

## **The assessment of the development of grain production in ensuring food security in Azerbaijan**

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### **Abstract**

Mustafayeva, R., Abbasova, Y., Qambarova, R. & Bayramova, Z. (2024). The assessment of the development of grain production in ensuring food security in Azerbaijan. *Bulg. J. Agric. Sci.*, 30(1), 3–10

Grain products are in the main place in ensuring food safety. The paper focuses on trends in the development of grain production in Azerbaijan. The analysis of food security, which is included in the list of global problems, taking into account the difficulties caused by the economic crisis, internal and external factors in the modern period, is quite relevant at the national level. The assessment of the availability of grain and grain products, which form the basis of food security, is the main resource of our research. An assessment of the availability of grain shows that the volume of its production is not enough to meet our domestic needs. Comparative analysis of new data on grain production, use and quality in Azerbaijan and determination of the most pressing tasks for solving the grain problem in accordance with world experience is very important. To this end, the article comprehensively analyzed the current state of grain production by analyzing the theoretical and methodological foundations of the development of grain production, identified and characterized the factors affecting grain production. In terms of ensuring food safety, the level of self-sufficiency with grain products was assessed.

As a result, we tried to determine the perspective directions of the development of grain production in order to obtain a general result and ensure food security by examining the main reasons that slow down the development of grain production.

Research method. During the research – observation, comparison, statistical analysis, grouping, constructive calculation methods were used.

*Keywords:* food security; grain production; high-quality grain; level of self-sufficiency; productivity; grain market

### **Introduction**

In many countries, the history of agriculture begins with grain production. The systematic development of the agrarian sector depends on the level of development of grain production. The state of production and delivery to the final consumer of wheat, rice and other cereals, which are more consumed and considered the main food product, is the main factor determining the nature of the food problem.

Today, the most important task of the entire world community is to ensure food security. The events that have taken place recently, such as the pandemic, the war in Ukraine, natural disasters (drought in Europe, floods in Pakistan, etc.) have

certainly affected the food security of almost all countries of the world. According to the latest estimates, in the coming decades, there is a risk that extreme weather events will simultaneously hit several large regions of the world, and as a result, crop losses and a sharp increase in prices (GFSP, 2015).

The crisis phenomena led to inflation, which naturally affected the incomes of the population. Domestic food price inflation (measured as year-on-year change in the food component of a country's Consumer Price Index (CPI)) remains high. Information from the latest month which food price inflation data are available shows high inflation in almost all low-income and middle-income countries. There are 93.3% of low-income countries, 90.9% of lower-middle-income countries.

93% of upper-middle-income countries have seen inflation levels above 5 percent, with many experiencing double-digit inflation. The share of high-income countries with high inflation has also increased sharply, with about 85.7% experiencing high food price inflation. It is forecasted that 205.1 million people will be in food crisis or worse in 45 of the 53 countries with data for 2021 and 2022. In such conditions, many countries imposed restrictions on the export of grain products. For instance, India, the world's largest exporter of rice, recently imposed trade restrictions on certain types of rice (WB, 2022).

Approaches to solving this problem differ depending on the country. China's drive for 9 future food security is challenged by problems such as low efficiency of resource use and resource limitation, diminishing return in yield response, competition for nonagricultural land uses, and environmental degradation (Li et al., 2013). In other countries, special attention is paid to the adaptation of agricultural production to climate change (Singh, 2016).

Ensuring food security is a top priority for all countries, including Azerbaijan. Food security can be maintained only if international and domestic policies, institutional frameworks, and public expenditure patterns are conducive to cost-effective and sustainable agriculture development (Peng et al., 2002). In such conditions, the priority task is to develop grain growing and provide the population with grain products. The problem of the development of grain growing is complex and multifaceted, since it combines many natural, economic, organizational, technological, technical and other issues (Altukhov, 2010). The most important factor affecting the productivity of farms is the availability of technologies that are not the same for all producers (Kostlivi et al., 2020).

