

## STATISTICAL ASSESSMENT AND FORECASTING OF PROPORTIONALITY IN THE DEVELOPMENT OF AGRICULTURE AND THE NATIONAL ECONOMY

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### ABSTRACT

*The article gives an overview of statistical evaluation and prognostic programming in the development of agricultural and national economy of the ongoing reforms in Uzbekistan. The issues of liberalization of agrarian sector, creation of cluster system, formation of multi profile farms are considered.*

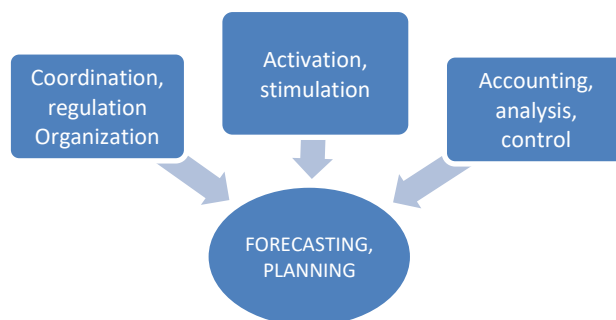
**KEYWORDS:** Agriculture, Reforms, National Economy, Development, Implementation.

### 1. INTRODUCTION

The process of state regulation of the economy includes the process of state regulation of the economy includes the implementation of many functions. They include forecasting and planning, organization, coordination and regulation, accounting, control and analysis, activation and stimulation (Fig. 1).

The functions of management always aimed at achieving the goals of management. Since the goal of management formed within the framework of “forecasting-planning” functions, it can be noted that these in the system of state regulation of the economy are central.

In modern conditions, forecasting takes on an unprecedented scale. Consciously or subconsciously, any person predicts the consequences of his actions, decisions, formulates a judgment about the future, and builds a model of the future. The role of forecasting is constantly increasing due to the acceleration of scientific and technological progress, increasing complexity of management tasks, increasing uncertainty. In the management of economic development, forecasting is the basis, because any managerial decision has a forecast or planning orientation. The forecast reveals the uncertainties in the system, justifies the factors under which the goals achieved.



**Fig. 1 Relationship of forecasting and planning with other management functions**

From the moment of the forecast (decision-making) until the end of the forecast period, the

environment changes, changes occur in various possible directions. Without defining the parameters of development with sufficient accuracy, the forecast reveals alternatives, positive and negative trends, contradictions and outlines the conditions under which the solution of the tasks set ensured. It may have several options depending on the probabilistic impact of various factors.

Socio-economic forecasting is a way of foreseeing a social system, taking into account the patterns of its development, the prospects for effective investment of capital. Socio-economic forecasts and plans express quantitative and qualitative changes associated with the assessment of production volumes, macroeconomic cost indicators, supply and demand, labor relations, and income and expenditure structure. They include indicators of the development of the macroeconomic situation, scientific and technological progress, the dynamics of production and consumption, the level and quality of life, foreign economic activity, the environmental situation, as well as education, healthcare and social security systems.

Agriculture in Uzbekistan is one of the leading sectors of the economy, providing more than 28% of the country's gross domestic product, almost 28% of employment and producing socially significant goods – food for the population and raw materials for industry. The prospects for development, the economic and financial condition of many industries of the republic, such as cotton ginning, textile, light, food, chemical industries and others, and this is about half of the entire industrial potential, directly depend on agriculture. Many researchers emphasize the importance of the development of this sector and its impact on socio-economic growth in general. Therefore, for example, FAO researchers concluded that growth in agriculture, more than in any other sector of the economy, could reduce poverty by playing the role of a multiplier. This report found that every percent of economic growth in the agricultural sector is equivalent to a 1.5% reduction in overall poverty rates.

In the context of the economic crisis and solving problems of food import substitution, the issues of strategic development of regions [1], increasing the role of regional economic policy are in demand and relevant. The directions of the strategic development of the regions based on the results of economic analysis, which makes it possible to give an adequate assessment of the socio-economic processes taking place in the region [2].

The expediency of the statistical approach in the study of agricultural production determined by the stochastic nature of the functioning of the industry, due to changing natural and climatic conditions, organizational, economic, financial and social factors. The use of statistical analysis methods makes it possible to identify the structural and dynamic features of the agricultural production of the region, adequately investigate production and technological relationships, and forecast the volume of production, which is in demand from the point of view of optimal management of the agricultural sector of the regional economy [3].

Statistical accounting of the volume of agricultural production is carried out by state statistics bodies for individual products in physical terms and for the industry as a whole in valuation in actual prices of the reporting year and comparable prices of the previous year as the sum of crop and livestock products produced by all categories of agricultural producers.

