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**AGRICULTURAL DEVELOPMENT OF KAZAKHSTAN**

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**ABSTRACT**

This paper aims to analyze the dynamics of key indicators and reveal challenges for Kazakhstan's agricultural sector. In so doing, the paper applies statistical and comparative methods. The paper shows a significant transformation in Kazakhstan's agriculture. At the same time, many important issues such as low levels of investment and development of agricultural technologies, changing production patterns, and policy inefficiencies. Climate change and water deficit also pose significant threats to the agricultural sector. The government of Kazakhstan develops policies to strengthen the agricultural capacities of the country. The paper provides policy recommendations, that can complement the developed programs and contribute to competitiveness improvement. These policy recommendations cover both domestic and international directions.

**Keywords:** Kazakhstan, Agriculture, Agricultural investments, Agricultural technologies, Agricultural policy.

## INTRODUCTION

Kazakhstan is a resource-abundant country with substantial stocks of crude oil, natural gas and metals. Resource abundance significantly affects the country's production and trade specialization. Reliance on mineral resources exports led to low diversification of Kazakhstan's economy and caused substantial decline and transformation of manufacturing and agricultural sectors. The variability of oil prices and high dependence on exports of the limited number of products put Kazakhstan's economy at risk. The government recognizes the priority of the agricultural sector and develops programs to support producers and exporters. However, many agricultural indicators of Kazakhstan show a declining trend. According to World Bank (2023) data, employment in agriculture (as % of total employment) declined from 36% in 1991 to 15% in 2021. Despite these changes, Kazakhstan still has a high share of rural population, which equaled 42% in 2022 (44% in 1991). The contribution of agriculture to gross domestic product (GDP) also shows a substantial reduction. In particular, the share of value-added agriculture in Kazakhstan's GDP decreased from 23.3% in 1992 to 5.2% in 2022. However, it is worth mentioning that global trends in agriculture show the same declining tendency in terms of declining employment and contribution to GDP. For instance, global employment in agriculture decreased from 43% in 1991 to 26% in 2021. Alvarez-Cuadrado and Poschke (2011) argue that changes in agricultural employment were caused by both technological improvements in agriculture and industry, which attracted labor out of agriculture.

Despite a significant reduction in employment, global production of agricultural products increased substantially. According to the statistics of the Food and Agriculture Organization (FAOSTAT, 2023) of the United Nations, in 1961, the world produced \$945 billion worth of agricultural products. In 2021, the global production amounted to \$4.1 trillion. During the reported period, the global population increased from 3 billion to almost 8 billion. This shows that global demand for agricultural products increased substantially, creating opportunities for food producers.

Agriculture in Kazakhstan remains one of the frequently discussed sectors in terms of policymaking and the future of diversification. The government considers agriculture as a key to the transformation of Kazakhstan's resource-dependent economy. However, the situation in agriculture is different and the stock of its problems, accumulated since independence, doesn't allow the sector to become a driving force of the economy. The government of Kazakhstan, understanding all the challenges of the resource-based development model, tries to make the agricultural sector a priority one. The President of Kazakhstan pays a special attention for the development of the sector. In September 2019, the President of Kazakhstan Kassym-Jomart Tokayev had a meeting with agricultural producers devoted to the development of the rural areas and agro-industrial complex. President emphasized that labor productivity in Kazakhstan's agriculture is low, encouraged agricultural producers to diversify their products from traditional wheat to highly profitable ones, in particular, lentils, flax and soy, and recommended China's market as one of the most prospective direction. Moreover, he set a plan to increase labor productivity in agriculture by 2.5 times by 2022 (Forbes, 2019).

Thus, the purpose of this paper is twofold. Firstly, it analyzes key agricultural indicators of Kazakhstan and reveals progress in the country's agricultural development. Secondly, it shows key issues in Kazakhstan's agriculture. In so

doing, the paper applies statistical and comparative analysis using data from Kazakhstan’s Bureau of National Statistics, World Bank and FAO. Finally, it provides policy recommendations for the improvement of the competitiveness of Kazakhstan’s agriculture.

