

INNOVATION SCIENCE AND TECHNOLOGY



Scopus || Electronic journal specializing in Scopus

ISSUE 3

 Acceptance of papers **March, 2026**



**Acceptance of
papers**

Published monthly



Topics

economics,
technology, social
sciences

0100100110
011101010010

**EDITOR-IN-CHIEF:**

Mirzaliyev Sanjar Makhmatjon ugli

DEPUTY EDITOR-IN-CHIEF:

Makhmudov Nosir Makhmudovich
DSc., Prof., Academician

DEPUTY EDITOR-IN-CHIEF:

Ochilov Bobur Bakhtiyor ugli – Senior
lecturer at TSUI

THE SCIENTIFIC-POPULAR ELECTRONIC
JOURNAL **"INNOVATION SCIENCE AND
TECHNOLOGY"** HAS BEEN REGISTERED
UNDER THE NUMBER **C-5669633** BY THE
AGENCY FOR INFORMATION AND MASS
COMMUNICATIONS (AOKA) OF THE
REPUBLIC OF UZBEKISTAN, EFFECTIVE
FROM OCTOBER 9, 2024.

CONTACTS

Phone: **+998 50 737 87 88**

Website: <https://ist-journal.uz>

Email: innovationist2025@gmail.com

The scientific electronic journal "Innovation Science and Technology" has been included in the list of scientific publications recommended for the publication of main scientific results of dissertations for the award of PhD and DSc degrees in economics and technical sciences, in accordance with the Resolution No. 370 of the Presidium of the Higher Attestation Commission of the Republic of Uzbekistan, dated May 8, 2025.

Editorial board:

Sharipov Kongiratbay Avezimbetovich,
Doctor of Technical Sciences (DSc), Professor



Abdurakhmanova Gulnora Kalandarovna, Doctor of
Economic Sciences (DSc), Professor



Cham Tat Huei,
Doctor of Philosophy (PhD), Professor (Malaysia)



Muhammad Imran Sadiq
Doctor of Philosophy in Economics (PhD), Professor,
Malaysia



Ahmed Aziz Ismail
Doctor of Technical Sciences (DSc),
Professor (Egypt)



Lee Chin
Doctor of Philosophy in Economics (PhD), (Malaysia)



Asongu Simplice
Doctor of Philosophy in Economics (PhD), Cameroon



Rui Dang
Doctor of Chemistry (DSc), Professor, China



Zahoor Ahmed
Doctor of Philosophy in Economics (PhD), Turkey



Shujaat Abbas
Doctor of Philosophy in Economics (PhD), Russia



Tina A Coffelt
Doctor of Philosophy in Educational Sciences (PhD),
USA



Abdikarimova Dinara Rustamxanovna
Doctor of Economic Sciences (DSc), Professor

Kurbonbekova Mohichehra Turobjonovna
Doctor of Economic Sciences (DSc), Professor

Alimardonov Ilkhom Muzrabshokovich
Doctor of Economic Sciences (DSc), Professor



Razakova Barno Sayfieva
Doctor of Philosophy in Economics (PhD)



Khasanov Sarvar Ulugbek ugli
Doctor of Philosophy in Economics (PhD)



Kholikova Rukhsora Sanjarovna
Associate Professor (PhD)

