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THE OBJECTIVE NECESSITY AND SIGNIFICANCE OF DEVELOPING THE FRUIT AND VEGETABLE SECTOR IN THE CONDITIONS OF COMPETITION IN THE FOOD MARKET

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Annotation: This article thoroughly examines scientific and practical approaches to ensuring the competitiveness of agricultural products produced in our country. Special attention is given to the stable development of the agricultural sector, particularly the fruit and vegetable industry, the introduction of innovative technologies, the efficient use of limited land and water resources, increasing production volumes, and expanding export geography. The study also focuses on developing additional measures for consistent reforms, conducting systematic analysis, making optimal strategic decisions, and creating multi-variant models of sustainable economic growth.
Keywords:agriculture, food, fruit and vegetables, efficiency, international market, competitiveness, export, production, yield, cost price, land and water resources, effectiveness, profit, volume, approach, methodology, export geography.

Introduction

In an era of climate change, population growth, and globalization of the world economy, ensuring the safety and quality of ecological food has become a necessity. In this regard, the Presidential Decree of October 23, 2019, "On the Approval of the Strategy for the Development of Agriculture of the Republic of Uzbekistan for 2020-2030," outlines key priorities. These include the broad implementation of market principles in the purchase and sale of agricultural products, the development of quality control infrastructure, the promotion of exports, and the creation of a favorable agribusiness environment. The strategy also emphasizes the establishment of a value-added chain aimed at producing competitive, high-value agricultural and food products for targeted international markets[1].

Due to the negative trends observed in the agricultural and food markets, increasing competition places a priority on state authorities, higher education institutions, and research organizations to identify and assess long-term strategic measures for the development of agriculture, particularly in response to global climate change. Expanding scientific research and implementing effective innovations into practice have become one of the key tasks.

This is because the development of agricultural sectors, including the cultivation of fruits and vegetables with unique characteristics, is closely linked to factors such as natural and climatic conditions, biological and technological elements, labor organization and incentive methods, the seasonality of agronomic measures for crop care, production resources, the location of service facilities and entities in the sector, land categories, and interregional distribution.

Therefore, determining the prospects for the development of the fruit and vegetable sector requires a creative study and analysis of the scientific research results conducted by both foreign and local economists.

In particular, based on our analysis, the strategy for developing the fruit and vegetable sector includes the synergistic impact of the following five key interrelated and integrated

[1] Decree of the President of the Republic of Uzbekistan No. PF-5853 dated October 23, 2019, "On the Approval of the Strategy for the Development of Agriculture of the Republic of Uzbekistan for 2020-2030."

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directions:

- Accelerating economic growth,
- Reducing poverty,
- Ensuring gender equality,
- Achieving food security, and
- Ensuring environmental sustainability.

Considering the integrated synergistic impact of these key directions, it can be concluded that "forecasting changes in production volumes serves as a method for predicting and identifying changes in internal and external business activities, reducing uncertainties, and scientifically assessing risk levels occurring in the production process"[2].

If natural and climatic indicators are considered the main factors of uncertainty and risk in the agricultural sector, this not only affects the performance of agricultural producers but also impacts the overall national economy and the development of its other sectors. For this reason, the agro-industrial complex, including its core-agriculture-typically develops short-term (1–3 years), medium-term (4–5 years), and long-term (6–10 years) forecast parameters.

The variability and instability of natural and climatic conditions primarily influence the yield of agricultural crops, including the development of the fruit and vegetable sector, the formation of food reserves, and the development of other related industries. They also directly affect the volume of the agricultural products and raw materials market.

In particular, the simultaneous occurrence of negative impacts from natural and climatic factors and other influences can distort the accuracy of statistical data management and increase uncertainty in economic development forecasting.

However, in recent years, global climate change and the rapid growth of the world population have, in turn, led to changes in the balance of supply and demand in the global food market. As a result, there is an increasing focus on the intensive use of limited land and water resources, including the widespread implementation of greenhouses, genetic engineering, hydroponics, and transplantation methods in livestock farming. Due to these trends, the importance of scientifically forecasting global economic processes and changes in the food market has significantly increased.

