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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

FOREIGN EXPERIENCE OF PUBLIC-PRIVATE PARTNERSHIP IN WATER MANAGEMENT

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Abstract

This article studies foreign experience in implementing public-private partnership (PPP) projects in the water sector. It analyzes the methods of using PPP mechanisms in developed and developing countries to manage water resources, modernize infrastructure, and increase efficiency. As a result of studying foreign experience, recommendations have been developed for the introduction of PPP in the water sector in Uzbekistan.

Keywords: *public-private partnership, water management, infrastructure, irrigation, private sector, foreign experience, financing, saving water resources.*

Introduction. Water resources are the main source of human life and an important factor in economic development. However, global climate change, population growth and industrialization processes are sharply increasing the demand for water resources. This puts the need for effective resource management and infrastructure modernization in the water management sector on the agenda.

International experience shows that partnership between the public and private sectors is of great importance in solving existing problems in the water management sector. Through public-private partnership (PPP) mechanisms, it becomes possible to combine the financial and institutional capabilities of the public sector with the innovations and management efficiency of the private sector.

In developed countries, PPP models have shown great effectiveness in modernizing water supply and water treatment infrastructure, introducing resource-saving technologies and ensuring environmental sustainability. In developing countries, this experience is worth studying in solving urgent problems in water resources management.

This article analyzes foreign experience in organizing public-private partnerships in the water sector. It also examines the advantages and disadvantages of PPP models used in various countries and provides recommendations for their implementation in the conditions of Uzbekistan.

Materials and Methods

Studying international experience in implementing public-private partnerships (PPPs) in water management helps to identify existing problems in this area and their solutions. The literature in this area focuses on the following main areas: Grimsey, D., & Lewis, M. K. (2004) "Public Private Partnerships: The Worldwide Revolution in Infrastructure Provision and Project Finance" discusses the essence, financing mechanisms and strategic importance of PPPs. Marin, P. (2009) "Public-Private Partnerships for Urban Water Utilities: A Review of Experiences in Developing Countries" analyzes the role of PPPs in urban water supply. The experience of countries such as France, Australia, India and Brazil is widely covered in World Bank and OECD reports. USAID and ADB (Asian Development Bank) reports were used to use international experience in water resources management in Uzbekistan. The following methods were used in this study: By analyzing and synthesizing data from international reports, scientific literature and periodicals in the field of water management, general patterns were identified. The differences between PPP models in different countries were studied using the method of comparing their advantages. Cost-benefit analysis methods were used to assess the effectiveness of PPP projects in the field of water management. These methods served as the basis for achieving scientific novelty in the research and developing recommendations that can be practically applied in the conditions of Uzbekistan.

Results

The PPP models used in water management in different countries vary, and their choice depends on the economic, legal and environmental conditions of the country. Compared to other sectors of public infrastructure (energy and power, transport, ICT-Information and Communication Technologies, and urban water utilities), PPPs in the irrigation sector are relatively rare. The World Bank's 2019 Private Sector Engagement Report for that year did not mention the irrigation sector at all.

The situation in Turkey is similar to many other countries: in 2016, Turkey ranked third in the world (after Brazil and India) in terms of the value of investments in PPPs between 1990 and 2015. In the same year, it also ranked third in the European PPP league (after the United Kingdom and France).

In November 2017, 187 PPP projects were operating in Turkey, and another 34 were in the financing and construction stages. The total cost of project investments was 60 billion US dollars.

PPPs are now common in the economic and social infrastructure sectors, but none in the irrigation sector .

The collected data on PPPs in the field of irrigation and drainage (IvaD) and the results of their comprehensive analysis were presented in May 2005 at the Seminar sponsored by the international network for cooperative management of the irrigation sector in Tarb. These cases were analyzed in detail in a 2007 World Bank discussion paper.

The selected sample consisted of 21 cases, of which 16 were in operation and 5 were in the planning stage. Of the 21, 4 are located in Europe, 1 in Australia, 4 in sub-Saharan Africa, 2 in South and East Asia, 2 in Latin America, and 8 in the Middle East and North Africa. Since 2005, several of these have been abandoned and some have been modified.

