

UDC 330.15; 631/635

**THE PECULIARITIES OF STATISTICAL ANALYSIS ON FRUIT AND
VEGETABLE FARMING (FERGANA REGION IS AS AN EXAMPLE)**

**ОСОБЕННОСТИ СТАТИСТИЧЕСКОГО АНАЛИЗА ОБЕСПЕЧЕННОСТИ
ФРУКТАМИ И ОВОЩАМИ (НА ПРИМЕРЕ ФЕРГАНСКОЙ ОБЛАСТИ)**

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Abstract. The theoretical aspects of statistical analysis on fruit and vegetable farms' activity, the system of statistical indicators and their practical application will be discussed in this article. The stages of statistical analysis on farms specialized in fruit and vegetable yielding, the system of statistical indicators and the main tasks are given. The article deals with the development of farms specialized in fruits and vegetables and exclusive features of their activity. The farms' main development tendencies, determined problems, given available ways to solve these problems and factors to the modernization of fruit-vegetable field are analyzed.

Аннотация. В статье рассмотрены теоретические аспекты статистического анализа деятельности фермерских и овощных хозяйств, системы статистических показателей и их практического применения. Даны этапы статистического анализа на фермах, специализирующихся на урожайности фруктов и овощей, системе статистических показателей и основных задачах. В статье рассматривается развитие фермерских хозяйств, специализирующихся на фруктах и овощах, и исключительные особенности их деятельности. Проанализированы основные тенденции развития фермерских хозяйств, определенные проблемы, даны доступные способы решения этих проблем и факторы модернизации плодоовощной отрасли.

Keywords: agriculture, horticulture, gardening, farming, statistical study, functions of statistics, economic activity, defining indicators, evaluation of statistical indicators.

Ключевые слова: сельское хозяйство, садоводство, садоводство, сельское хозяйство, статистическое исследование, функции статистики, хозяйственная деятельность, определение показателей, оценка статистических показателей.

Due to the efficiency of economical reforms together with persistent implementation of specified measures, the rate of growing agricultural products is increasing, playing important role by supplying population with consumer products and raw materials. As the first president of Uzbekistan I. A. Karimov noted "Structural changes in our agricultural sphere are being carrying out. Despite complex weather abundant crop was yielded last year- more than 7.5 million grain, and 3,5 million cotton by our farmers because of thier hard work and expertise.

... At the same time, the fruit and vegetable, horticulture, viticulture and livestock spheres of agriculture have developed rapidly. 12 million 592 thousand tons of potatoes and vegetables, 1 million 850 thousand tons of field fruits such as water-melon, melon, cabbage, 1 million 556 thousand tons of grapes, 2 million 731 thousand tons of fruit was yielded last year.

The main attention is being paid to the thorough refinement of agricultural products and to the development of keeping infrastructure of agricultural products as well. 230 enterprises for processing of agricultural products and 114 new cooling chambers with capacity of 77 thousand 800 tons were established and modernized last year. The total capacity of keeping fruits and vegetables reached to 832 thousand tones (Islam Karimov, 2016) (1). For instance, in 2015, manufacturing of agricultural production grew to 42280 bln. Sum, or compared to 2014, it increased by 106.8 percent (2).

A number of legal documents were adopted in order to support fruit – vegetable farms, and also to create more favorable opportunities for them. Main aim of those documents is to carry out a deep reform in all areas of fruit and vegetable, horticulture and viticulture (3).

Currently, the following tasks are considered as priorities in the agricultural sector:

- Full satisfaction of demand in local consumer markets;
- Increasing export potential of the sector;
- Modernization of the sector.

Performing these tasks requires improvements in production of fruit and vegetable, horticulture and viticulture, enhancements in processing and delivery of them to customers, as well as advancements in statistical analyze.

This research is very actual as it investigates statistical studies of structural changes in agriculture and evaluations of dynamics and trends of fruit –vegetable farms in terms of modernizing economy.

Literature Review

Several scientific works were conducted on the development of fruit and vegetable farms and their activities by a number of scientists. Foreign scholars such as L. V. Agarkova, I. A. Baranov, N. A. Popov, A. V. Afanasev, M. A. Solomakhin, N. I. Grekov analyzed the problems of fruit, vegetable and wine markets [1].

We can give N. R. Asadulina, A. X. Burhonov, M. M. Mirzaev, Ch. Murodov, U. P. Umurzoqov, Kh. S. Khushvaqтова, E. I. Ergashev, U. S. Mukhiddinova, Sh. T. Ergasheva, M. Raxmatov's scientific works as examples for organization, management, theoretical and practical aspects of increasing efficiency in fruit and vegetable cultivation [2].

Some recent studies have shown that the Jean Mathis Shurbakh's work pointed out the role of agriculture in the GDP, food security, agriculture, investment, and investment in small farms and the development of farms, farm activities, issues and opportunities for farms based on the advantages and disadvantages of statistical models that can occur [3].

The systematic analysis, evolutionary development, monitoring and technical development matters are illuminated in Chanposuk Tantaфон's researches [4].