Therefore, the theory and methodology of scientifically forecasting the prospective directions of agriculture and changes in the dynamics of food production must be improved in line with the requirements of modern information and communication tools and digital technologies.

"In particular, the consequences of the COVID-19 pandemic have substantiated the necessity of fundamental reforms in the sector and demonstrated that the production of consumer goods is not only economically but also socially significant"[3].

Not only for the overall development of society and the economy but also for improving forecasting methodologies in agricultural production, it is essential to select and apply methods

[2] Butakova M.M. Economic Forecasting: Methods and Practical Calculation Techniques. – M.: KNORUS, 2018. – 168 pages.

[3] FAO. 2020. Agri-Food Markets and Trade Policy During the COVID-19 Pandemic. Rome. https://doi.org/10.4060/ca8446ru FAO. 2020. Coronavirus and Potential Gaps in National Statistics: Reorganizing the Work of National Statistical Systems in Response to the COVID-19 Pandemic. Rome. https://doi.org/10.4060/ca8614ru. FAO. 2020. COVID-19 and Small Farmers' Access to Markets. Rome. https://doi.org/10.4060/ca8657ru. FAO. 2020. Adapting Business Models to Support Agri-Food Enterprises During the COVID-19 Pandemic. Rome. https://doi.org/10.4060/ca8996ru

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for analyzing several years of analytical data in accordance with specific goals and objectives.

In particular, forecasting agricultural production volumes is crucial not only for ensuring food security but also for maximizing the efficient use of processing enterprises' capacities. Additionally, it is important to systematize the methodology for forecasting the development of not only the agricultural sector as a whole but also its individual sub-sectors. This involves considering sector-specific conditions, the nature and purpose of production processes, and the methods that substantiate and reflect them in the following directions (Table 1.1).

According to I.F. Khitskov and his co-authors, within this system, a comprehensive approach to forecasting the future activities and development directions of agriculture is viewed as the interconnection of several processes, namely:

- Assessing potential threats,
- Identifying influencing factors and opportunities,
- Determining possible and appropriate areas of activity, and
- Increasing the adaptability to changes in the external environment.

Table 1.1

The System and Content of Methodological Approaches Used in Agricultural Forecasting[4]

№	Approach	Essence and content
1.	**Comprehensive**	It involves an analytical analysis of the complexity of agricultural production and its connection with processes occurring in other sectors.
2.	**Systemic**	The analysis of agricultural development is studied as a system consisting of elements that influence it.
3.	**Structural**	The forecasting process in agriculture is explained from the perspective of cause-effect and structural relationships.
4.	**Innovative**	It reflects the prediction of priority directions for the innovative development of agriculture and the application of effective forms of knowledge and skills dissemination.
5.	**Marketing**	It envisages the development of high value-added agricultural and food products based on the study of demand in external and internal markets.
6.	**Ecologic**	It justifies the need to develop a program of measures to effectively utilize and develop ecological factors in agricultural production at the state and regional levels.
7.	**Resources**	It reflects the forecasting of the rational use of natural-economic, production, and labor resources.
8.	**Social**	It is aimed at ensuring food security, improving the consumption ratio, increasing employment in rural areas, and expanding income sources.

Based on the analysis of the above methodological approaches, it should be particularly emphasized that today, in the agricultural sector of the republic, the main focus is on improving property ownership and economic management structures, fully transitioning agricultural production to the private sector, abolishing state orders, developing infrastructure and service

[4] Developed by the author based on the generalization of scientific sources in the research work.

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industries, shifting from raw material production to the manufacturing of finished consumer goods, and enabling producers to independently market and export their products through appropriate sales channels or commodity exchanges.

As a result, broad opportunities are being created for producers to directly access food markets and other consumer outlets without intermediaries. To ensure that most producers can simultaneously adapt to both domestic and international market conditions, it is essential to consider that "accelerating innovation processes should be regarded as an effective tool for addressing production, economic, and social challenges in the agricultural sector of the national economy[5]".

Thus, a systematic approach that scientifically and methodologically substantiates the importance of determining the development prospects of the fruit and vegetable sector requires the correct selection of quantitative and qualitative indicators of probabilistic processes in this field. This approach is viewed as a system consisting of several interrelated elements and components.

