



## DEVELOPMENT STAGES AND PROSPECTS OF AGROCHEMICAL SERVICES IN AGRICULTURE

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### ABOUT ARTICLE

**Key words:** Agrochemical services, efficiency, infrastructure, factors, future contracts, innovative technologies.

**Abstract:** The article gives recommendations on the current state of agro-chemical services in agriculture, existing problems and causes affecting them, as well as proposals for the effective organization of agrochemical services.

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### INTRODUCTION

In the conditions of unstable economic relations in the world, the supply of fertilizers and plant protection products to agriculture is important in order to provide the population with food products in proportion. Because the effective use of fertilizers and chemicals is an important tool for increasing productivity in conditions of limited resources. Therefore, the demand for agrochemical services in agriculture is increasing. According to the FAO, "...fertilizer consumption is predicted to increase by 1.0% per year to 188 million tons in 2030". [1]

This, of course, is directly related to the availability of mechanisms to support the cultivation of environmentally friendly and natural products based on increasing the production of mineral fertilizers, improving the supply of plant protection products, increasing the share of plant protection based on organic fertilizers and biological products.

In the world, in the conditions of global climate change, scientific research has been carried out in such directions as increasing productivity and effective use of land resources due to the wide introduction of innovative technologies and developments in the field of agrochemical services. Also, the development of organic agriculture due to the wide introduction of innovative technologies (GIS technologies, remote sensing and remotely controlled devices) and developments in the provision of agrochemical services, reducing the impact of mineral fertilizers and chemical plant protection agents on people and nature, producing ecologically clean products, special attention is paid to scientific research aimed at solving problems such as increasing the efficiency of fertilizer use.

The amount of mobile phosphorus in 93% of the soils of irrigated areas in our country, the amount of exchangeable potassium in 68.3%, and the amount of humus (humus) in 79.3% have fallen below

average. Also, in our country, pests, diseases and weeds affect the destruction of 25-30 percent of the crop and their quality. Therefore, in the future, "...improving the system of agroservices based on science and innovation" was defined as an important task [2]

PF-60 of the President of the Republic of Uzbekistan dated January 28, 2022 "On the development strategy of New Uzbekistan for 2022-2026", PF-5853 of October 23, 2019 "On approval of the strategy of agricultural development of the Republic of Uzbekistan for 2020-2030", Decree No. PF-6262 of July 15, 2021 "On Measures to Fundamentally Improve the System of Plant Quarantine and Protection in the Republic" and Decision No. PQ-5185 of July 15, 2021 "On the Establishment of the Plant Quarantine and Protection Agency of the Republic of Uzbekistan" and there is a need to perform the tasks defined in other regulatory legal documents related to this activity.

Competitive agrochemical services, including chemical and biological processing, delivery of organic and mineral fertilizers to the field, their mapping based on scientifically based agrochemical cartograms, consulting services, and activities of service providers guaranteeing the quality of the harvest obtained due to the use of mineral fertilizers and chemical agents are being launched.

Agrochemical services are divided into plant nutrition and plant protection services. The plant nutrition service consists of direct chemical and organic fertilizer feeding services. Also, plant protection services consist of plant protection services with chemical and biological means.

Currently, the development of agrochemical services in agriculture is the presence of enterprises of various shapes and sizes in agriculture, their high number and the increasing role of large production entities (clusters) in the agricultural sector, the existence of a demand for modern agrochemical services in the conditions of the operation of various economic entities in agriculture, and intelligent in the context of the creation of the agricultural system, there was a need to coordinate the activities of agricultural enterprises and agrochemical service enterprises. Features of agrochemical services in agricultural development consist of 4 stages (Table 1).

**Table 1**  
**Characteristics of agrochemical services at the stages of agricultural development**

Steps	Naming of the stage	Features of agriculture	Characteristics of agrochemical services
Stage 1	The period of primitive development of agriculture	Early period, crop yield depends on wild variety and natural soil fertility	The lands are almost unfed, limited by the natural fertility of the land
Stage 2	The period of extensive development of agriculture	This is the period of using the initial technical and technological knowledge (irrigation facilities, fertilization, cultivation of varieties, development of new lands)	Use of minerals as fertilizers, use of plant protection products

Stage 3	The period of intensive development of agriculture	This period is the period when industry and production (new techniques and mechanisms, fertilizers, varieties and technologies) are developed.	Improving the quality of mineral fertilizers, using biological and chemical means in providing agrochemical services
Stage 4	The era of modern (sustainable) agricultural development	Development of organic agriculture, taking into account the preservation of the environment and natural resources, while obtaining more products in a shorter time under the conditions of limited resources.	Increasing organic fertilization by reducing the amount of mineral fertilizers, accelerating the use of biological means of plant protection, wide use of digital agricultural elements and innovative technologies

Until now, agrochemical enterprises have been operating as “suppliers”. Now the use of agrochemical services is required to present itself as a “service provider” based on the demand of various ownership-based economic forms.

In the conditions of modernization of agriculture, first of all, we will have to pay special attention to the development of service in agriculture. "First of all, it is necessary to consider the development of technical service, chemical service, veterinary, breeding, seed breeding, marketing, management, banking service, as well as information and consulting, training and upgrading of farmers’ service”. [3]

**CONCLUSION**

Today, in the development of agrochemical services, the following should be taken into account:

- increasing demand for a number of new agrochemical services (chemical processing, biohumus delivery) in the field of fruit and vegetables and horticulture as a result of diversification of agricultural crops;
- modernizing agricultural machinery on the basis of "smart" technologies, instead of materially and morally obsolete equipment, is the demand of the time;
- formation of free competition of agrochemical services through the purchase of mineral fertilizers and chemicals by economic entities.

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