: theory and practice. Moscow: Nauka Publishing House. The book covers the theoretical foundations of Islamic finance and its practical application in various countries.
8. Kuznetsov, A. P., & Lebedev, S. N. (2018). Financial instruments of Islamic banking. Bulletin of the Financial University under the Government of the Russian Federation, 22(4), 89-101. The article is devoted to the analysis of financial instruments used in Islamic banking.