



## Research Article

# PROSPECTS OF THE DEVELOPMENT OF AGROCHEMICAL SERVICES IN AGRICULTURE

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## ABSTRACT

The article presents the current state of development of the agrochemical services, the problems and factors affecting them, as well as scientific suggestions for the effective organization of the agrochemical services in agriculture.

## KEYWORDS

Agrochemical services, agroclusters, infrastructure, stock exchange, subsidies, factors, futures contracts, innovative technologies.

## INTRODUCTION

Since the country gained independence, large-scale economic reforms have been carried out in agriculture. As a result of economic reforms in the agrarian sector, farmers and peasant farms, which have property and entrepreneurial freedom, have become the main agricultural products producer. Also, the special attention paid to the development of agroclusters in

our country has led to changes in the nature of property relations and service infrastructures in agriculture, that is, the liberalization of the economy in agriculture has gained practical importance. The reduction of irrigated land resources per capita in the republic and the increase in demand for agricultural products have an impact on the need for agrochemical

services. Only 20.7% of the 20.2 million hectares of agricultural land is irrigated land. Over the past 15 years, irrigated land per capita has decreased by 24 percent (from 0.23 ha to 0.16 ha). According to forecasts, the irrigated land area may decrease by 20-25% over the next 30 years [21].

In order to eliminate these problems, it is necessary to develop agrochemical services, which are an important link of production intensification, involving innovative technologies in the agricultural sector. If an additional yield is obtained as a result of the rational use of mineral and organic fertilizers, the yield is maintained and the quality is improved due to the protection of plants from pests, diseases and weeds with the help of chemical (pesticides) and biological means.

Materials and methods. Today, the specific aspects of the development of agrochemical services are as follows:

- availability of agricultural enterprises of various forms and sizes, as well as their high number;
- that modernizing agricultural machinery based on smart technologies, instead of materially and morally outdated machinery, is the demand of the time;
- formation of free competition of agrochemical services through the purchase of mineral fertilizers and chemicals by various economic subjects in the commodity exchange trading system in the conditions of shortage of financial resources in agricultural enterprises;
- as a result of the diversification of agricultural crops, the demand for a number of new agrochemical services (chemical processing, biofertilizer delivery, etc.) in the field of fruit and vegetables and horticulture is increasing;

- coordination of activities of agricultural and agrochemical service enterprises.

Taking into account the above, in order to create an integrated system of providing agriculture with mineral fertilizers, chemical and biological means of plant protection, agrotechnical services for agricultural crops and to improve the quality of services for protection from pests and diseases, the President of the Republic of Uzbekistan dated October 24, 2016 "Protection of plants and Decision PR-2640 "On measures to improve the system of providing agrochemical services to agriculture" was adopted, and this decision became an important turning point for solving problems in the field. As a result, the Joint Stock Company "Agrokimyohimoya" was formed, and agrochemical services of plant nutrition and protection were integrated into a mutually integrated system [22].

The head of our state emphasized the problems of the sector and noted that the large-scale reforms implemented in the chemical industry are also giving positive results, but the systemic problems that have existed in the industry for many years have not yet been resolved. For example, the lack of financial resources of industrial enterprises producing mineral fertilizers. Lack of attention to the financing of agriculture or a superficial approach to the issue caused defects in the system of mutual settlements in this area [23].

The issues of conducting scientific research work and introducing the results into production, improving the skills of employees and providing laboratory services are neglected. Development of the chemical industry and ensuring competitiveness in the world markets, radical diversification of the industry is directly related to the potential of scientific research, design, engineering, diagnostic centers and qualified personnel.

In order to solve the existing problems in the provision of agrochemical services in the Republic in 2016-2017, the President of the Republic of Uzbekistan and industry officials at the meeting on December 28, 2017, dedicated to the "Financial and economic situation of chemical industry enterprises and issues of development of the industry" done. In this regard, since 2018, "Uzkimyosanoat" Joint Stock Company has started selling mineral fertilizers to consumers through stock exchanges. This change directly caused the transition of the agrochemical services market to a new format.

As a result of this reform, it was possible to form free competition for agricultural agrochemical service enterprises. Based on the needs of agricultural enterprises based on different ownership, agrochemical services companies are demanding that they act as "service providers" instead of "supplier" functions. Because the changes in the composition of services in the economic indicators of "Agrokmyohimoya" Joint Stock Company in recent years prove it.

In the last 10 years, the composition of the services provided by the "Agrochemical Protection" Joint Stock Company was studied. In 2016-2019, the types and volume of agrochemical services increased, and from 2020, a sharp decrease in the volume of agrochemical services is observed. The sharp decrease in demand for centralized agrochemical services was directly caused by the development of agroclusters and their establishment of agricultural infrastructure functions based on market mechanisms.

T.Sh.Shoghiyasov recommended regarding the selection of the factors affecting the economic activity of the enterprise into positive and negative factors, (internal) factors related to the enterprise's activity, unrelated (external) factors, intensive and extensive

factors of production, factors of production and transaction processes [24].