CONTENTS

FINANCING OF SMALL BUSINESSES THROUGH INVESTMENT LOANS BY COMMERCIAL BANKS.....	15
Yangiboyev F.B.	
INTEGRATION OF THE TRANSPORT SECTOR INTO THE GREEN ECONOMY AND IMPACT ON SUSTAINABLE DEVELOPMENT: ECOLOGICAL TRANSFORMATION AND INNOVATIVE SOLUTIONS	20
Narziyev Umidjon Bakhriylayevich	
FOREIGN EXPERIENCE IN INCREASING THE INVESTMENT ACTIVITY OF JOINT-STOCK COMPANIES	24
Begamov. S.X.	
AN ENHANCED FINANCING MODEL FOR STARTUP PROJECTS IN HIGHER EDUCATION INSTITUTIONS OF UZBEKISTAN	27
Kasimova Nargiza Sabitdjanovna	
STRATEGIES FOR ENHANCING INVESTMENT POTENTIAL.....	32
Tillayeva Barno Ramiziddinova	
THE IMPORTANCE OF USING ARTIFICIAL INTELLIGENCE IN HOTEL MANAGEMENT.....	36
Husenova Madina Farkhodovna	
MARKETPLACES AND ECONOMIC SECURITY IN UZBEKISTAN: RISKS AND REGULATION	42
Umarkhodjayeva Zaynabkhon Nodirkhonovna	
TECHNOLOGICAL STRENGTH AND PROPERTIES OF METAL OF AUSTENITIC JOINTS DURING WELDING WITH VARIOUS FLUXES.....	47
Khudoykulov Nurilla Zikirillaevich, Khudoyorov Sardor Sadullaevich	
MODERN SYSTEMS OF PRODUCT COST CALCULATION: METHODOLOGICAL FOUNDATIONS AND DIRECTIONS OF PRACTICAL TRANSFORMATION	51
Abdumalik Abdiraximovich Tulyaganov	
SUPPORTING ECONOMIC EXPANSION AND MAXIMIZING PRODUCTION EFFICIENCY WITHIN A MARKET ECONOMY.....	56
Aytmuratov Qutlimurat Jalgasovich	
SUCCESS FACTORS OF DIFFERENTIATION STRATEGY IN A MARKET ECONOMY.....	62
Sodiqov Miraxror Abbos ugli	
THE “MISSING MIDDLE” PROBLEM IN SOCIAL PROTECTION SYSTEMS AND MECHANISMS FOR ADDRESSING IT	67
Farrukh Juraqulovich Bafoev	
IMPROVING POPULATION INVESTMENT ACTIVITY THROUGH THE DEVELOPMENT OF BANK BROKERAGE SERVICES AND FINANCIAL LITERACY IN FORMING A SECURITIES PORTFOLIO IN THE KHOREZM REGION	72
Bakhtiyorov Khudaybergan Hamdam ugli	
DEVELOPMENT OF THE SERVICE SECTOR AND ITS IMPACT ON POVERTY REDUCTION.....	79
Dauletmuratov Adilbay Mirzabaeovich	
THE ROLE AND IMPORTANCE OF A SYNERGETIC APPROACH IN DEVELOPING THE MANAGEMENT SKILLS OF SCHOOL DIRECTORS.....	84
Yusupova Dilnoza Fayzullayevna	
REGIONAL INNOVATION DEVELOPMENT INDICATORS AND THEIR EVALUATION SYSTEM	89
Xamrayev Quvvat Iskandarovich	
GADGETS AND VALUES: HOW DOES THE VIRTUAL WORLD IMPACT THE EDUCATION OF YOUTH?	97
Makhmudova Sohiba Ravshan kizi, Mirzaliyev Sanjar Makhamatjon ugli	
WAYS TO IMPROVE SERVICE QUALITY AND SAFETY IN THE HOSPITALITY INDUSTRY THROUGH DIGITAL TECHNOLOGIES.....	101
Musayeva Shoirazimovna	
DIRECTIONS FOR INCREASING HOUSEHOLD INCOMES BASED ON FOREIGN EXPERIENCE.....	104
Eshbaeva Shahnoza Faxriddinova	

IMPROVING METHODS FOR DETECTING FRAUD CASES IN CURRENT ASSET AUDITS.....	108
Mavlyanova Dilobar Makhkamovna	
GLOBAL TRENDS IN WORLD MARKETS AND THEIR IMPACT ON THE DEVELOPMENT OF INTERNATIONAL TRADE	113
Meliqulov Abdulhalil Norinovich	
THEORETICAL ASPECTS OF FORMING AND APPLYING THE INTEGRATION MECHANISM OF SMALL BUSINESS	119
Rustambek Ibragimovich Israilov	
THE IMPORTANCE OF USING PERFORMANCE INDICATORS IN IMPROVING ROAD MANAGEMENT METHODS.....	125
Sirojiddin Yadgarov	
WAYS TO IMPROVE BANKING EFFICIENCY IN THE CONDITIONS OF TRANSFORMATION.....	131
Babakhanova Dildora Rustamovna	
THE ROLE OF PROGRAM-BASED BUDGETING MECHANISMS IN ENSURING STATE FINANCIAL SECURITY	137
Abduganiyev Uchkun Khabibulla ugli	
ANALYSIS OF THE IMPACT OF PUBLIC FINANCIAL MANAGEMENT EFFICIENCY ON SOCIAL JUSTICE THROUGH PEFA AND CEQ METHODOLOGIES.....	143
Zokirjonov Muhammadsodiq Ravshanbek ugli	
MANAGERIAL MECHANISMS OF CORPORATE HYBRID BUSINESS MODELS: FINTECH INTEGRATION IN E-PAYMENT SYSTEMS OF UZBEKISTAN	151
Mokhirakhon Abdullaeva	
TOKENIZATION OF REAL SECTOR ASSETS AND DEEPENING OF CAPITAL MARKETS: A NEW FINANCIAL ARCHITECTURE FOR EMERGING ECONOMIES	156
Oybek Qo'shboqov	
TECHNOLOGIES OF ARTIFICIAL INTELLIGENCE IN OPTICAL COMMUNICATION AND THEIR INTEGRATION INTO INTELLIGENT TUTORING SYSTEMS.....	162
Maxamadov Rustam Xabibullayevich, Djamatov Mustafa Xatamovich	
APPROACHES TO ENHANCING THE EFFECTIVENESS OF GOVERNMENT SUPPORT FOR SMALL BUSINESSES IN THE REGION	169
Madraimova Marxamat Raximberganovna	
INNOVATIVE WAYS TO INCREASE THE INVESTMENT CAPACITY OF REGIONS BASED ON DIGITAL TECHNOLOGIES.....	174
Qabilov Anvar Eshpulatovich	
TAXATION OF AGRICULTURAL ENTERPRISES AND THE ORGANIZATION OF THEIR ACCOUNTING SYSTEMS.....	179
Abdullayev Abdurauf	
DEVELOPMENT PROSPECTS OF THE VEGETABLE FARMING SECTOR IN THE REPUBLIC OF UZBEKISTAN	183
Sobir Xasanov	