Statistical characteristics and peculiarities, main economic and technical performance indicators are analyzed in Susan Shaon's studies [5].

The organizational matters of food tourism based on agrotourism are taken up in foreign scientists's researches such as Sajna S. Shenoy's [6].

Christine Elizabeth Davis studied food safety and agriculture, particularly farm management, advantages and disadvantages of small-scale farms, their cooperation with government and non-government organizations, economical impact of transforming to technologies, and benefits of organizing farmer groups [7].

B. I. Smagin, russian economist, used mathematical statistic methods in his researches in order to show statistical principals and econometrical models of agriculture [8].

Scientists V. N. Afanasiev and A. I. Markova's researches deal with statistics of agriculture and agricultural enterprises. A. V. Glotko and S. M. Ryzhkova's researches deal with issues of organizing of territorial fruit-vegetable sectors and markets [9].

Uzbek scientists V. K. Kobilov, T. Sh. Shodiev, N. Latipov and others made researches in this field. N. Latipov analyzed economic–mathematical methods of increasing the productivity of labor in agriculture.

Young scientists E. I. Ergasheva studied development directions of horticulture and viticulture, and factors affecting them, issues of financial support of the sector, U. S. Muhitdinova's research deals with development of agricultural products market, enhancements of marketing system, T. Yu. Dadaboeva examined ways to improve organizational–economics aspects of horticultural farms. D. S. Ashurova's works are based on statistical analysis of complex economic relations, forecasting future performance of agriculture, and indicators of planning.

Furthermore, analysis of the studied scientific literature shows that a number of economists defined conceptions such as “agriculture statistics”, “crop statistics”, “statistics of perennial crops”, “farm statistics” sufficiently but these scientists did not those for “fruit and vegetable” conception. At the same point of view: “The fruit and vegetable statistics for agriculture, fruits and vegetables in the state and prospects of the development of a descriptive and quantitative data collection, processing, analysis and evaluation of them in terms of quality and economic relations”.

Results and discussion

The Government has solved issues regarding gardening, horticulture, and production of fruits and vegetables in recent years. Companies specialized in producing fruits and vegetables have been cancelled and the lands have been distributed to specialized farms.

Actual task which needs to be solved by the staff of this sphere — to increase the productivity of plants in horticulture, to develop the quality of commodity, to get economic efficiency by frugality. Besides, considering that the population of the Republic will be more than 32 mln (4), farms need to increase and provide the productivity of vegetables to 6 mln ton, potato to 1.5 mln ton, and other vegetables to 1.0–1.2 ton (5). It actually requires to improve the consumption quality of vegetables and fruits, to heed production technology, to constantly increase the harvest of them, and to implement efficient labour, more usage of factors such as land and intensive temperature, and also to analyze farms specialized in fruit and vegetable cultivation.

There is tremendous role of statistic index on farms specialized in fruit and vegetable cultivation, the number-attributed symbol of farms and other objects, which means things to show subjects' status by number and attribute. Statistic indicators will be clarified and be used to establish production and management and also to assist status of firms by recording subject actions.

In reality, identification, collection and information analysis, which is crucial for every subject, are very important, thus there will be established condition for subjects. According to the 5-clause of Uzbekistan Republic's law called “On farming” (6): “The smallest size of land, which will be given for farms specialized in vegetables as lease must be cotton and wheat at least 30 hectares, gardens, grapes and other vegetables at least 5 hectares.”

Nowadays, there are 8882 active farms in Ferghana region. For instance, 3932 — for cotton and wheat (average land size 57–70 hr) 342 for vegetables (average land size 5–15 hr), 4382 — for gardens and grapes (average land size 5–20 hr) and 331 — for livestock (average land size 60–70 hr) (7).

Consumption rate per person accounts for nearly 300 kg vegetables, 102 kg potato, 48 kg grape in Fergana region today. It is 3–4 times more than consumption norm of 260 thousand ton fruit and vegetable products produced in this region are supposed to be exported.

More than 150 modern stores with freezing facilities are working, which are powered to save 100 thousand tons of products. But there are opportunities to improve production potentials. According to perspective plan for 2016–2020 years, there are 14 investment plans such as building