Although the countries that are the main exporters of grain in the world adopt various strategic priorities depending on the characteristics of the historical stages of the development of agriculture, they highlight the factor of comparative advantage. For this purpose, the state of land resources as the main means of production and the level of their use are assessed. Thanks to a comparative analysis of the efficiency of production and sales of various crop products, a favorable structure of arable land is determined. By civilized means of regulation of the market economy, the activities of economic entities of different forms of ownership are directed to a favorable crop structure. Also countries' financial, fiscal and monetary policies have an important effect on agricultural production (Bozkurt & Kaya, 2021; Akbar & Jabbar, 2017).

## **Materials and Methods**

Agrarian policy forms the main line of socio-economic policy of the Azerbaijani state. A healthy and productive

lifestyle of society depends on the satisfaction of this problem. The adopted state programs guarantee the state of food independence, socio-economic development of the country, the physical and economic accessibility of food products that meet the requirements of the consumption of food products necessary for an active and healthy lifestyle in a volume not less than rational norms for each citizen of the country (Mustafayeva et al., 2021).

As in the rest of the world, grain growing is one of the most important areas of economic development in Azerbaijan. Its effectiveness is evident in the fact that it allows for a more sustainable formation of the food fund, the development of livestock, the purchase of a large number of food products, and the improvement of nutrition of the population. In a sense, grain is a social product, since it is the basis for food production for absolutely all segments of society, which is necessary in all countries and at all periods of their existence – both in periods of growth and in stages of degradation and crisis.

In many countries, including Azerbaijan, local grain production is not enough to meet domestic demand. Variety and crop differences due to different agroclimatic conditions, sharp changes in prices for products create serious problems in solving the global food problem and national food security.

In our country, grain growing is one of the fields with an ancient tradition. Based on statistics, let's note that in 1913, 87% of the total cultivated area in the country, i.e. 832.9 thousand ha, was occupied by cereals. Produced grain was exported as well as meeting domestic demand. After joining the USSR, the area under grain cultivation began to decrease in the structure of total arable land. Already in 1980, according to this indicator, the cultivated area decreased by 41.1% to 490.6 thousand ha. After gaining independence, the problem of ensuring food security of the country began to be solved. In June 2000, the government of Azerbaijan signed a Memorandum of Understanding on membership in the Food Safety Program of the European Commission. Thus, the Food Security Program was developed in the country and approved by the president of the country by the order dated March 2, 2001 (FSP, 2001).

At the present time, when it is an objective necessity to ensure national food security in a significant part of the country's land resources and agricultural areas, grain, i.e. cereals and legumes are grown. As the involvement of new industries in economic turnover becomes more difficult, the issue of planting more productive and high-quality varieties in existing areas becomes more urgent. Therefore, growing or zoning of wheat, rice, barley and other grain varieties with high yields is considered an important direction in the development strategy of grain production.

Although the countries that are the main exporters of grain of the world adopt various strategic priorities depending on the characteristics of the historical stages of the development of agriculture, as we have already noted, they highlight the factor of comparative advantage. For this purpose, the state of land resources as the main means of production and the level of their use are assessed. Thanks to a comparative analysis of the efficiency of production and sales of various crop products, a favorable structure of arable land is determined.

## Results and Discussion

In our country 55.2% of the land fund is suitable for agriculture (Mustafayeva et al., 2022). Statistical analyzes show that in 2016, the land area suitable for agriculture in our country was 4772.9 thousand ha, and in 2020 it increased by about 0.15% to 4780.1 thousand ha, of which 42.8% arable land, 0.8% fallow lands, 5.7% perennial plantings, 50.7% mowing and grazing areas (SSCA, 2022).

Consider the arable land of agricultural crops for all categories of farms (Table 1). As can be seen from the table data, the arable land of agricultural crops has decreased compared to 2019, which has shown itself in the field of crops of cereals and legumes. Between 2016 and 2020, the sown area of cereals and legumes ranged from about 59 to 62% of the total sown area. In 2019, cereals and legumes accounted for 62.5% of total crops, in 2020 – 60.6%.

