

Conceptual Fundamentals of Diversification of Production in Farms to Ensure in Food Security and Poverty Reduction

Tukhtabaev Jamshid Sharafetdinovich

Tashkent State University of Economics

Senior Lecturer of the Department of Economic Security, (PhD)

jamshidtukhtabaev@gmail.com

Taylakova Dilafroz Baymamatovna

Karshi Engineering and Economics Institute

Independent Applicant

Tashnazarov Suratjon Abdullayevich

Samarkand Institute of Economics and Service

Independent Researcher

Ismagulova Gulmira Nuralievna

Tashkent state agrarian university

Independent Researcher

Suvpulatova Maftuna Asadullo qizi

Tashkent State University of Economics

DE-52 Group Student

Abstract. This article is based on the fact that farmers and landowners are active participants in the production of agricultural products. Factors influencing the operation of farms have been identified, the levels of impact of these factors have been econometrically assessed, and the need for farm development to ensure food security and poverty reduction has been scientifically and practically analyzed.

Keywords: Food security, farms, landowners, diversification, correlation, regression, non-food production, supply and service.

I. INTRODUCTION

The global problem of the coronavirus (COVID-19) pandemic has brought humanity into a state of self-isolation. This has a serious impact on their employment, lifestyle, family, and the country's economy. Some occupations are responsible for avoiding poverty and hunger in this situation. One of such professions is farmers. They can feed not only himself and his family, but the people. They continue their work despite the pandemic to boost the economy of our country. Farmers, who organize their work on the principle of "from field to home", are working to fill the table of our people, to meet their basic food needs, especially in today's difficult situation.

Several legal and regulatory documents issued by our government under the leadership of the President of the Republic of Uzbekistan are the basis for stimulating their activities, free and independent activities. In particular, the Decree of the President of the Republic of Uzbekistan dated October 10, 2017 "On organizational measures for further development of farmers, farms and landowners" RP-3318 and April 27, 2018 "On improving the activities of farmers, farms and landowners" RP-5953 of the State Program of the President of the Republic of Uzbekistan dated March 2, 2020, on the implementation of the Action Strategy for the five priority areas of development of the Republic of Uzbekistan for 2017-2021 in the "Year of Science, Enlightenment and Digital Economy" and RP-5975 of March 26, 2020 "On measures to radically update the state policy on economic development and poverty reduction" directly serve the development of agriculture and improving the living standards of the population.[3]

II. METHODOLOGY

The great role of farms in maintaining the stability of food supply in the country creates the basis for large-scale reforms for the development of these businesses. Development of scientific and practical recommendations for sustainable development of agriculture in the context of modernization and diversification of the agricultural

sector of the Republic of Uzbekistan, increasing the income of the population based on the further development of farms, as the future growth needs of the population are related to the activities of diversified farms, landowners the output is up to date. After all, as the President said, "...the only way to ensure the stability of food prices in the consumer market - fruits and vegetables, increase the production of livestock and other food products. We will not have the significant changes we expect unless we increase market incomes, create more jobs, increase market production, and increase the interest of farmers and ranchers" [1].

Increasing the production of agricultural products following the medical norms per capita is an important task facing the economy of each country. However, despite the limited opportunities, the issue of food security is becoming more acute from year to year [2]. The drastic changes in the global climate, the growing population, and the growing demand for agricultural products make it necessary to continue reforms in the sector. As a result of global warming and pollution, the World Health Organization recognizes the need to increase the daily consumption of fruits and vegetables from agricultural products to 400-500 grams, but, unfortunately, this norm is 150-200 grams on average worldwide. According to the recommendations of international nutritionists,

At present, some problems related to the future development of farms are waiting to be resolved. One such solution is to diversify the production of products on farms. "Diversification" (Latin "diversificatio" - change, diversification) - means the expansion of the range of products produced to achieve economic efficiency and the prevention of bankruptcy in line with market demand [4]. The word diversification appeared in foreign economic literature in the 50s and 60s of the twentieth century. For the first time, Princeton University professor M.Gort [5] has scientifically studied the diversification and challenges encountered in the development of American industry.