DEVELOPMENT PROSPECTS OF THE VEGETABLE FARMING SECTOR IN THE REPUBLIC OF UZBEKISTAN

Sobir Xasanov

Doctor of Philosophy (PhD) in Economics

Abstract: In recent years, systematic measures have been implemented in the Republic of Uzbekistan to reform the vegetable farming sector, introduce resource-saving technologies, and provide agricultural producers with modern machinery. As a result, by 2030, it is planned to increase the annual growth rate of value added in agriculture to 5%, expand agricultural and food exports to 20 billion US dollars, and raise labor productivity in agriculture per worker from the current USD 3,960 to USD 6,500 per year.

This article substantiates the priority directions for the sustainable development of the vegetable farming sector under conditions of a free market economy, based on the example of enterprises with various forms of management. It highlights the economic significance of modern intensive methods in the development of vegetable production and examines the mechanisms for applying state economic incentives in the development of the sector. Additionally, recommendations are proposed for further development through the expansion of cooperative relations, and forecast indicators for the gross output value of the vegetable sector up to 2030 are developed.

Key words: vegetable farming, resource-saving technologies, annual growth, value added, export, intensive methods, economic incentives, policy instruments, competition, crop varieties, economic measures, digital economy.

INTRODUCTION

Vegetable production and consumption have been steadily increasing worldwide in recent years. This trend is primarily driven by the fact that vegetable products serve as an essential source of vitamins, minerals, and phytoncides necessary for the human body. According to forecasts by the Food and Agriculture Organization of the United Nations (FAO), global food consumption is expected to increase by an average of 1.3% annually by 2032. Within the framework of a healthy diet, the share of vegetable products is also projected to grow further.

In the context of intensifying competition in the global food market, reducing the volume of imported vegetable products and ensuring domestic demand through internal production capacities has become one of the key strategic priorities for the country. Therefore, in recent years, significant organizational, legal, and economic measures have been implemented, including the expansion of vegetable cultivation areas due to the reduction of cotton fields, as well as the introduction of high-yield and export-oriented vegetable varieties.

At the same time, despite the steady growth in vegetable production, certain types of vegetable products continue to be imported. This situation highlights the importance of further improving post-harvest processes. In particular, approximately 30% of domestically produced vegetables are subject to losses during harvesting, transportation, and storage. Addressing these challenges through the adoption of modern agro-technologies, the use of high-yield and early-maturing varieties, increased mechanization of production, and the introduction of resource-efficient storage and processing technologies will significantly enhance overall efficiency and reduce costs.

It is important to note that issues related to the sustainable development of the vegetable sector—such as organizational-structural, institutional, and socio-economic transformations—require deeper scientific and practical analysis. In particular, areas such as digitalization of the economy, transition to a green economy, and the implementation of innovative technologies remain promising directions for further research. The need

to develop effective solutions to these challenges and to consistently apply them in improving the efficiency, quality, and competitiveness of vegetable products has determined the relevance of this research topic.

LITERATURE REVIEW

In the process of production modernization, forecasting the vegetable production system, increasing future yields, and predicting the growth dynamics of production volumes are among the most relevant scientific and practical tasks of the present time. It should be emphasized that the development of the vegetable sector depends on multiple factors; therefore, the application of mathematical modeling methods, alongside effective economic analysis tools, enables a more accurate and reliable assessment of sectoral development dynamics.

