Agro-industrial clusters: potential source of financing for water management organizations in the market economy of Uzbekistan

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Abstract— The article justifies the need to create agro-industrial clusters as potential source of financing for water management organizations. It provides the system of payment for water delivery services in agro-industrial clusters. The organizational and economic mechanisms are offered to cover a part of expenses of water-management organizations on delivery of irrigation water and qualitative water-management services on the basis of introduction of multi-structured clusters are offered.

Index Terms— agro-industrial clusters, water services, fee-based water use, water delivery fees, contractual agreement, loan funds

1 INTRODUCTION

TO introduce market principles and mechanisms for the management and financing of agriculture and water resources in Uzbekistan, regulatory and legal acts, methods and instruments for their management are being fundamentally improved.

One of the qualitative market changes in agriculture is the cluster approach to doing business. In particular, agro-industrial clusters can consolidate agricultural producers and processing enterprises of a particular area and zone in order to improve their performance, increase productivity, stimulate competition and innovations, promote formation of new business entities for efficient water resources management, maintenance and operation of water infrastructure.

The Decree of the President of the Republic of Uzbekistan was adopted in October 2019 to further improve the system of water resource management and operation of hydraulic facilities, ensure efficient implementation of projects on irrigation and land reclamation, and introduce market principles and mechanisms in the field of water management [1]. It provides for a step-by-step implementation of mechanisms for water users to cover part of the expenses of water management organizations related to irrigation water delivery.

It is the agro-industrial clusters that have potential source of financing for water management organizations and have capacity to provide qualitative water services and introduce paid water use based on market mechanisms.

2 LITERATURE REVIEW

In economic literature, the concept of cluster has many meanings, but its common feature is the unification of individual elements into a coherent whole.

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The theoretical basis of the study is the model of M. Porter's national competitive advantages "rhombus". According to Porter, in today's economy, especially in the context of globalization, traditional division of the economy into sectors and industries is losing its relevance. Cluster systems - harmonious associations of various firms and organizations that take into account market mechanisms to the maximum extent – come to the first place [8].

However, preconditions for formation of the cluster theory related to agriculture can be observed in Johann Thunen and A. Marshall studies. Johann Thunen is associated with the formation and development of the location theory on agricultural land use and rent [9].

Another famous researcher, A. Marshall also paid great attention to study of the organization and localization of agricultural production [9].

Thus, when creating agro-industrial clusters, it is needed to involve agricultural producers as suppliers of cheap and qualitative raw materials for processing, providing them comprehensive assistance, in particular, provision of water services, timeliness and quality of which directly depends on their cost and price set for irrigation water.

Many studies on water pricing have been conducted in recent years.

For instance, researcher Kim [7] examined water delivery services through marginal cost pricing and concluded that such pricing can maximize social welfare as compared to pricing based on average values.

Riesgo et al. [11] studied the impact of water price changes based on the structure of agricultural crops using a water price model.

Berbel et al. [5] used linear programming to analyse the impact of higher water prices on crop rotation of farms, taking into account the volume of water used.

Giannoccaro et al. [6] analyzed the relationship between water prices and farmers' incomes by comparing different methods of water pricing.

Features Of Investment In Mutual Fund were investigated in works of Burkhanov Aktam and others [12]

As can be seen, the researchers used different interpretations and models to determine fees for irrigation water and cost of water delivery services. When introducing fees for irrigation water delivery services in Uzbekistan, it is possible to take into account scientific approaches, methodologies and foreign experience, while considering conditions and specifics of agriculture and water management in Uzbekistan.

3 ANALYSIS AND RESULTS

As a result of reforms carried out in recent years in agriculture in Uzbekistan, there have been qualitative market changes. To date, 162 agro-industrial clusters of various areas of activity have been established, including 89 cotton-textile clusters, 52 horticultural clusters, and 21 other clusters. All these clusters were established on an area of 773.3 thousand ha, of which 734.4 thousand ha were allocated to cotton and textile clusters, 22.3 thousand ha – horticultural clusters and 16.6 thousand ha – to livestock clusters.

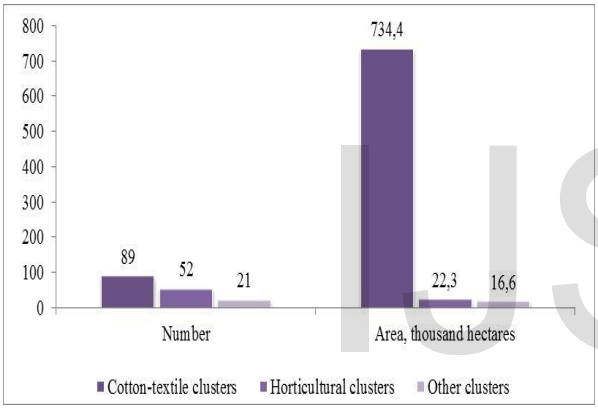

Fig. 1. Information about agro-industrial clusters in the Republic of Uzbekistan (01.01.2020)

At present, agro-industrial clusters mainly operate on their own lands and on farm lands on the basis of a contract for the supply of agricultural products (contractual agreement). Water consumers represented by agro-industrial clusters (on their own land) and farms conclude agreements with Water Consumer Associations (WCAs) for water delivery services, and WCAs conclude agreements with District Irrigation Departments (DID) for water intake.