The sown area of cereals and legumes compared to 2016, in 2020, the sown area of winter rye increased by 10 times, hornbeam by 2.2 times, paddy by 20%, and legumes by 21%. The planting area of wheat, barley and corn has been relatively reduced. Compared to 2018, in 2019 it decreased by 0.9% and compared to 2019 in 2020 by 7.8% from 1072.3 thousand ha to 989.1 thousand ha. In the compared years

2018–2019, the sown area of wheat, paddy and legumes decreased by 12%, 25% and 26.2%, respectively, and the sown area of barley, hornbeam, corn for grain increased by 0.8%, 5.5% and 2.7%, respectively.

By the way, it should be noted that oatmeal is one of the main products in the food rations of people and in the production of strong feed in animal husbandry. At the same time, it can be noted as the most important export product. In addition, the advantage of oatmeal among other grain crops is due to its low soil requirements, the ability to intensively use low-soluble compounds and low water demand. In our opinion, compliance with the agroclimatic features of the country also contributes to the expansion of the sown area of this crop, and from this point of view it can be assessed positively.

The total grain harvest in the country is shown in Table 2. Compared to 2016, the total grain harvest for all farm categories in 2020 increased by 6.2%. During the analysis period, wheat grew by 1.04%, and barley-by 6.8%. The serious increase is more pronounced in grains such as millet, hornbeam and Paddy. Compared to 2019, in 2020 there was a decrease in gross grain harvest by 8.1%. There was an increase of 0.4% in barley and 10.9% in corn for grain. On other indicators, there was a decrease in the total accumulation. Wheat has decreased by 4%, hornbeam by 7.8%, millet by 25.5%, paddy by 5.3%, and legumes by about 59%. We see the main reason for this in the reduction of arable land and unfavorable climatic conditions.

The indicator of the effective development of crop production is productivity. Fertility is formed under the influence of biotic, abiotic and anthropogenic factors. This includes technical equipment, varietal qualities of the crop, soil characteristics, humidity level, the presence of fertilizers and pesticides, temperature, etc. reflecting is an integral indicator. The factors are related and complement each other.

**Table 1. Total arable land of agricultural crops for 2016–2020 and grain sown area for all economic categories (thousand ha)**

Years	Total arable land	Total sown area of cereals and legumes	Winter and spring wheat	Winter and spring barley	Winter rye	Oatmeal (oats)	Corn for grain	Millet	Paddy	Legumes
2016	1628.3	997.5	590.6	355.2	0.03	2.7	35.9	0.1	2.5	10.5
2017	1665.7	977.2	596.1	318.6	0.2	4.3	35.7	0.1	5.1	17.1
2018	1738	1083.1	679.1	337.2	0.2	4.6	31.7	0.1	4.1	26.0
2019	1717.1	1072.3	670.0	342.2	0.3	5.5	32.8	0.1	4.0	17.2
2020	1630.9	989.1	588.4	345.0	0.3	5.8	33.7	0.1	3.0	12.7
Compared to 2016 in 2020, %	100.2	99.2	99.6	97.1	10 times	2.15 times	93.9	100.0	120.0	121.0
Compared to 2019 in 2020, %	95.0	92.2	87.8	100.8	100.0	105.5	102.7	100.0	75.0	73.8

Source: Compiled by us on the basis of <https://www.stat.gov.az>

**Table 2. Gross harvest of grain in post-treatment weight for 2016–2020, for all economic categories (thousand tons)**

Years	Grain total	Winter and spring wheat	Winter and spring barley	Oat meal	Corn for grain	Millet	Paddy	Legumes
2016	2986.9	1799.9	928.9	6.9	224.0	0.4	5.4	21.2
2017	2855.3	1769.6	792.2	9.4	235.7	0.8	15.9	30.7
2018	3230.4	1991.7	916.0	10.5	247.9	2.8	12.0	48.6
2019	3451.6	2114.1	988.2	13.5	283.6	5.5	11.1	34.8
2020	3172.3	1818.7	992.4	11.1	314.5	4.1	9.4	21.2
Compared to 2016 in 2020	106.2	101.04	106.8	1.6 times	1.4 times	10.3 times	1.7 times	100.0
Compared to 2019 in 2020	91.9	86.0	100.4	82.2	110.9	74.5	84.7	60.9

Source: Compiled by us on the basis of <https://www.stat.gov.az>

At the same time, an important condition for ensuring production efficiency is high productivity. In this regard, from a methodological point of view, a comprehensive assessment of productivity indicators is important.