At present, there is a growing need to strengthen long-term confidence in land use among farmers and agricultural clusters. Analytical observations indicate that approximately 7,000 farmers have been managing land plots for an average period of about one and a half years [9, p. 137]. This situation highlights the importance of further improving land tenure mechanisms. Ensuring longer-term land use arrangements would enhance farmers' sense of ownership and encourage them to invest in soil fertility improvement, the adoption of intensive vegetable farming practices, and overall productivity growth.

The Republic of Uzbekistan, particularly the Tashkent region, has significant potential to expand joint ventures with foreign capital participation for the sustainable development of the vegetable sector. This, in turn, contributes to the creation of new jobs, the introduction of modern digital technologies, and the expansion of both fresh and processed vegetable production that meets international standards in global markets.

At the same time, improving product quality and diversification in line with international market requirements remains an important direction for further development. For instance, in the Tashkent region, more than 1.1 million tons of vegetables are produced annually; however, only slightly over 15.2% of this volume is exported, indicating opportunities for enhancing export potential [9, p. 137].

Analyses show that domestically produced vegetables are well-recognized and widely consumed in markets such as Russia and Central Asian countries. Expanding access to more distant foreign markets requires addressing several important factors, including compliance with international standards (e.g., European quality and safety requirements regarding chemical content) and strengthening competitiveness in markets where major suppliers such as Turkey, China, and other large producers are already active.

The issues outlined above also underscore the importance of selecting effective partnership models with foreign companies that are capable of providing reliable guarantees for exporting vegetable products to international markets.

The Russian market, which is one of the largest consumers for Uzbekistan, demonstrates increasing demand not only for traditional vegetables but also for those that are either not cultivated or are costly to produce within the Russian Federation. Currently, more than 17% of the Russian vegetable market is occupied by Turkey, while the remaining share is distributed among producers from Egypt, China, Uzbekistan, South Africa, Belarus, Moldova, and Israel [10].

An analysis of the geography of agricultural exports formed in recent years shows that Russia ranks first in Uzbekistan's fruit and vegetable exports with a share of 37.6%. It is followed by Pakistan (16.5%), China (12.7%), and Kazakhstan (10.4%). The total export volume amounted to 1.6 million tons (over USD 1.0 billion), which is 1.4% higher in 2024 compared to 2023 [11]. These trends indicate the importance of further expanding trade relations with neighboring and foreign countries and adapting to their market requirements.

The effective resolution of the above-mentioned issues can be achieved through the consistent implementation of targeted measures and the development of intensive vegetable farming in the country. This approach will contribute to increasing export potential, as well as improving the efficiency of using available land, water, and labor resources, scientific and intellectual capacity, long-established agricultural traditions, and the favorable natural and climatic conditions of the republic for vegetable production.

In the scientific literature, various approaches and methods are applied to forecast production volumes, yields, and market conditions. In particular, according to R.F. Djumanova, there are more than 130 forecasting methods used in practice, which can be broadly classified into three main groups in the context of socio-economic forecasting: extrapolation methods, expert evaluation methods, and modeling approaches [12, p. 15].

RESEARCH METHODOLOGY

This study employs quantitative and econometric methods to analyze the development of the vegetable farming sector in Uzbekistan. A multiple regression model is applied to examine the relationship between gross output and key factors, including cultivated area, fertilizer costs, and yield levels. The least squares method is

- Y – gross output value;
 X₁ – cost of mineral fertilizers applied (in UZS);
 X₂ – vegetable cultivation area (in hectares);
 X₃ – average yield (centners per hectare).

Based on the values of the factors presented in the table above, a correlation matrix of pairwise correlation coefficients was constructed to illustrate the relationship between the dependent variable and the explanatory variables for vegetable production. The correlation coefficients between the variables were calculated using the programming capabilities of the MATLAB system.

In this analysis, key factors influencing the gross output value—such as the cost of mineral fertilizers, cultivated area, and average yield—were taken into account (Table 2).

Table 2. Matrix of pairwise correlation coefficients reflecting the relationships between factors influencing the gross output value in vegetable production³

	Y	X ₁	X ₂	X ₃
Y	1.0000			
X ₁	0.9406	1.0000		
X ₂	-0.3511	-0.0838	1.0000	
X ₃	-0.4338	-0.2206	0.5706	1.0000

To carry out the forecasting process under consideration, we first examine the following multiple regression model.

$$y_i = \alpha_0 + \alpha_1 x_{1i} + \alpha_2 x_{2i} + \alpha_3 x_{3i} \quad (4)$$

The analysis of the correlation matrix among the selected factors allows for examining the variation in correlation coefficients and their relationships. It should be noted that partial correlation coefficients are used to determine the nature and strength of the relationships between the dependent variable—gross output value of vegetable production (Y)—and the selected explanatory variables (X₁, X₂, X₃).