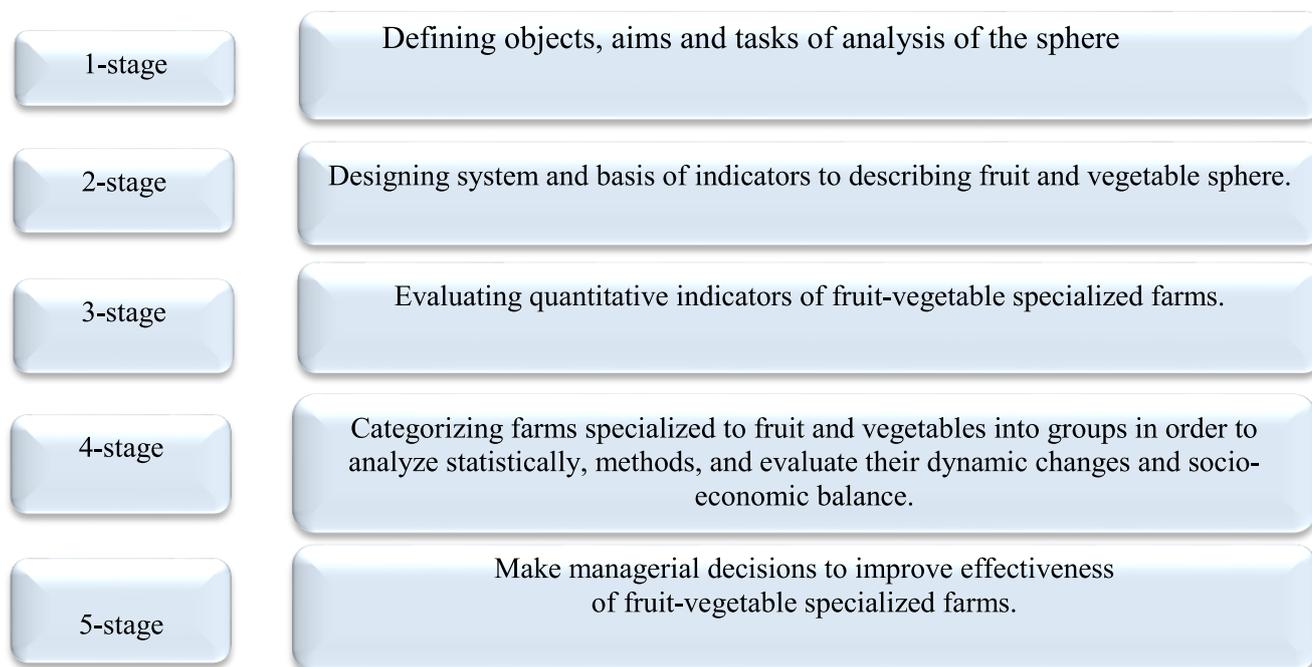
plants specialized in saving, producing and recycling of fruits and vegetables, and also in industrializing the farms. Together with these facilities there is a plan to make tax opportunities, comfortable bank credits, leasing services, and consulting organizations to export products.

In analyzing activity of fruit–vegetable–specialized farms, it is essential to determine value of agricultural fruit and vegetables, their quality and amount, land resources and harvest. This analyze, combined with complete structural analyze of agriculture as a whole has a strong impact on the decisions, and also help to create and define long term goals for the sector.

In our opinion, main tasks of agricultural statistics are these:

- Analyze efficient utilization of land resources;
- Analyze statistically size, structure and dynamics of free fields;
- Find out availability of fields for fruits, vegetables, grapes and other types of crops;
- Statistical analysis of total harvest of vegetables, verdure plants and other types of agricultural products;
- Statistical evaluation of impacts of agricultural reforms;
- Statistical research on natural, agro technical, economic and other types of factors that affect crop;
- Statistical research of availability and quality of types, fund of seeds and saplings;
- Provide with information for research, controlling and developing aims;
- Make suggestions to improve current status of the sector, and define problems and opportunities through complete analysis.

Statistical analysis of fruit-vegetable sphere of agriculture requires implementing its own methods. In order to use those methods we have to determine logical stages and theoretical basis so that we can compose full statistical researches in the fruit-vegetable sphere (Figure).



Source: compiled by the author

Figure. The stages of statistical analysis for farms specialized in fruit and vegetable cultivation

Conclusion

While conducting statistical and economic research on developing and enhancing the economic efficiency of the farms, specialized in fruit-vegetable growing in Fergana region, following have been derived:

1. “In our opinion, fruit-vegetable statistics is the collection of economic data describing the current situation, development, and future of the fruit-vegetable farms.” This part of statistics systematically and completely learns the study methods of the development of this vital section of agriculture in a real market relations, as well as the present conditions of the agricultural products, and probably in the near future influences the decisions made on effectively controlling this sphere.

2. The present benefits, conditions, and huge unexploited potentials of farms, which are the tailspin of entrepreneurship, require us to develop and modernize the fruit-vegetable farms. Successfully completing the research eventually serves to boost the effectiveness of reaping fruit and vegetable products.

3. The statistics comprises indicators regarding crop fields, crop varieties, and agro–technologic initiatives. Statistical research in fruit-vegetable sphere plays an important role in development of agriculture.

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*Работа поступила
в редакцию 17.07.2017 г.*

*Принята к публикации
19.07.2017 г.*

Cite as (APA):

Khojayev, A. (2017). The peculiarities of statistical analysis on fruit and vegetable farming (Fergana Region is as an example). *Bulletin of Science and Practice*, (8), 188-193

Ссылка для цитирования:

Khojayev A. The peculiarities of statistical analysis on fruit and vegetable farming (Fergana Region is as an example) // Бюллетень науки и практики. Электрон. журн. 2017. №8 (21). С. 188-193. Режим доступа: <http://www.bulletennauki.com/khojayev> (дата обращения 15.08.2017).