### AGRICULTURAL INDICATORS OF KAZAKHSTAN

Agriculture of Kazakhstan had a difficult transition period, which is well presented by the Organization of Economic Cooperation and Development (OECD, 2013). In the early periods of independence, the state was unable to support the sector given the deep economic crisis following the dissolution of the Soviet Union. In the early 2000s, the government started a stabilization and support policy. Khitakhunov (2021) argues that the resource boom of the 2000s significantly influenced Kazakhstan’s agriculture.

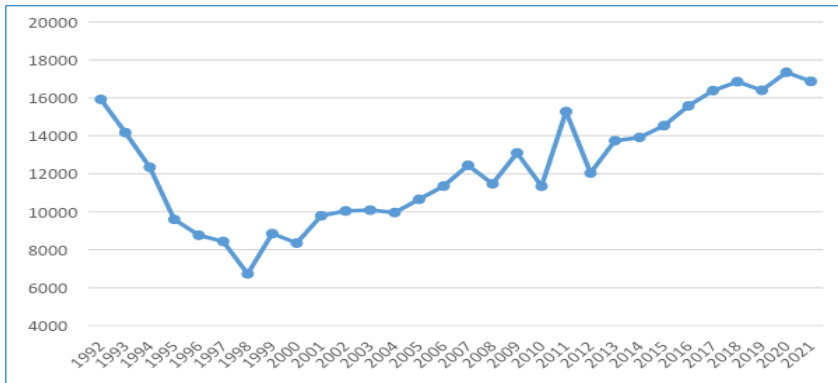
Nominal production (in current prices and exchange rate) of agricultural products increased substantially since independence. If in 1993 the total production equaled \$1.2 billion, in 2022 this number increased to approximately \$21 billion. In the same period, production of plant growing increased from \$674 million to \$12.6 billion (almost 19 times growth), and livestock – from \$363 million to \$7.9 billion (22 times growth). The share of livestock in total production increased from 32% to 39%, while the share of plant growing changed from 59% to 61% (Table 1). The share of agricultural services is negligible. Agricultural producers benefited from the favorable price changes. According to the FAO statistics, per ton producer prices of Kazakhstan for wheat decreased from \$104.5 in 1994 to \$50.5 in 1999, then started to increase gradually. A rapid increase since 2006 led to the highest level of prices, which in 2008 equaled \$224.3 per ton. Before 2015, prices were comparatively high and plummeted in 2016 with the following gradual growth. Nominal production slightly decreased in 2009, following the global financial crisis shock, which had a short-term impact. Economic slowdown, which started in 2013 and drop in oil prices, which led to significant currency devaluation, negatively affected the level of production. It decreased from \$19.4 billion in 2013 to \$10.8 billion in 2016, gradually increasing afterward. Thus, in 2022 Kazakhstan’s agricultural output achieved a historically high level. As nominal production is sensitive to price and exchange rate fluctuations, Figure 1 shows agricultural production at constant prices.

**Table 1.** *Agricultural Production in Kazakhstan*

	1993	1995	2000	2005	2010	2015	2020	2022
<b>Total output</b>								
million tenge	6046	208919	404146	749078	1822074	3307010	6334669	9481180
million USD	1150	3428	2843	5637	12366	14915	15340	20590
<b>Plant growing</b>								
million tenge	3541	107410	223503	389527	895425	1825237	3687310	5808260
million USD	674	1762	1573	2931	6077	8232	8929	12613
<i>Share in total</i>	59%	51%	55%	52%	49%	55%	58%	61%
<b>Livestock</b>								
million tenge	1907	91681	178543	355786	920777	1469923	2637461	3658758
million USD	363	1504	1256	2678	6249	6629	6387	7946
<i>Share in total</i>	32%	44%	44%	47%	51%	44%	42%	39%