The data presented in the table indicate a strong positive relationship between the gross output value (Y) and the cost of mineral fertilizers (X₁), with a correlation coefficient of 0.9406. A moderate negative relationship is observed between the gross output value (Y) and the average yield of vegetables (X₃), with a coefficient of -0.4338. Meanwhile, the relationship between the gross output value (Y) and the cultivated area (X₂) is relatively weak, as indicated by a coefficient of -0.3511.

The pairwise correlation coefficients among the explanatory variables (i.e., X₁ and X₂, X₁ and X₃, X₂ and X₃) are presented in Table 2.

As can be seen from the table, the relationship between the cost of mineral fertilizers (X₁) and the average yield (X₃) is very weak (-0.0838). Similarly, the relationship between fertilizer costs (X₁) and the cultivated area (X₂) is also weak (-0.2206). At the same time, a moderate positive relationship is observed between the average yield (X₃) and the cultivated area (X₂), with a coefficient of 0.5706.

Overall, the selected factors demonstrate varying degrees of interdependence, indicating the presence of both direct and indirect relationships within the vegetable production system. This suggests that a comprehensive econometric approach is appropriate for capturing the complexity of these interactions.

The graphical representation of the actual and model-estimated values of gross vegetable production, calculated based on model (3.5), is presented in Figure 1.

³ Calculated based on the author's scientific research.

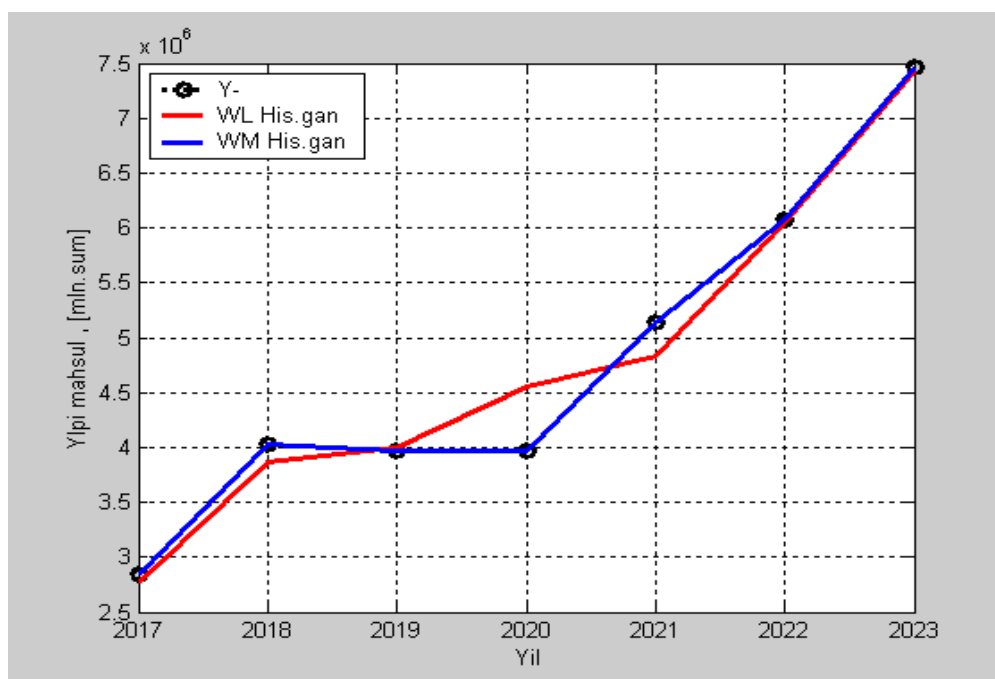


Figure 1. Graph of actual and model-estimated values of gross vegetable production in the Tashkent region based on model (3.5)⁴

To determine the overall goodness-of-fit of a multiple linear regression econometric model, the coefficient of determination (R^2) can be calculated using the following formula:

$$R^2 = 1 - \frac{\sum_{i=1}^n (y_i - \hat{y}_i)^2}{\sum_{i=1}^n (y_i - \bar{y})^2} \quad (6)$$

$\hat{y}$ – expected (predicted) value of the dependent variable;

$\bar{y}$ – arithmetic mean of the dependent variable;

$\hat{y}_i$ – estimated (predicted, fitted) values of the dependent variable;

n – number of observations.