In 2016-2020, the productivity of sown areas of cereals (with the exception of oatmeal and legumes) in all categories of farms increased (Table 3). Winter and spring wheat grew by 1% and 16.3% respectively over comparable years. Significant growth was in millet and paddy grains about 2.4 times and 46%. In the winter and spring barley yields, the yield for both four crops was about 10% over comparable years. Compared to 2019, the yield in spring wheat, fodder wheat, rice and millet in 2020 was relatively high, but the indicator on total grain was about 1% less. The low yield was due to the unfavorable weather-climatic conditions. In our opinion, it is important to slightly revise the winter and spring wheat planting. In this case, it would be good to determine the ways of more efficient use of natural and climatic resources, to develop a strictly scientific algorithm for using new, more advanced and economical agricultural machinery

and biological means affecting the microbiological activity of the soil.

Due to a comprehensive consideration of the regional characteristics of the progressive cultivation technologies of cereals, it is possible to significantly increase the average yield throughout the country. As it is known, the increase in productivity means a reduction in the cost of grain, an increase in the income of entrepreneurs, family farmers and households and interest in this strategic area. Another main means of ensuring high productivity is the use of fertilizers. Local and foreign experience shows that 30–50 percent of the by-product in crop production falls on the share of fertilizers (Abashev & Svetlakova, 2015).

In some of our districts, soils contain relatively small amounts of easily accessible nutrients and are characterized by low natural productivity. And the use of fertilizers allows you to increase production. The productivity of grain crops is determined by: the number of productive stems per unit area, the number of grains in a spike and the weight of grain (Kodanev, 1981).

**Table 3. Grain yield for all farm categories for 2016–2020, cents/ha**

Indicators	2016	2017	2018	2019	2020	Compared to 2016 in 2020, %	Compared to 2019 in 2020, %
Total grain including:	30.6	29.8	30	32.1	31.8	103.9	99.1
Wheat: for Autumn	31.4	30.5	30.2	32.5	31.7	101.0	97.5
for Spring	23.9	23.8	26.2	26.2	27.8	116.3	106.1
Barley: for Autumn	26.9	25.6	28.0	29.7	29.6	110.0	99.7
for Spring	23.9	25.0	26.7	27.5	26.4	110.5	96.0
Oatmeal	25.7	22.2	23.2	24.7	19.2	74.7	77.7
Grain corn	60.1	60.9	57.7	59.5	63.6	105.8	106.9
Millet	8.9	25.2	24.4	19.6	21.1	2.4 dəfə	107.7
Paddy	22.5	31.7	30.0	29.9	32.8	145.8	109.7
Legumes	21.0	18.5	19.3	20.9	17.3	82.4	82.8

Source: Compiled by us on the basis of <https://www.stat.gov.az>

The use of mineral fertilizers in wheat production makes it possible to increase the number of productive stems of the spike and other indicators. Increasing the production of food grain also ensures a significant improvement in quality. According to the researchers, the quality indicators of spring wheat grain are formed in the field and may vary depending on soil and climatic conditions, dose and time of fertilization (Zavalin & Pasyukov, 2007).

In our opinion, thanks to a comprehensive consideration of the regional characteristics of progressive technologies for growing cereals, it is possible to significantly increase the average yield throughout the country. It is clear that we will need to use every technology available, alongside best practice farming to sustainably increase production, but this has to be accompanied by changes to food demand including measures on both consumption and waste (Bryngelsson et al., 2016).

We would like to note that taking into account the importance of soil fertility, protection of necessary microelements and timely agrotechnical care, which is one of the most important factors in increasing the production of agricultural products, "Agroleasing" OJSC always focuses on meeting the needs of the agricultural sector for fertilizers and pesticides.

The provision of quality seeds in grain production remains an urgent issue. Many researchers believe that the provision of grain fields on a national scale with quality seeds is a factor capable of creating significant positive changes in the volume and structure of production. So, as it is known from studies, the use of single-grade seeds without changing the existing cultivation technology makes it possible to increase the yield by an average of 30%.