Source: The author’s calculations based on data from the Bureau of National Statistics (2023)

**Figure 1.** *Gross Production Value of Agricultural Products, Constant 2014-2016 million USD*



Source: The author’s compilation based on FAOSTAT (2023) data

As data from Figure 1 shows, between 1992 and 1998 agricultural production in Kazakhstan dropped from almost \$16 billion to \$6.7 billion. In the following period, the indicator started to recover. In 2021, agricultural output reached almost \$16.9 billion. Thus, the value of agricultural production in 2021 didn’t insignificantly exceed the initial 1992 level showing limited success of Kazakhstan’s agricultural policy.

Table 2 shows changes in total cultivated area and output by-products. Total cultivated area, which initially (in 1990) equaled 35.2 million hectares started to decrease, reaching 16.2 million hectares in 2000. In the following period, with the support of government policies, the cultivated area started to increase and in 2022 amounted to almost 23.2 million hectares. Patterns of production were also changed. The share of cereals cultivation area (as % of the total cultivated area) started to increase from 66.4% in 1990 to 80.5% in 2005. Afterward, this share decreased and in 2022 equaled 69.6%. As a result, cereals production decreased from 28.5 million tons in 1990 to more than 20 million tons in 2022.

**Table 2.** *Cultivated Area (thousands of hectares) and Total Production (thousand tons)*

	1990	1995	2000	2005	2010	2015	2022
<b>Cultivated area</b>							
Total	35182.1	28679.6	16195.3	18445.2	21438.7	21022.9	23162.1
Cereals	23355.9	18877.7	12438.2	14841.9	16619.1	14982.2	16114.4
Oilseeds	266.5	548.6	448.2	669.7	1748.1	2009.7	3461.8
of which: sunflower seeds	136.9	346.2	313.9	454.5	869.3	740.7	1094.6
Potato	205.9	205.9	160.3	168.2	179.5	190.6	199.5
Vegetables	70.8	76.1	102.6	110.8	120.3	139.5	170.2
Gourds	35.8	27.7	38.8	43.4	63.3	94.7	100.3
Sugar beet	43.6	40.8	22.5	17.5	11.2	9.2	10.2
Forage crops	11065.5	8788.9	2823.7	2380.6	2555.6	3497.1	2978
<b>Total production</b>							
Cereals	28487.7	9505.5	11565.0	13781.4	12185.2	18672.8	22030.5
Oilseeds	229.8	162.0	140.1	439.7	775.4	1547.5	3051.3
of which: sunflower seeds	126.3	98.7	104.6	267.3	328.9	534.0	1304.3
Potato	2324.3	1719.7	1692.6	2520.8	2554.6	3521.0	4080.5
Vegetables	1136.4	779.7	1543.6	2168.7	2576.9	3564.9	4792.6
Gourds	301.5	162.3	421.6	683.8	1118.2	2087.6	2560.3
Sugar beet	1043.7	371.0	272.7	310.8	152.0	174.1	305.7

Source: The author’s compilation based on data from the Bureau of National Statistics (2023)

This fact shows a diversification of production as cereals production has been substituted by oilseeds. In 1990, the share of the oilseeds area was low and equaled 0.8%, later on with gathered experience of growing them their share increased to almost 15% in 2022. Cultivation of forage crops also decreased significantly from 1990 to 2009: if in 1990 the share of forage crops cultivation area was 31.5%, in 2022, this indicator equaled 12.9%, which shows that livestock production also was negatively affected by the transition period. Both cultivated area and production of vegetables and gourds increased, while for sugar beet both indicators decreased.

Livestock also significantly decreased compared to the initial period (Table 3). The numbers of cattle (1.1 times), sheep (1.6 times), pigs (4.2 times) and poultry (1.2 times) in 2022 were significantly lower than in 1991. Only the horse number exceeded the initial indicator: it increased from 1.7 million to 3.9 million (2.3 times).