In general, the results obtained based on the constructed econometric model indicate that the calculated value of the Fisher F-statistic for analyzing the factors influencing the gross output value in vegetable production is $F_{calc} = 30.415$. Furthermore, with degrees of freedom of $\gamma_1 = 3$ (numerator) and $\gamma_2 = 7 - 3 - 1 = 3$ (denominator), the critical value of the Fisher criterion at a significance level corresponding to $p = 0.98$ is $F_{crit} = 6.59$.

Since the calculated value ($F_{calc} = 30.415$) significantly exceeds the critical value ($F_{crit} = 6.59$), the proposed multiple regression model is statistically significant and adequate. Therefore, it can be effectively used for forecasting the gross output value of vegetable production across different crop types, as well as for predicting future trends in the sector (Table 3)⁵.

Table 3. Criteria for assessing the quality and significance of a multiple econometric model⁶

M/t	n	F_p	F_t	R_m	ϵ_c	u	r_a	K_N	$F_p > F_t^7$
lines	7	30.145	6.59	0.982	4.143	0.027	0.496	0.416	Completed

4 Developed by the author.

5 U.X.Beglaev. Baliqchilik xo'jaliklarini barqaror rivojlantirishni iqtisodiy dastaklar orqali qo'llab-quvvatlash mexanizmini takomillashtirish. "Yoshlar huquqlari: imkoniyatlar va himoya qilish mexanizmlari" respublika ilmiy-amaliy anjumani 2024-yil 26-mart. <https://doi.org/10.5281/zenodo.10871322>.

6 Calculated based on the author's scientific research.

7 Condition is satisfied.

Based on the results of calculations obtained by substituting real numerical values—derived from the models and formulas presented above—into the unknown parameters of the developed trend functions, a forecast of the gross output value in vegetable production for the period 2024–2030 was developed, using data for 2017–2023.

In analyzing the dynamics of gross output value in vegetable production through mathematical modeling, it is essential to incorporate all relevant factors influencing this indicator. This approach enables a more accurate assessment of future yield trends and the growth dynamics of gross output value in the sector. Moreover, it facilitates economic analysis of the prospective development processes of the vegetable production sector.

During the research process, forecasts of the gross output value in vegetable production were developed based on regression analysis and multiple regression models. By substituting real numerical values—obtained through the applied models and formulas—into the unknown parameters of the regression equations, projections for 2024–2030 were generated based on the observed dynamics for 2017–2023 (Table 4).

Table 4. Forecast indicators of gross output value in vegetable production and its changes for the period 2024–2030⁸

№	Years	Gross output value (billion UZS)	Cost of mineral fertilizers (billion UZS)	Cultivated area (ha)	Average yield (centners/ha)
		Y	X1	X2	X3
1	2024	8526,1	65,7	27050	250.7
2	2025	9962,4	77,2	28806	255.4
3	2026	11565,7	90,5	31019	262.0
4	2027	13336,1	105,6	33691	270.3
5	2028	15273,6	122,4	36819	280.6
6	2029	17378,2	141,0	40406	292.7
7	2030	19649,9	161,4	44450	306.6

The analysis of the dynamics of vegetable production based on mathematical modeling, along with forecasting through the comprehensive inclusion of influencing factors, enables an accurate assessment of yield growth trends and the identification of key drivers of sectoral development.

According to the calculations carried out, the gross output value of vegetable production in the region is projected to increase from 7,462.7 billion UZS to 19,649.9 billion UZS by 2030. This growth is expected to be supported by improvements in yield levels, resulting in a significant increase in total production.

The forecast graph illustrating the actual and model-estimated values of gross output in vegetable production is presented in Figure 2.