The authors of a document written by the World Bank analyzed 21 cases and came to the following conclusions:

With the exception of 2 or 3 cases, PPPs in irrigation and drainage are a relatively new concept and much remains to be learned.

In most cases, PPPs are government-initiated and are currently intended to limit subsidies for activities and reduce government involvement. In such cases, the willingness of the private sector to participate was weak. A small number of

PPPs emerged as a result of farmers' desire to obtain better irrigation services through their own SFUs.

Most PPPs (90%) were either privately owned (7 cases) or (in 8 cases) in the form of joint investment contracts.

A minority of contracts (4) were for the provision of services, while the rest were for the provision of public services (PSS).

The level of various risks was high. This was particularly evident in public service contracts (where the contractor had to recover its costs directly from farmers). The overall result of the current PPPs was improved water service delivery, but this came at a higher cost to the farmer (due to reduced government subsidies, not fully offset by increased efficiency).).

Operation, Maintenance and Management, MOM (also known as "Management, Operation, Maintenance").

A 2016 report by World Bank authors is a systematic and comprehensive compilation of PPPs in international irrigation, which provides a comprehensive overview of the nature of such PPPs. , provides guidance to governments on the scope, structure and implementation of PPPs. It provides a detailed assessment of existing PPPs. The report draws on material presented at a special session of the International Commission on Irrigation and Drainage (ICID) held in Montpellier, France, in October 2015. A presentation at the 2015 World Water Forum by the World Bank's Senior Irrigation Specialist (Burke, 2015) also concluded:

In 2015, the World Bank had 29 irrigation PPPs in its database. Some of them were listed in the 2007 report, while others were a mix of ongoing and planned projects. Four of them were managed, nine were exclusively by the EIAH, and the rest were financed by a private partner. including investment.

Following its previous involvement in the preparation of the "Egyptian Western Delta Project", the World Bank has been actively involved in financing two more such projects. Morocco's Gerdan system was the first project implemented by the IMC, while Ethiopia's Megech-Seraba project was the first project implemented by the World Bank through the IMU. Although not financed by the World Bank, Bangladesh's Mukhuri project, financed by the Asian Development Bank, is another good example of PPP in this sector. The latest PPP is the Ramtal Integrated Drip Irrigation System in Karnataka, India, completed in 2018. It is a major Turnkey and Service contract, involving the government, a major Indian private contractor, and a leading Israeli irrigation technology company working together with an Indian partner. will take.

Хусусий инвесторлар ирригация бўйича хизматларни кўрсатишдан олинадиган даромадлардан кўра ирригация тизими жойлашган бутун бошли қиймат занжирига оид молиявий даромадларга кўпроқ қизиқадилар.

A 2016 World Bank compilation (Mandri-Perreau and Bisbee) provides a systematic review of existing experiences and guidelines for good practice. His conclusions are consistent with those presented above and are summarized below.

"In general, it is unlikely for private companies to finance irrigation projects on their own, especially in developing countries - the risk of farmers paying for services provided by irrigation systems is very high... (p. 64)

"Very rarely are irrigation PPP systems fully funded by the private sector. In most of the cases we have studied, it is possible to find forms of financing from the public sector and/or support from development partners." (p. 65)

"Even in competitive bidding, PPPs in irrigation remain a nascent sub-sector, and the number of sponsors and lenders willing to finance such systems is very small. As a result, even in highly competitive auctions, there are few applications in this regard." (43 p.)

The more specific and detailed conclusions drawn from the case studies presented in the World Bank collection are summarized below: (in some cases, the "outcomes" are not actual results but rather intended results):

Conclusions and lessons learned from the case studies. The impact of PPPs on irrigation:

- generally improved water services for farmers;
- in most cases, payments for water services increased because government subsidies were discontinued;
- the cost and financial burden on the government for operating irrigation infrastructure decreased.