The organization of statistical observation of the volume of production in large and medium-sized agricultural organizations carried out by the method of continuous observation, in small forms of farming – based on sample surveys. The methodology of stratified sampling with proportional placement is used to form sampling populations of small enterprises and microenterprises, peasant (farm) households and individual entrepreneurs (KFH and IE) – the method of building single-target typical (stratified) samples with non-proportional placement,

personal subsidiary farms (PSP) – two-stage probability sampling model [2].

The development of agriculture is an important task for any region, but for the regions of Uzbekistan, it is also a strategic task within the framework of an innovative model of economic development, associated with the use of its main competitive advantage – fertile lands and the identification of integration reserves to improve the quality of agricultural products [2].

For example in the Surkhandarya region historically belongs to the number of regions of the Republic of Uzbekistan with a pronounced agricultural orientation. In 2019, with the volume of production in actual prices of 72.3 billion sums, the agriculture of the region produced 1.9% of the gross agricultural output of the Republic of Uzbekistan and 7.6% of the agricultural output of the central district. The share of the industry in the gross regional product in recent years has averaged 17% with the number of employed 246.5 thousand people. In crop production, grain crops, sugar beet and sunflower are cultivated, in animal husbandry they are engaged in the breeding of dairy and meat cattle, pigs, sheep and poultry. The main agricultural producers are 380 agricultural organizations, 275.9 thousand household plots, 2,491 peasant farms.

State support and investment in the industry are considered important factors determining the development of agriculture [4]. At present, the state program approved by the decree of the applicant of the Republic of Uzbekistan and the Oliy Majlis “On Approval of the State Program for the Development of Agriculture and Regulation of Agricultural Markets” is being implemented in the regions and state support from the state budget for the implementation of agriculture from 2020-2030.

In the structure of investments in fixed capital, the type of economic activity "Agriculture" in 2019 accounted for 25.6%, which is 5.2 p.p. more than the level of the previous year and exceeds the national average by 7.3 times. The volume of investments amounted to 17.3 billion soums, which is 1.5 times more than in 2017. In 2018, 28 major investment projects implemented in the region in the agricultural sector, 22 of them in livestock and 6 in crop production.

The analysis of the state of the regional economy based on the indicators of regional statistics, the classification of which can be based on the directions of providing information support for economic activity [1], institutional aspects of the functioning of territorial entities and economic entities, and sectoral features of the formation of the gross regional product.

Among the tools for analyzing the dynamics of agricultural production, which provide the identification of trend indicators in individual territories and allow for inter-regional dynamic comparisons, one can distinguish indices of the physical volume of agricultural production.

That is, large producers demonstrate higher growth rates, but they are the most vulnerable in circumstances of atypical weather conditions or unfavorable market conditions. This is mainly due to the low level of diversification of the production of agricultural organizations. Peasant (private) farms have somewhat lower rates of production growth compared to large agricultural producers, however, they characterized by a greater degree of mobility, therefore, and they show stable trend indicators.

For example, due to the pandemic, milk production in the last three years has stabilized at a volume of 221 thousand tons, which is still less than the level of previous years. Further increase the production of milk and dairy products in all categories of farms, a subprogram was adopted to stabilize and increase milk production in the regions for 2020-2030. A fundamentally new base for dairy cattle breeding is being created using promising

economically justified projects that will implement modern technological solutions for fodder, feeding, keeping, milking cows, reaching European level productivity [5,6].

The analysis of the influence of various factors on the formation of the volume of production is of great importance in the study of agricultural production. The dependence of agricultural output on the resource potential well studied in the economic literature. Economic systems are characterized by quantitative certainty of the interaction of phenomena and processes, which enables their mathematical optimization. The criterion for the completeness of the study of economic relations and dependencies should be considered their specific quantitative expression in the form of statistical and mathematical models.

In 2020, a COVID-19 pandemic was declared in the world. As part of measures to mitigate the negative impact on the economy of the corona virus pandemic and the global crisis, agricultural producers were provided with significant support. In particular, the tax rates for the use of water resources in terms of volumes used for irrigation of agricultural land were reduced by 50%, and the deadline for paying land tax for agricultural land was postponed from September 1 to December 1, 2020.



**Fig.2. Growth of agricultural production for 2017-2020, in % (2016=100%).**[Source: calculations based on data from the State Statistics Committee of the Republic of Uzbekistan].

Actual direction of statistical and economic analysis is forecasting the volume of agricultural production. It will allow respond more quickly to varying conditions of the food market, to improve the efficiency of industry management, to determine the priority areas of development for the next years. Positive trends in agricultural production, in regions of the Republic of Uzbekistan retained in difficult economic conditions during the pandemic, indicate good adaptive capacity due to the effective policy of state support of the industry and active investment activities. This is a prerequisite for the sustainable development of agriculture in the coming years, which confirmed by the results of statistical forecasting.

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