In our opinion, "product diversification is a tactic for the future development of the market, an innovative form of product delivery to consumers. Therefore, it serves to provide the market with a wide range of goods and services". Also, foreign experience in the development of farms has been studied, and we consider it appropriate to introduce the following important experiences into the economy of the republic:

- ensuring that the state buys some low-yielding agricultural products at high prices to support the domestic market (experience of Germany, Israel, USA) [6];
- economic incentives for farms that use agricultural land efficiently, improve its reclamation status, organize production based on alternative energy sources (experience of Germany, USA, Israel) [7];
- preservation of production traditions of the country based on specialization in agriculture (German, Israeli experience) [8];
- improving cooperative relations based on the principles of mass cooperation and allowing farms to operate as members of several associations and cooperatives (German and Israeli experience) [9];
- development of the Economic Research Service (ERS) in the Ministry of Agriculture and the Leadership Program Methodology to improve the quality of life in rural areas and diversify agriculture to stimulate and improve the activities of family farms as the main cooperatives in the agro-food complex (US and EU experience) [10].

Drawing on the experience of the above-mentioned countries and preserving the Uzbek mentality and ancient agricultural values, the head of our state has created great conditions for today's farmers, and landowners by conveying his decisions and decrees to the people. In particular, the Ministry of Agriculture and the Ministry of Innovative Development of the Republic of Uzbekistan will formulate state scientific and technical programs of fundamental, applied and innovative research, the introduction of scientific projects for the development of innovative developments and modern technologies for efficient use of land plots and farms, the establishment of a research center for the development of small agricultural production and mini-agro-technologies on farms and backyards; Establishment of "Plant Clinic" LLC in the regions of the republic, which will help farmers and landowners to protect their crops from diseases, provide necessary advice and counseling. In case of payment of insurance premiums in the amount of one minimum wage per year to the Extrabudgetary Pension Fund under the Ministry of Finance of the Republic of Uzbekistan by individuals raising not less poultry the inclusion of the insurance premium in the length of service.[11]

Today, the lack of infrastructure and adequate market mechanisms for the provision of material and technical resources to farms and landowners, as well as insufficient market mechanisms [12] also hinder the development of their activities. It should be noted that there is no clearly regulated, convenient supply system for farms. Opinions of the surveyed farms are shown in the figure below (Figure 1).

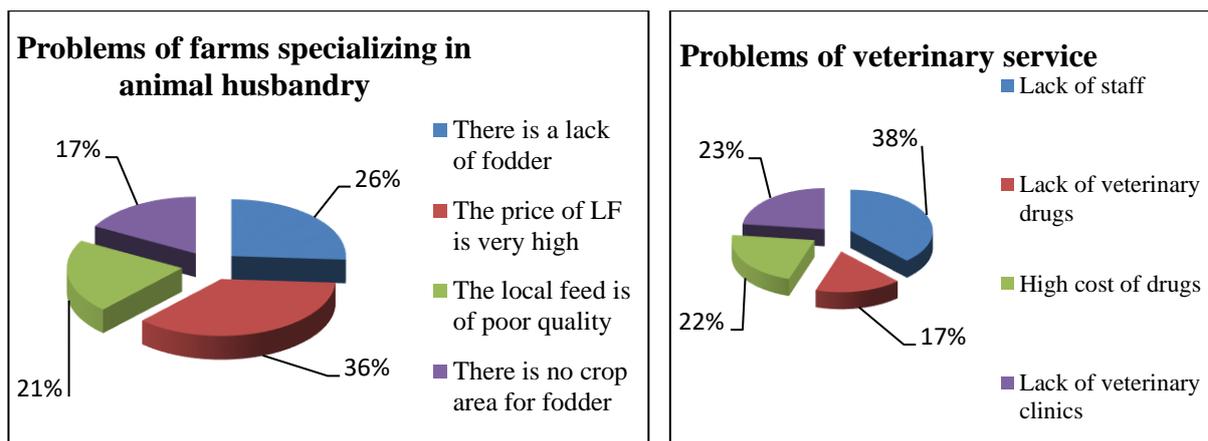
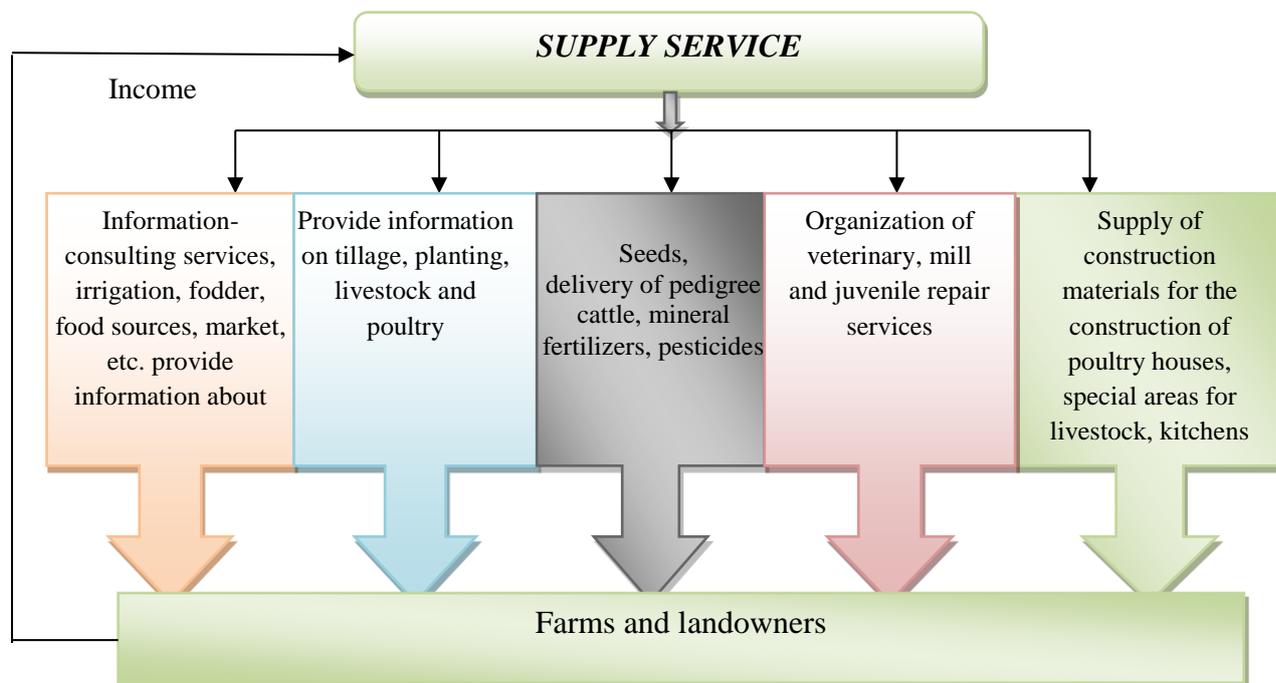