In particular, this system is expressed through a combination of the following elements, which reflect the means and essence of a specific process: hypotheses, concepts, strategies, programs, and others.

"The starting point of these combinations is the analysis of agricultural development trends and laws." In this regard, it is possible to present active intervention options that include mandatory decision-making and accountability measures when plans and programs must be implemented within a specified timeframe, involving specific executors.

Thus, determining the future production volume primarily involves explaining the development of the **fruit and vegetable sector** in relation to its unique characteristics, patterns, and natural-climatic factors. These aspects must be scientifically forecasted, considering the changes in the production activity of the specific research object (Figure 1.1).

Thus, in any sector (field), as well as in the dialectics and foundations of changes in a particular process or condition, new trends emerge over time, influencing the interconnection and impact of factors. These trends shape a system of measures that align with the interests of society and economic entities, helping to mitigate negative factors and comprehensively consider both positive and negative aspects in future planning. Conducting systematic scientific research in this area is of great significance.

Additionally, when developing programs for the development of an object, the primary goal is to identify the impact of positive trends and factors while minimizing the effects of negative conditions. This requires a comprehensive analysis of the current state of the object, identifying existing barriers, and implementing measures to eliminate them, thereby ensuring the subject's effective functioning.

Analyzing and defining the forecasting of production volumes and the development of the fruit and vegetable sector plays a crucial role, as this approach reflects the interconnection of influencing factors in the studied process. It also considers the socio-economic and structural-organizational changes in the development of agriculture across different regions.

[5] Samatov G., Rustamova I. Improving Institutional Mechanisms for Effective Management of Innovative Activities in the Agrarian Sector. Materials of the 10th Forum of Economists. Edited by Doctor of Economics, Professor Akhmedov T.M. Tashkent: IFMR, 2018. – 240 pages.

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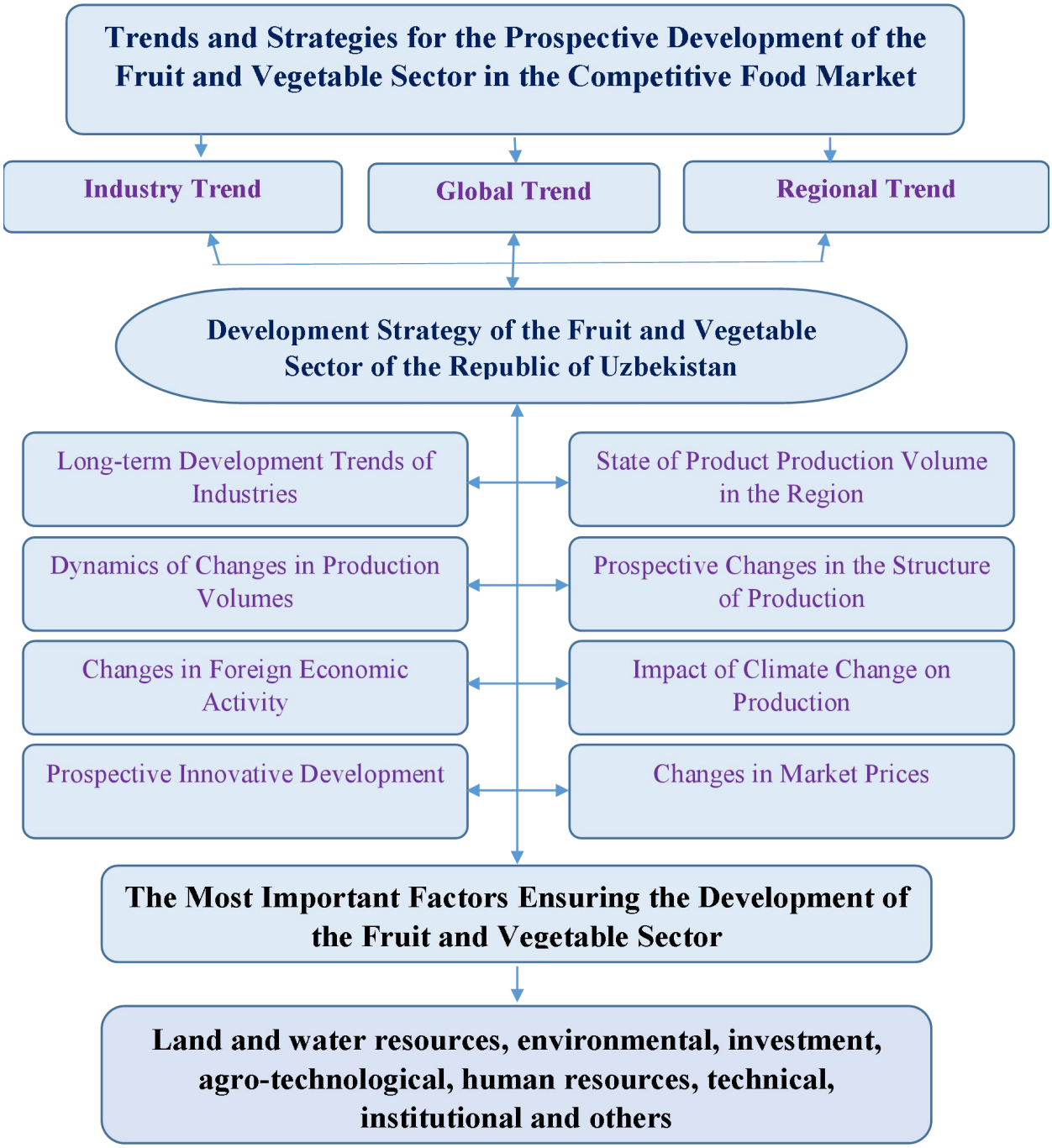