While researching and studying the activity of entities providing agrochemical services to agriculture, we believe that it is important to classify the factors affecting economic activity based on the signs of internal and external factors. Because the influence of external factors on the activity of agrochemical enterprises is strong, and internal factors determine its capabilities. The internal factors in the organizational direction include such factors as determining the demand for mineral fertilizers and chemicals, effective management and motivation of employees, improving the skills of employees, and forming a digital economy in the service sector. External factors include the implementation of government decisions and programs, the implementation of research results, the effective organization of the activities of dealerships and branches, the improvement of contractual relations, the holding of exchanges and fairs.

Internal economic factors include factors such as effective management of working capital and investments, increase in labor productivity, strengthening of the material and technical base of the enterprise, and external factors include state incentives (preferential credit, tax policy, grants, subsidies, leasing relations), discounts from suppliers. and the granting of bonuses, the introduction of futures contracts, the allocation of funds by investors, the organization of insurance in the service sector and other factors affect it. Also, the introduction of innovative technologies to improve the technologies of agrotechnical activities carried out in agricultural enterprises has a direct effect as an internal factor. Studies show that the introduction of cost-effective technologies as a result of the introduction of innovative technologies also affects similar



agrotechnical technologies. For example, in "Turtkul Agrotech Cluster" JSC, the results of providing agrochemical services have increased in the case of effective use of water resources in cotton fields.

The results of providing agrochemical services with efficient use of water resources on 1 hectare of cotton land in JSC "Turtkul Agrotech Cluster"

No	Naming	The measurement is the same	Quantity	Average price	Amount
1	Area where drip irrigation technology is introduced	to	1	25,000,000	25,000,000
2	Subsidy for introduction of drip irrigation technology	to	1	8,000,000	8,000,000
<b>THE DIFFERENCE</b>					<b>17,000,000</b>
<b>Productivity before introduction of drip irrigation technology</b>					
1	field	to	1.0	tons	2
2	amount of cotton	tons	1	6,500,000	13,000,000



3	water consumption tax	cubic meters	3 600	200	720,000
4	electricity consumption	kW.	5,500	450	2,475,000
5	land tax (varies by region)	to	1	13 461	13 461
6	salary expense	piece	2	1,500,000	3,000,000
7	agrotechnical service with fuels and lubricants	to	1	550,000	550,000
8	Mineral fertilizers				
	Nitrogenous	kg	300	3000	900,000
	Phosphorous	kg	100	3 500	350,000
	Potassium	kg	50	2500	125,000
8	<b>TOTAL profit 2-3-4-5-6-7-8</b>				<b>4,866,539</b>
<b>Productivity after introduction of drip irrigation technology</b>					



1	area (at the expense of 40 centners)	to	1	tons	4
2	amount of cotton	tons	1	6,500,00	26,000,00
3	water consumption tax	cubic meters	300	200	60,000
4	electricity consumption	kW.	1500	450	675,000
5	land tax (varies by territory)	to			
6	salary expense	piece	1	1,500,00	1,500,00
7	agrotechnical service with fuels and lubricants				
8	Mineral fertilizers				
	Nitrogenous	kg	150	3000	450,000
	Phosphorous	kg	70	3 500	245,000

	Potassium	kg	25	2500	62,500
8	<b>TOTAL profit 2-3-4-5-6-7-8</b>				<b>23,007,500</b>
	THE DIFFERENCE				18 140 961
	Cost of technology implementation				17,000,000
	Residual profit per year				1 140 961

Analyses show that as a result of the use of water-saving technology, the consumption of mineral fertilizers has decreased up to 2 times, that is, nitrogen fertilizers have decreased from 300 kg to 150 kg per hectare, phosphorus fertilizers from 100 kg to 70 kg, and potash fertilizers from 50 kg to 25 kg. At the same time, the increase of the average yield per hectare from 20 t/ha to 40 t/ha ensured a 4-fold increase in the efficiency of agrochemical services.

Therefore, in order to develop the provision of agrochemical services in the country, taking into account the specific aspects of agrochemical services, the priority tasks of the sector in the "Strategy for the Development of Agriculture of the Republic of Uzbekistan for 2020-2030", approved on the basis of the Decree of the President of the Republic of Uzbekistan No. PD-5853 of October 23, 2019 It is

desirable to effectively organize the specified tasks on a scientific basis.

### CONCLUSION

Taking into account the important aspects of the strategy, in order to systematically eliminate the problems identified as a result of scientific research, it is necessary to further implement the following tasks in the field of agrochemical services for agriculture:

- liberalization of prices by further improving the activities of the Commodity Exchange of the Republic of Uzbekistan for the sale of mineral fertilizers;
- formation of equal competition between participants in the market of agrochemical services;



- accelerate the process of digitalization of agrochemical services and ensure the transparency of economic relations;
- privatization of state enterprises in the field of supplying agricultural enterprises with mineral and organic fertilizers and agrochemical service and targeted orientation of state benefits;
- promote activities on the basis of futures contracts instead of providing resources and providing services through soft loans;
- further stimulation of the introduction of innovative technologies for the intensive development of the sphere of agrochemical services.

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