The system of payment for water delivery services in agro-industrial clusters is based mainly on the regulation on procedure of lending the costs of growing and making final mutual payments for raw cotton and grain [3] and the Order of the Cabinet of Ministers [2].

In 2018, the Fund for State Support to Agriculture at the Ministry of Finance (hereinafter referred to as the Fund) allocated 820 billion UZS for cotton and textile clusters, given that the clusters themselves invested 382.9 billion UZS.

In particular, all loan funds of borrowers (farms, other agricultural enterprises and agro-industrial clusters) for WUA services payment from the Fund are allocated to agro-industrial clusters. The amount of loans to agro-industrial clusters at the expense of the Fund is at least 60% of the estimated need to finance the cultivation and supply of raw cotton. In addition to this lending, the clusters should be given the right to invest in the improvement of irrigation and drainage network at the expense of their own funds and free resources.

Based on agronomic operations, agro-industrial clusters broken down into raw cotton producers allocate and transfer loan funds, including payment for WCA services, to farm accounts. At the same time, a part of loan funds to be paid for WCA services remains on the cluster account for transfer to the WCA account.

Farmers transfer loan funds to the WCA accounts based on concluded agreements with WCAs on water supply services. The clusters may transfer money directly to WCAs based on the report for provided services signed by farmers.

Final payments to farms for raw cotton are made by agro-industrial clusters by the end of the harvesting year.

At the same time, the price for raw cotton purchased by agro-industrial clusters is set on a contractual basis based on the costs of agronomic operations and the profitability of farms and should not be lower than the prices set for state needs.

At the same time, the price for raw cotton purchased by agro-industrial clusters is set on a contractual basis, based on the costs formed on the basis of agro-technological maps, taking into account the profitability of farms and should not be lower than the set prices for state needs.

At the same time, agro-industrial clusters are currently functioning in Uzbekistan, with the functions for operation and maintenance of the land reclamation network and their financing, which were previously entrusted to WCAs. Existing WCAs in these clusters have been liquidated, and their debts are covered by own funds of agro-industrial clusters. For this purpose, an Irrigation and Land Reclamation Department is established in the agro-industrial cluster, with its own accounting unit.

At the same time, all expenses related to the cultivation and processing of cotton products and their waste, as well as irrigation services, are covered by own funds of the clusters and their member-organizations and loans from commercial banks. Also, clusters are allowed to freely dispose of their own products and independently determine pricing policy and sales volumes [4].

At the same time have a number of unresolved problems and disadvantages in the interactions of agro-industrial clusters with WCAs:

payment for WCA services has improved significantly, but their technical and human resources do not allow solving the problems of timely water supply;

WCAs cannot fulfill their obligations to supply water to consumers and solve problems at all levels of relevant government bodies (water management organizations, hokimiyats, etc.);

clusters solve water supply problems (agreeing on water use plan, distributing irrigation water on the territory of WCAs and others), mainly with the district irrigation departments, although water supply agreements for the growing season were concluded between WCAs and clusters.

As stated above, the payment for water delivery services is mainly covered by preferential loan funds, i.e. financed by the state. Proceeding from this, the Government has determined a step-by-step introduction of market principles and financing mechanisms for water management organizations for irrigation water delivery, such as payment for water delivery, outsourcing mechanisms, and public-private partnerships. It is agro-industrial crasters that can effectively introduce and implement these mechanisms for financing of water sector in Uzbekistan.

4 CONCLUSIONS AND RECOMMENDATIONS

The experience of agro-industrial clusters in operation and maintenance of the land reclamation network and their financing shows that they are able to finance part of the expenses of water management organizations for water delivery and quality provision of water services. On this basis, we propose to introduce multi-structured agro-industrial clusters at the level of administrative district:

an inventory and technical audit of irrigation and land reclamation facilities need to be carried out in order to assess the value of these facilities and transfer them to the balance sheet of agro-industrial clusters for further calculation of their depreciation;

entrust agro-industrial clusters with functions of operation and maintenance of irrigation and land reclamation facilities, reservoirs, pumping stations by establishing a department/service for irrigation and land reclamation based on outsourcing mechanisms and public-private partnerships;

agro-industrial clusters need to enter into contracts with DID for water intake;

agro-industrial clusters need to conclude contracts with other water consumers for water delivery (other water consumers are households, enterprises and other water consumers whose sources of irrigation are transferred to clusters);

all expenses related to payment for water delivery services are made at the expense of own funds of agro-industrial clusters. At the same time, clusters should be allowed to freely draw up a plan for the location of agricultural crops, particularly of main crops (wheat, cotton and rice), manage their own production, and independently determine the pricing policy based on market trends and sales volumes.

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