Figure 1.1. The System of Prospective Directions for the Development of the Fruit and Vegetable Sector[6].

Indeed, "the scientific forecasting of the development of the fruit and vegetable sector in the region considers expected economic events, namely, the development trends of productive forces, production relations, their interrelations, and the assessment of anticipated outcomes. These factors manifest in the dynamics of production, distribution, exchange, and consumption

[6] Author's development.

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volumes and structures. Agricultural reforms influence the restructuring of motives and interests, changes in production and distribution relations, and impact market capacity."

This approach is explained as follows in the process of accurately assessing agricultural production activities:

a) The interconnection between productive forces and production relations in the development of the fruit and vegetable sector in a region is based on changes in their equilibrium. Furthermore, the level of productive forces determines the dynamics of agricultural development.

b) Changes in and interactions between productive forces affect the volume and composition of agricultural products. This, in turn, serves as the basis for determining the alignment of forecasting results with existing conditions. Taking these factors into account, the scientific forecasting of the regional development of the fruit and vegetable sector should be reflected in industry development programs, considering aspects such as ensuring the population's supply of essential food products, export channels for goods and services to foreign markets, quantitative and qualitative product indicators, and cost-based marketing strategies (see Table 1.2).

The application of the most effective marketing methods in determining the development prospects of the fruit and vegetable sector helps establish a rational balance between product production and demand. It also creates an appropriate information base on optimal coordination between crop and livestock farming for a specific region, their placement and specialization according to the natural-climatic and soil conditions of each region. Through this, it plays a crucial role in the development of prospective industry development programs.

Table 1.2.

The Marketing Approach in Defining the Scientifically-Based Prospects for the Development of the Fruit and Vegetable Sector[7]

№	Direction	Context
1.	Considering the development of the fruit and vegetable products market	Considering the price dynamics of fruit and vegetable products, raw materials, production, and other resources in the markets, as well as institutional changes.
2.	Determining the production volume of products	Identifying the demand for fruit and vegetable products in domestic and international markets, taking into account the indicators of targeted programs aimed at industry development and supported by the state.
3.	Taking into account the demand for products	Studying demographic conditions, household incomes, changes in the consumer basket, the composition of family expenditures, and consumer preferences in domestic and international markets, among other factors.
4.	Introducing new products to the market	Diversifying the fruit and vegetable sector and farms in line with market demands, determining product volumes and consumption markets.
5.	Capturing new market segments	Exploring new market segments in terms of fruit and vegetable varieties, considering the demands of new domestic and international markets, among other

[7] Developed by the author based on the generalization of scientific sources.

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		aspects.