**Table 3.** *Number of Livestock (thousands) and Poultry (millions)*

	1991	1995	2000	2005	2010	2015	2018	2022
Cattle	9592.4	6859.9	4106.6	5457.4	6175.3	6183.9	7150.9	8538.1
Sheep	34555.7	19583.9	9981.1	14334.5	17988.1	18015.5	18699.1	21786
Pigs	2976.1	1622.7	1076.0	1281.9	1344.0	887.6	798.7	705
Horses	1666.4	1556.9	976.0	1163.5	1528.3	2070.3	2646.5	3856
Poultry	59.9	20.8	19.7	26.2	32.8	35.6	44.3	49.8

It is worth mentioning that the Northern part of Kazakhstan mainly specializes Source: The author’s compilation based on data from the Bureau of National Statistics (2023)

in the production of cereals, the eastern part in livestock production, and the agricultural south is the home to horticultural products. The OECD (2013) shows that agriculture in Northern Kazakhstan is capital intensive, while in the south it is more labor intensive.

**CHALLENGES FOR KAZAKHSTAN’S AGRICULTURE**

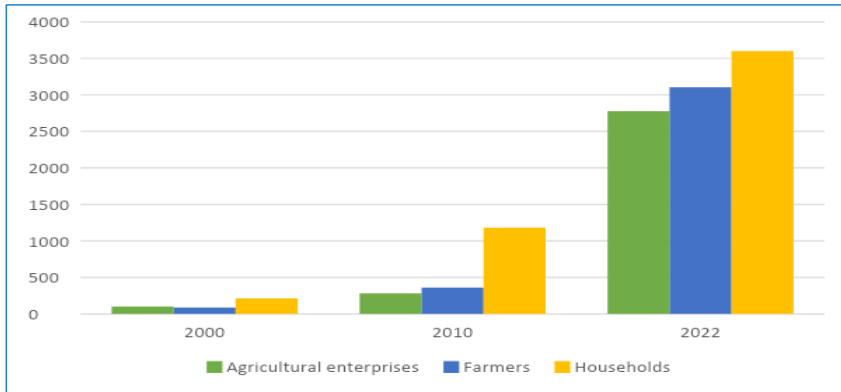
There are significant barriers to agricultural production and exports in Kazakhstan. These factors include subsistence-oriented production, low levels of investment and productivity due to technological underdevelopment, insufficient infrastructure, indebted agricultural development institutions, and inefficient subsidies.<sup>2</sup> According to Tokbergenova et al. (2018), Kazakhstan’s

2 Duflo et al. (2008) conducted a study devoted to the identification of the impact of fertilizers on agricultural yields in rural Kenya. The study shows that depending on the quantity of fertilizers used, increases in yield vary between 28% and 63%. However, while fertilizers can be very profitable when used correctly, one reason why farmers may not use them is that the official recommendations are not adapted to many farmers in the region. This study raises the problem of underuse and overuse of fertilizers. In the former case, yields can be lower which decreases profits for the farmers. The latter case can lead to environmental degradation and a reduction of the quality of harvested products.

agriculture functions in the conditions of severe degradation of agricultural lands, depletion and degradation of soil due to past state programs, erosion, secondary salinization and flooding, degradation of pastures caused by overgrazing and incomplete use of more remote pastures, soil contamination with chemicals, and the use of physically and morally outdated equipment and technology. OECD (2022) argues adverse weather conditions, pests and diseases, and price volatility pose challenges for farmers and agribusiness firms and can strain government finances. It is worth mentioning that support to producers in Kazakhstan fell from 8.5% of gross farm receipts in 2000-02 to 6.4% in 2019-21. Moreover, total support for agriculture declined from 1.6% of GDP in the early 2000s to 1.1% in 2019-21.

The following Figure 2 shows the production of agricultural products by agricultural enterprises, farmers and households.