According to the estimates of experts from the Institutes of the Ministry of Agriculture of Azerbaijan and the Center for Agrarian Science, the yield obtained by improving the seed supply of grain farms can create conditions for grain producers to receive two times more additional funds than the total amount of subsidies provided per hectare of arable land. It should be noted that the role of state and private seed farms in providing grain producers with high-reproduction seeds is increasing.

The problem of the development of grain growing is complex and multifaceted, since it combines many natural, economic, organizational, technological, technical and other issues. In modern agricultural production, for example, in countries such as Argentina, USA and Canada, the application of resource-saving environmentally friendly technologies for the cultivation of crops, including winter wheat, is one of the most important tasks (Altukhov, 2010).

Thus, an important factor is the analysis of the current state of the material technical base. Table 4 shows the level of provision of Agriculture with machinery. Compared to 2016, the

number of tractors per thousand ha of crops in 2020 increased by 2 times, from 10.5 to 21.3 units. Accordingly, the arable land per tractor also falls from 96 ha to 47 ha. There is also an increase in the number of combines per thousand hectares of arable land. The level of grain harvester supply for comparable years increased by 2.7 times, from 1.4 to 3.8 units. Accordingly, the sown area per grain harvester falls from 736 ha to 262 ha. There are also positive improvements in the technical support of agriculture on other indicators. In 2020, activities were continued to provide agricultural machinery, technological equipment, mineral fertilizers, pesticides and pedigree animals to agricultural producers. "Agroleasing" OJSC achieved significant results in liberalization of the market of equipment sold on favorable terms. However, such studies show that there is a steady rise in prices in the agricultural machinery market. First of all, this manifests itself in the fact that production costs for the purchase of equipment (tractors, combines, trucks) and inventory are increasing more and more. This is due to the insufficient technical fleet of grain producers, therefore, the power supply of enterprises decreases, and the load per unit of equipment increases, leading to an increase in the cost of purchasing spare parts and repairing them.

The high cost of means of production leads to a decrease in agricultural efficiency, a deterioration in the financial situation of grain producers in the country. The same difficulties are experienced by grain producers when purchasing chemical plant protection equipment, when purchasing seeds of highly productive varieties of grain crops, as well as when trying to apply other methods of intensifying production.

In addition to climate and the level of agricultural technologies, grain productivity is also affected by the strategic policy of the state, as well as the general economic stability of the country (Belugin, 2019).

The simulation results suggest that subsidies can generally promote grain production. Subsidies may also result in increases in grain self-sufficiency rate and stock-to-use ratio, but the increases are relatively small, indicating that the subsidies lack efficiency (Qian et al., 2018). Since 2007, the Azerbaijani government has been actively subsidizing grain producers in order to encourage them. In accordance with the decree of the president of the Republic of Azerbaijan dated June 2019, 27 No.759 "On the establishment of a new subsidy mechanism in the agrarian sector", the application of a new subsidy mechanism has begun. In the field of crop production for 2020, it has decided to determine sowing, crop and seed ratios, seed and seedling quotas and sowing needs by crops and regions. According to the decision, with a base amount of 117 USD, the sowing ratios and the amount of the sowing subsidy in 2021 were 117 USD per hectare for wheat from grain crops, 165 USD per ha for rice, 153 USD per ha

**Table 4. Provision of Agriculture with machinery for 2016–2020**

	2016	2017	2018	2019	2020
1000 ha of tractors per crop, number	10.5	13.1	20.0	20.4	21.3
Sowing per tractor, ha	96	76	50	49	47
The number of combines (machines) per thousand hectares of arable land of related crops, units					
Grain collector	1.4	1.8	3.5	3.7	3.8
Corn collector	0.1	0.1	0.3	0.2	0.2
Potato collector	0.1	0.2	0.7	0.8	0.9
Beet collector	0.1	0.6	3.6	4.8	6.8
Cotton collector	1.7	2.3	3.7	4.8	4.8
Appropriate crops per harvester (machine), ha					
Grain collector	736	567	286	272	262
Corn collector	17928	17845	3175	4105	4812
Potato collector	12558	4898	1521	1324	1163
Beet collector	7061	1740	276	210	146
Cotton collector	577	439	272	208	207
On 100 tractors, units					
Plough	6	8	12	13	13
Cultivator	0.5	1	2	3	4
Grain-Seed Sower	2	3	5	5	9
Mower	1	2	2	2	4

Source: <https://www.stat.gov.az>

for soybean crops, millet, barley, rye, etc. 94 USD per ha. In general, state support in the country covers almost the entire period of grain production and turnover.