Based on these data sources, when forecasting the population's demand for food products, it is essential to first analyze the changes in locally produced and imported products that meet the needs of the local population. Additionally, it is necessary to determine the share of products retained within the region and compare it with the share of products exported to foreign markets.

To determine the level of food supply for the population and calculate the food security index, the following formula is used:

$$K_0 = \left[\left(\frac{S_i^t \pm V_i^t}{\Pi^t}\right)\right] N_i^t, \qquad \textbf{(1.1)}$$

here: K_0 – security index;

S_i^t – production volume, i – the type of agricultural product (excluding imports and consumption reserves), t – the period;

V_i^t – t – during the production period, in tons;

Π^t – region's average annual population for period t, in persons;

N_i^t – rational consumption level of product i, in kilograms

Based on Formula 1.1, the level of food security can be determined at the national or regional level. If the index is equal to 1, it indicates that food security is ensured. An index higher than 1 means that there is a surplus of food products beyond local consumption, while an index lower than 1 indicates a food shortage.

The competitiveness of agricultural products exported by producers largely depends on their ability to strengthen their position in global food markets by achieving competitive advantages over similar products. Various factors determine the competitiveness of agricultural products in global food markets, including: quality indicators; product price and cost; nutritional value, taste, and consumer properties; design and packaging; pre-sales and after-sales service; market segmentation of the product; marketing, advertising, and the development of information and communication systems; warranty provisions and guarantee periods; timely availability of the product in the competitive market; the socio-economic and political situation in the country or region.

Export diversification, which refers to expanding the range of goods (or services) sold in foreign markets, prevents an excessive increase in the share of specific products (especially raw materials) or certain services in total exports. It also broadens the geographical scope of exporting countries, ensuring stable export growth and reducing the vulnerability of the national economy to adverse changes in external markets. Trade turnover diversification reflects the expansion of both the range of exported and imported goods (services) and the number of partner countries. From this perspective, the main strategic task is to calculate forecasted indicators, integrate them into statistical databases, and use them purposefully for decision-making. This enables the comparison of the movement trajectories of agricultural and industrial products and plays a crucial role in developing long-term development scenarios and strategies. By analyzing future changes in factors influencing development, alternative (scenario-based) forecasting approaches can be developed, allowing for optimal decision-making.

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Forecasting based on intuitive knowledge is generally less reliable than empirical forecasting built on scientific knowledge, experience, case studies, random observations, and proposals. Therefore, forecasting scenarios must be reliable and adaptable, considering multiple possible situations. The forecasting model should not only follow trends and patterns but also closely approximate reality and be based on principles of adequacy and adaptability. Thus, forecasts should be continuously updated, and long-term planning, project development, and management should be integrated with sectoral, regional, and economic development programs. The task of scientifically grounded forecasting is to anticipate the causes, progression, and socio-economic consequences of problems and contradictions arising in regional farming and to identify possible solutions in advance.

Overall, the primary content and goal of methodological approaches should focus on ensuring the development of society, the state, sectors, and agricultural enterprises in alignment with market principles, mechanisms, and competition. These approaches are also significant in fostering the ability of producers to influence competitive processes by considering supply and demand for goods and services. The market economic system's distinctive features are logically expressed through the increasing independence of producers in terms of ownership forms and business practices. Accepting scientifically based principles meets these requirements, ensuring the validity and accuracy of proposed forecasts. This enables a scientific justification of potential directions for the activity of forecasted entities and an evaluation of current economic policies.

The solution to this issue and its relevance are closely linked to the urgent need to address the most complex tasks related to food security, improving the supply and quality of food products for the population, stabilizing production volumes, and increasing the competitiveness of local agricultural (fruit and vegetable) products through new innovations in a short period.

This, in turn, aligns with Uzbekistan's Sustainable Development Goals (SDGs), including: eradicating hunger, reducing poverty, ensuring food security, and, achieving sustainable development in the agricultural sector.

In conclusion, research findings indicate that the current management methods used in agriculture do not fully meet existing demand requirements. Therefore, it is necessary to improve and implement them in line with strategic objectives and mechanisms. These improvements will not only enhance the efficiency of fruit and vegetable production but also strengthen labor motivation and incentives, as well as boost the competitiveness of production and exports.