Figure 1. Problems of livestock farms

To solve the above problems, in our opinion, it is expedient to create a separate system of "supply and service", which will deal with the task of providing farms with the necessary resources (Figure 2) [13].

Figure 2. Model structure of "Supply and Service" serving farms



“Supply and service” is a business entity that benefits from the activities of private farms and landowners, self-financing, and their services. By its Charter and objectives, the statutory fund should have all the inventory that helps farms to operate effectively. According to research, through the establishment of such organizations in the field, close practical assistance is provided to farmers and farmers can solve any problem that arises in them through these organizations.

III. ANALYSIS AND RESULTS

To justify the trust of the state, a study was conducted to determine the contribution of farmers and landowners in the production of gross agricultural output. At the same time, all the factors influencing the diversification of farm activities were identified [14] and correlation-regression methods were used. Taking into account the nature of the growth rate of gross agricultural output and the specifics of the agricultural sector, using the analyzed economic results to create an econometric model of increasing the volume of agricultural production, the volume of gross agricultural output (bln. sum) - Y (t) was selected (Table 1).

Table 1: Values of factors included in the correlation-regression analysis [15]

Years	Y	X ¹	X ²	X ³	X ⁴	X ⁵
2001	306,2	925,5	619,3	3243,6	1180,2	401,5
2003	653,2	2087,3	1434,1	3312,4	1205,5	404,1
2005	862,2	2867,8	2005,6	4377,1	1240,2	433,3
2007	1624,4	4698,7	3074,3	4631,7	1429,7	454,8
2009	2832,6	7367,3	4534,7	4703,4	1431,1	466,7
2011	6214,2	10468,9	4254,7	4773	1432,5	471,5
2013	6068,4	15474,2	9405,8	4716,3	1433,2	467,7
2015	10076,4	24067,3	13990,9	4690,5	1435,1	474,3
2017	13472,1	28067,2	25821,6	4780,4	1434,6	476,7
2019	16375,6	34125,6	31395,3	5089,8	1432,8	483,1

Related variables that affect the resulting character: Y - gross agricultural output (billion sums); X1 - gross agricultural output (in current prices billion sums); X2 - total livestock production (billion sums); X3 - total number of farms (thousand units); X4 - population employed on farms (thousand people); X5 - arable land attached to farms, thousand ha.

Using the results obtained using regression analyzes, it was possible to develop prospects for the growth of gross agricultural output on farms (Table 2).