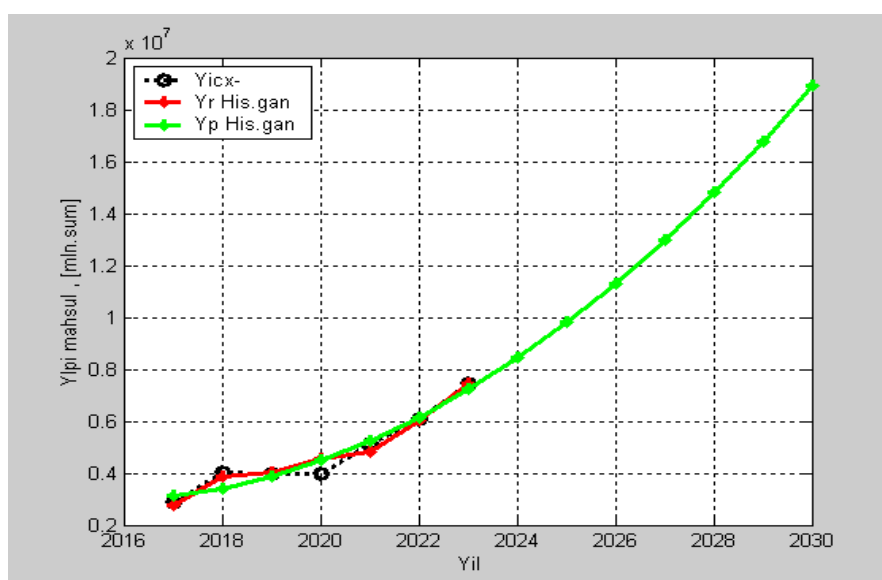


Figure 2. Forecast of actual and model-estimated values of gross output in vegetable production based on model (3.5) and partial models⁹

⁸ Developed by the author.

⁹ Developed by the author.

Figure illustrates the dynamics of gross vegetable production over time, comparing actual values, calculated results, and forecast estimates. The black dashed line represents actual data, the red line shows calculated values, and the green line indicates forecasted growth up to 2030. The graph demonstrates a steady upward trend, with significant increases in production expected in future years, reflecting positive development in the vegetable sector and improving productivity levels overall consistently.

CONCLUSION AND RECOMMENDATIONS

In general, the results of the conducted research make it possible to formulate a number of scientific conclusions and practical recommendations. Considering market demand and soil-climatic conditions, it is advisable to intensively develop vegetable production in areas surrounding Tashkent city. This approach provides additional socio-economic benefits for both business entities engaged in vegetable production and society as a whole, particularly through improved economic efficiency of land use, which is reflected in increased average yields compared to traditional methods and higher gross output per unit of cultivated area within a single vegetation period. Furthermore, the reduction of labor and material-technical resource consumption leads to lower production costs, including decreased seed usage per hectare, reduced labor intensity due to fewer agrotechnical operations, and savings of scarce resources such as water through the application of innovative technologies. At the same time, improvements in product quality compared to traditional production methods contribute to higher economic efficiency, and in this context, it is proposed to apply a framework for assessing socio-economic benefits referred to as the “gradation of socio-economic benefits for producers and society through the development of intensive vegetable production.”

In addition, further improvement of state support mechanisms for the development of intensive vegetable production is essential. This includes promoting vegetable exports through the development of cooperatives and producer associations, maintaining export incentives, and supporting the import of modern technological equipment and advanced technologies by introducing customs privileges for a period of at least five years. Similarly, supporting the import of machinery and technologies for vegetable processing, as well as modern digital solutions, will enhance production efficiency and stimulate the production of high-quality, competitive products, thereby increasing export volumes and overall economic returns.

Given that vegetable production is largely carried out by small farmers, dehqan farms, and household plots, it is important to promote their integration into cooperative structures. This will help address challenges such as limited quality control capacity, fragmented production of diverse vegetable types, relatively high transportation costs due to small production volumes, insufficient conditions for modern storage and processing, and limited opportunities to adopt advanced scientific, resource-saving, and digital agrotechnologies. Strengthening cooperative relationships and improving the organizational and legal framework will play a key role in overcoming these constraints.

To ensure sustainable development and mitigate potential risks in the vegetable sector, it is necessary to introduce resource-efficient and high-performance machinery and equipment, particularly small-scale technologies suitable for small farms, alongside modern digital tools. At the same time, developing value-added chains through improved storage, transportation, processing, and marketing infrastructure is crucial. Promoting environmentally sustainable and water-efficient vegetable production systems, taking into account regional specificities, as well as diversifying production in line with global market demand through the introduction of new vegetable varieties, will further strengthen the sector.

In conclusion, the implementation of the scientific findings and practical recommendations developed in this study will contribute significantly to the advancement of the vegetable sector in the Republic of Uzbekistan. It will support the adoption of modern technologies, enhance digitalization processes, and increase the competitiveness of the sector. As a result, agricultural development will accelerate, export potential will expand, foreign investment inflows will grow, new employment opportunities will be created, and overall socio-economic welfare will improve.