The lowest indicator on the level of profitability of grain sold in all categories of farms was in 2020. The main reason for the decrease in the profitability of individual entrepreneurs in the increase in the cost of the product. Compared to 2016, the cost of 1 centner of grain in 2020 increased by 1.7 times. On the contrary, the cost of the product decreased by 4% in agricultural enterprises, but the level of profitability decreased from 45.8% to 39.5% in the comparable years. Agricultural production reacts poorly to price «plays» because fixed costs exceed variable costs. The high level of fixed costs often leads to the deterioration of the financial and economic situation of product manufacturers in case of a decrease in production volume.

Over the past two years, food security efforts at the global level have faced a number of challenges related to the COVID-19 pandemic and military conflicts. The events taking place today in Russia and Ukraine further complicate the situation. Russia and Ukraine occupy an important place in World Food Production and supply. Russia is the largest supplier of wheat to international markets, and Ukraine is the fifth largest exporter. It should be emphasized that the situation of non-satisfaction of the demand for high-quality grain in both domestic and international markets is obvious. Amid high demand, rising access and transportation costs, disrup-

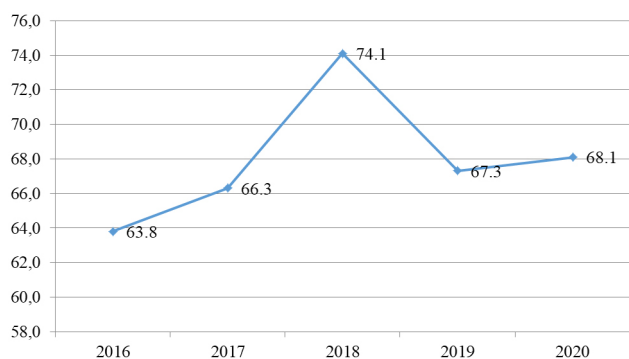
tions in harbors, rising food prices from mid-2020, reached an all-time high in February 2022.

It is unclear how intense the conflict will be and how long it will last. The likely disruption in agricultural production of the two largest exporters of basic foodstuffs by rising and unstable prices for food and funds for its production could seriously strengthen food security in the world.

Interruptions in the supply chains and logistics of grain and oil crops from Ukraine and Russia, combined with export restrictions imposed on Russia, will have a serious impact on food security. This will be felt primarily by countries that receive more than 30 percent of their grain from Russia and Ukraine, being inside Azerbaijan.

The level of self-sufficiency in total grain products in Azerbaijan is low (Figure 1). While in 2018 it was 74.1%, in 2019 it fell to 67.3%, and in 2020 it increased relatively to 68.1%. According to this indicator, wheat in 2018 fell from 64.8% in 2019 to 57.2% and in 2020 to 57.1%. In short, the level of self-sufficiency with total cereals is mainly due to the presence of other types of cereals (barley, millet, oat-meal, etc.) occurred at the expense of growth.

As can be seen from the analysis, the satisfaction of our domestic needs is still due to imports. In 2020, 82.7% of imported wheat was imported from the Russian market and 17.2% from the Kazakh market. In the supply of wheat, we are largely dependent on the Russian market (Allahverdiyeva, 2021).