Lessons learned:

- well-designed and implemented legal and regulatory frameworks are key factors in attracting investment;
- groundwater abstraction regulations and soil and water conservation measures are necessary to control the unintended negative consequences of increased irrigation payments;
- In order for irrigation projects to be successful, they must be applied in the rapidly growing agricultural sector. PPPs should be planned from the perspective of a broader network policy;
- involvement of third parties (eg independent irrigation operators working between farmers and government agencies) can be useful;
- proper incentives should be provided to operators to provide improved and more efficient services - including profit and performance-based contributions;
- monitoring and evaluation of the private partner's work is of great importance;
- government participation (through regulations, financial support) attracts private investors ("forms a long list");
- availability of information and data attracts buyers;
- improved service quality and a customer-centric approach are essential to ensure sustainability and efficiency, and this is precisely why PPPs can bring benefits.

The involvement of third parties (eg independent irrigation operators working between the farmer and government agencies) can be useful.

Operators should be given the right incentives to deliver improved and more efficient services, including profit and performance-based contributions. Monitoring and evaluation of the private partner's work is important. Government participation (through regulations, financial support) attracts private investors ("forms a long list"). Availability of information and data attracts buyers.

Public-private partnerships (PPPs) in agriculture are an important tool for developing infrastructure, introducing innovations, and responding to market demands in countries such as Turkey, Morocco, and India. In each country, PPP models and mechanisms are adapted to local conditions, political agendas, and economic opportunities.

Table 1.

Models and mechanisms of Public-private partnerships (PPPs) in agriculture in countries Turkey, Morocco, and India

Indicators	Turkey	Morocco	India
Goals	Modernization of the irrigation system, effective management of water resources.	Improvement of land reclamation, introduction of water-saving technologies.	Improvement of water supply for agriculture, development of infrastructure.
Main directions of PPP	Construction of irrigation systems, reservoirs and pipe systems.	Improvement of water saving systems and land reclamation.	Irrigation systems, water saving technologies and water resources management.
Legal basis	Laws aimed at water resources management since the 2000s.	"Moroccan Green Strategy" and irrigation laws.	National Water Policy and Legislative Reforms 2015.
Models of the private sector	Management through concessions, private funding.	Subsidized partnership, concessions.	Public-private partnership, cooperative organizations.
Funding sources	State subsidies, private investments, international grants.	Financing from the state budget, private investment.	National and international financial institutions.
Allocation of risks	Legal and irrigation system risks to the state.	Risks are shared between the private sector and the state.	State subsidies and guarantees.
Efficiency	Modernization of irrigation systems.	Wide implementation of water-saving technologies.	Improving water supply with the participation of the private sector.

Turkey, Morocco and India have experience in effective implementation of PPP mechanisms in water management. Turkey's successes in the modernization of irrigation infrastructure, Morocco's introduction of water-saving technologies, and India's digital management systems are unique advantages for these countries. Each of them has the opportunity to exchange experience for efficient use of water resources.

Involvement of the private sector through PPP mechanisms plays an important role in financing, upgrading infrastructure and introducing innovations. The results of the study will help to develop effective approaches to the implementation of PPP in the field of water management and contribute to the sustainable management of resources in the country.

Discussion

The introduction of public-private partnership (PPP) models in the water sector is gaining global importance. The results of a study of foreign experience indicate that PPPs are an important mechanism for effective water resource management, infrastructure modernization, and sustainable development.

Based on the results of the study, the following conclusions were drawn:

Strengthening the legislative framework: Improving the legal framework for PPPs in Uzbekistan and introducing clear provisions on water management projects into existing laws.

Pilot projects: Assessing existing risks by implementing pilot PPP projects for irrigation or drinking water systems.

Attracting the private sector: Creating additional financial and tax incentives for private investors.

Partnership platforms: Establishing communication and consultation platforms to strengthen cooperation between the public and private sectors.

It is also necessary to identify and analyze risks through the implementation of pilot projects, as well as improve the legal and institutional structure. Mechanisms developed based on foreign experience will serve to ensure sustainable development and effective resource management in water management in Uzbekistan.

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