REFERENCES

1. O'zbekiston Respublikasining “Fermar xo'jaligi to'g'risida”gi Qonuni, 662-II-son. – Toshkent: Adolat, 2004-y. <https://lex.uz/docs/-275195>.
2. O'zbekiston Respublikasining “Dehqon xo'jaligi to'g'risida”gi O'RQ-680-son Qonuni. – Toshkent: Adolat, 2021-y. <https://lex.uz/uz/docs/-5351631>.
3. O'zbekiston Respublikasi Prezidentining 2017-yil 9-oktabrdagi “Fermar, dehqon xo'jaliklari va tomorqa yer egalarning huquqlari va qonuniy manfaatlarini himoya qilish, qishloq xo'jaligi ekin maydonlaridan samarali foydalanish tizimini tubdan takomillashtirish chora-tadbirlari to'g'risida”gi PF-5199-son Farmoni. <https://www.lex.uz/uz/docs/-3371644>.
4. O'zbekiston Respublikasi Prezidentining “2022–2026-yillarga mo'ljallangan Yangi O'zbekistonning taraqqiyot strategiyasi to'g'risida”gi 2022-yil 28-yanvardagi PF-60-son Farmoni. <https://lex.uz/ru/docs/-5841063>.

5. O'zbekiston Respublikasi Prezidentining "Qishloq xo'jaligi mahsulotlarining sifat va xavfsizlik ko'rsatkichlari xalqaro standartlarga muvofiqligini ta'minlashga doir qo'shimcha chora-tadbirlari to'g'risida"gi 2020-yil 18-maydagi PF-5995-son Farmoni. <https://lex.uz/uz/docs/-4815923>.
6. Mirziyoyev Sh.M. Qishloq xo'jaligi va oziq-ovqat mahsulotlari ishlab chiqarish – eng dolzarb masala. – 2020-yil 10-aprel. www.prezident.uz/uz/lists/view/3493.
7. "Yevropa Ittifoqi mamlakatlari bozorlariga qanday qilib eksport qilish kerak (meva-sabzavot mahsulotlari misolida)", Botirova D., Kaxxarova G., Akbarov D. – Toshkent, 2015.
8. Xushmatov N. Intensiv sabzavotchilikni rivojlantirishning iqtisodiy samaradorligi. "Globallashuv va iqlim o'zgarishi sharoitida oziq-ovqat xavfsizligini ta'minlash: muammo va yechimlar" respublika ilmiy-amaliy anjumani materiallari. – 2024-yil 15-may, 24–30-betlar.
9. Xasanov S.S. Sabzavotchilik tarmog'ini rivojlantirishning ustuvor yo'nalishlari. Dissertatsiya. – Toshkent, 2024. – 137-bet.
10. O'zbekiston Respublikasi Prezidenti huzuridagi Statistika agentligi ma'lumotlari.
11. O'zbekiston Respublikasi Qishloq xo'jaligi vazirligi ma'lumotlari.
12. Djumanova R.F. "Ijtimoiy-iqtisodiy jarayonlarni modellashtirish va prognozlash". O'quv-uslubiy qo'llanma. – Toshkent, 2012-y., 15-bet.

Proofreader: Zokir ALIBEKOV

Layout and Designer: Oloviddin Sobir ugli

2026. № 3

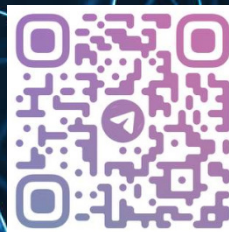
© When materials are reproduced, the INNOVATION SCIENCE AND TECHNOLOGY journal must be cited as the source. Authors are responsible for the accuracy of the information in materials and advertisements published in the journal. Editorial opinions may not always align with those of the authors. Submitted materials will not be returned to the editorial office.

To publish articles in this journal, you may submit articles, advertisements, stories, and other creative materials through the following links. Materials and advertisements are published on a paid basis.

You may subscribe to the journal at any time using the following details. Once subscribed, please send a screenshot or photo of your payment confirmation to our Telegram page @iqtisodiyot_77. Based on this, we will send the latest issue of the journal to your address each month.

“The journal “INNOVATION SCIENCE AND TECHNOLOGY” has been registered by the Agency for Information and Mass Communications under the Administration of the President of the Republic of Uzbekistan from 09.10.2024 under the registration number №390637. License number: C-5669633. PNFL: 30407832680027

Our address: Tashkent city, Yunusobod district, 19th block,
House 17.



Acceptance of articles

Published every
monthly



Directions

Social, economic, political,
technological, scientific



Scopus || Scientific electronic journal specializing in Scopus

CERTIFICATE NUMBER: №390637

**ORDER NUMBER ACCORDING TO
THE LICENSE REGISTER: C-5669633**

CONTACT:



Contact us
+998 50 737 87 88



Telegram channel
t.me/scopus_IST2100



Journal official website
<https://ist-journal.uz/index.php/IST>