**Fig. 1. The level of self-sufficiency of cereals (except paddy) with total crop production, %**

Source: Compiled by us on the basis of <https://www.stat.gov.az>

The competitiveness of grain production in any country is achieved by three competitive advantages: natural, investment and innovative. In our opinion, this sector in Azerbaijan still benefits mainly from natural and partial investment benefits, which leads to the satisfaction of domestic demand at the expense of investment. Despite the negative factors occurring in the world, maintaining and improving the standard of living of people is a task of State importance. The solution to the problems that have arisen is possible by expanding the types of support for innovators, creating preferential conditions for the activities of domestic and foreign investors. It is impossible to resist the pandemic, maintain the rhythm of economic growth processes in the agrarian sector and ensure the country's food sovereignty without activating the innovative component in the activities of domestic agricultural producers, accelerating the pace of modernization of the technical and technological base of the agro-industrial complex.

## Conclusion

Analyses reveal the seriousness of the situation. From this point of view, the Azerbaijani government must bear the burden of domestic production. Compared to 2016, the level of self-sufficiency for wheat in 2020 increased slightly, but currently the grain and grain segment of the Azerbaijani food market is more dependent on international markets. In this regard, the tasks facing grain farms consist in maximizing grain production, as well as inter-district supplies, both forage and for export. Not only the market, but also the state should play a serious role in resolving these issues. The role of the state is especially important in conditions when the economy is in a state of recession and stagflation. Because as a result of the recession accompanied by inflation, the efficiency of the market's self-regulation capabilities is significantly reduced.

The natural conditions of a significant part of our districts allow, in our opinion, to grow a high marketable wheat crop. To realize this possibility, it is necessary to introduce tangible economic levers for the commodity producer, which allows them to justify additional investments in the system of growing high-quality grain.

The assessment of the risks faced by entrepreneurs in the grain and grain products cluster and the quantitative and qualitative determination of its impact on the economic and economic results of entrepreneurial activity are of decisive importance in terms of determining the means of minimization of risks. In this regard, it is necessary to take this fact into account when assessing situations of risk and uncertainty and determining the sequence of preventive measures. If the probability of achieving the desired economic result of entrepreneurial activity in grain production is unknown, then such a situation should be considered as uncertainty, and the information base characterizing the risk should be expanded.

An important aspect of improving the efficiency of the enterprise financing mechanism in grain production is the guarantee of harmony of the regime of strict adherence of producers to the principles of market management. Supporting positive trends in grain production requires a comprehensive approach to financial support for the development of Agrarian entrepreneurship. The point is that despite the systematic measures taken, the measures carried out in the field of credit, pricing and investment have not received the necessary scale. The requirements of food security require a more active attitude to modern approaches in investment, credit and pricing policy.

The protection of the agrarian market is an important direction of the state policy of almost all countries, and balanced development in the domestic grain market is achieved to a decisive extent by creating an environment of favorable activity for entrepreneurs. Stability and abundance in the grain market is an important direction of the National Agrarian Strategy being an important condition for solving the problems of socio-economic development. The activation of the development potential of agriculture and the spheres closely interacting with it, covers a wide range from the attitude to soil fertility to the improvement of the regulatory and legal framework. It should not be forgotten that the growth of grain production in a number of exporting countries is sometimes ensured to the detriment of quality. In this case, the fact that quantity is the main criterion, encourages one-sided innovation. The process of exporting this product to developing countries should be the subject of serious environmental expertise.

Summing up our analysis, the following general conclusion was reached:

– Azerbaijan can significantly increase grain production, which can meet all domestic needs;

– it is possible to increase the volume of grain production in the country both by expanding the planting area of cereals and by increasing their productivity;

– a serious problem in grain production is the low quality of grain;

– a slight revision of the wheat plantation is essential. In this case, it would be good to determine the ways of more efficient use of natural and climatic resources, to develop a strictly scientific algorithm for using new, more advanced and economical agricultural machinery and biological means that affect the microbiological activity of the soil;

– there is a need for the development and restructuring of the grain market and AEC;

– to solve pressing problems of grain production, it is necessary, first of all, to solve legal, organizational and economic issues aimed at increasing the interest of commodity producers in increasing the production of high-quality grain;

– the development of the concept of management of grain farms and the management of its implementation on the potential of districts would have a positive impact on the growth and quality of grain production.

In short, the development of grain farms, ensuring its sustainability and effective management can be achieved only on the basis of the transition to an innovation-investment model, which is a new paradigm of scientific and technical development.

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