Table 2: Prospective models on the factors influencing the economic efficiency of farming

№	Model view	F – Of the Fisher criterion calculated value
1.	$X^1 = 105,8t^2 - 232,6t + 1258,1$	992,0
2.	$X^2 = 8,225t^3 - 97,14t^2 + 588,1t + 323,5$	462,59
3.	$X^3 = 1,033t^3 - 39,36t^2 + 503,9t + 2571$	92,0
4.	$X^4 = -1,666t^2 + 48,07t + 1106$	62,175
5.	$X^5 = 4,518t + 408,1$	39,34

Accordingly, the forecast parameters of each of the analyzed factors for 2020-2022 and the change in gross agricultural output by summarizing them were calculated (Table 3).

Table 3

Predictive indicators of factors involved in regression analysis

Years	Y	X ¹	X ²	X ³	X ⁴	X ⁵
2019	21009,72	38926,1	39029,5	5169,0	1401	498,46
2020*	23576,78	43031,3	46006,585	5361,753	1380,764	502,978
2021*	26227,71	47348,1	53825,74	5605,944	1357,196	507,496
2022*	28951,31	51876,5	62536,315	5907,771	1330,296	512,014

* forecast period

The data in Table 3 show that in 2022, compared to 2010, the gross agricultural output will increase by 4,9 times, gross livestock production by 14,7 times, the number of farms by 123,8%, and the area under crops attached to farms by 108,6%. All key productivity indicators of farms have a growth rate. According to the forecast, the volume of agricultural production in agriculture is expected to increase 1,76 times in 2022 compared to 2019, the number of farms will increase by 1,16 times. Accordingly, the area of land required for farms by 2022 will increase by 1,06 times compared to 2017.

The study analyzes the diversification of activities of farms and landowners in Kashkadarya region, analyzes the performance of non-traditional livestock and agricultural production for 2001-2019, and develops forecast parameters for 2020-2024 [16].

The rapid development of non-traditional livestock and farming in farms is primarily the result of targeted measures taken in our country to develop this sector. In particular, the number of camels in farms specializing in the development of camel breeding will be 874 by 2024 or 1.7 times more than in 2019 [17], 1,1 times more in horse breeding, 3,6 times more pedigree goats, 1,7 times more rabbits, and 3 times more ostriches. An increase of

8 times was forecast. [18] In the future, in non-traditional agriculture, the total area under medicinal plants will reach 3028,6 hectares by 2024, which will increase by 2,6 times compared to 2018, including the area under Jerusalem artichoke by 1,6 times, watermelon by 1,3 times, anzu onion 1,2 times, retail 1,4 times, bitter almonds 1, It has been found that it expands 4 times and the nectar 1,2 times [19]. It was also identified that in the livestock and agriculture sector, the value of the product and the number of new jobs will increase in the future. In particular, the volume of production in new areas of animal husbandry in 2024 will reach 18,2 billion sums, which is 1.3 times more than in 2019, the number of new jobs will increase by 2,1 times, as well as by the analysis of medicinal plants. , An increase of 8 times and a 1,7-fold increase in the number of new jobs [13].

Using the results of the above multifactor analysis, it will be possible to determine the prospects for increasing the volume of gross output in farms, as well as scientific analysis. On this basis, the development of effective organizational and economic decisions to increase the efficiency of production on farms in the future will serve as a scientific basis.

But the realization of these predictions will in many respects be the result of the hard work of farmers and ranchers even in today's difficult situation. The delivery of seeds and seedlings to home-grown farmers "is organized by the state to solve the main problem of food security of our people and the implementation of the poverty program" [20].

IV. CONCLUSIONS

In the context of the pandemic, the welfare of the population, food security, food security, etc., is one of the important measures to develop the activities of farmers and landowners. It has even risen to the level of public policy, raising the issue of the removal of unused land. A farm is a family farm that specializes in the production of agricultural products, which provides for the joint work of family members and meets the demand of the population for agricultural products.

The development of non-traditional livestock and agricultural production in Kashkadarya region using the opportunities to diversify the activities of farms and landowners will ensure the production of additional agricultural products and the creation of new jobs.

In the future, it would be expedient if the development of effective organizational and economic decisions to increase the efficiency of crop production on farms is organized on a scientific basis, with the recommendations of experienced farmers and landowners. It is also important to organize a "Supply and Service", taking into account the suggestions of farmers and landowners. Even if online remote service is allowed, it is necessary to organize a service for the supply of quality seeds to farmers and landowners. It is also proposed to implement product diversification, as the future development of the market, innovative approach to the provision of products to consumers is associated with product diversification. Product diversification serves to provide the market with a wide range of goods and services. As a result of diversification in agriculture, it is possible to increase the number of agricultural products in line with market demand, increase the income of processing, cooperative relations, and direct agricultural producers.

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