**Figure 2.** *Agricultural Output by Producer Types, billion tenge*



Source: The author’s compilation based on data from the Bureau of National Statistics (2023)

Households dominate the production of agricultural goods. It is worth mentioning that households and smallholders provide themselves with necessary food and contribute to food security by trading their goods in local markets. However, it is difficult for them to penetrate international markets and export their products. Moreover, they cannot provide higher value-added production, insignificantly contribute to job creation, and have a limited impact on productivity and export. This indicator also raises the issue of the efficiency of the distribution of subsidies. This fact remains one of the important challenges for Kazakhstan’s agriculture. At the same time, it is important to mention that the output of agricultural enterprises shows substantial growth.

Investment in agriculture remains extremely low (Table 4). If in 2005 foreign direct investment (FDI) in agriculture equaled \$1.3 million (0.017% of total

Duflo et al. (2011) show that small, time-limited subsidies can increase fertilizer use and thus presumably be environmentally more attractive than heavy subsidies and would be less likely to encourage heavy rent-seeking. They would have no impact if fertilizer had low returns.

FDI), in 2015 it peaked and amounted to almost \$72 million (0.467% of total FDI). In the following period, the indicator decreased significantly dropping to \$9.5 million in 2020. It should be noted that FDI is important due to its spillover effects. In addition to investment, recipient countries obtain foreign technology, knowledge, expertise, and management that contribute to agricultural productivity. Thus, underinvestment is also an important problem, restricting the development of agriculture in Kazakhstan.

**Table 4.** *FDI Inflow by Sectors, million \$US*

Sectors	2005	2010	2015	2020	2022
Agriculture	1.3	6.0	71.8	9.5	32.5
Share of agriculture in total, %	0.017	0.027	0.467	0.0006	0.001
Extractive industries	1930.1	5982.2	3455.1	8226.5	12075.9
Manufacturing	346.6	2243.8	2588.5	3175.8	5427.6
Total	7916	22246	15368	17155	28028

Source: The author's compilation and calculations based on the National Bank (2023) data

Another important problem is the education and research gap. According to the Program of Agro-industrial Development of Kazakhstan for 2017-2021, agricultural specialists are prepared in 23 universities, including 3 agricultural, 9 with specialized agricultural faculties and 11 non-core universities, in which training is being carried out on agricultural specialties. Despite the significantly increased number of university grants, agriculture experiences a high deficit of professionals. There are high shortages of professionals in specializations like agronomists, veterinarians, zoo engineers, mechanical engineers of agricultural production, and agricultural process engineers. Local administrations report that 80% of agricultural business needs additional specialists. Of the graduates in agricultural specialties, only 55% were employed in the profile. Moreover, total volume of financing of agricultural research in average 10 times lower than in technologically advanced countries (FAO, 2023). Additionally, higher education facilities show low level of innovation (Sabzalieva, 2019).

Underfinanced agricultural technologies cause low level of productivity. Employment in agriculture is low in high-income countries; however, productivity of the agricultural sector is high. Canada has the highest productivity and the lowest level of employment in agriculture (1% of total employment). In 2019, value-added per worker in agriculture (constant 2015 USD) exceeded \$113 thousand in Canada and \$72 thousand in the Netherlands. In the same year, Kazakhstan's indicator was equal to \$7.6 thousand. The success of Canada can be explained by its well-developed technological and innovation systems. Despite Kazakhstan having the lowest employment in agriculture in Central Asia, Uzbekistan's value-added per worker in agriculture is the highest in the region (\$7.8 thousand in 2019). Moreover, in the Eurasian Economic Union (EAEU) Kazakhstan's agriculture remains less competitive as Russia's indicator in 2019 was equal to \$14.2 thousand. Thus, Kazakhstan has higher values of agriculture in GDP and its agriculture is labor intensive. Developed countries have more capital and technology-intensive agricultural sectors with low levels of agricultural employment.



Climate change and water resources shortages also put Kazakhstan's agriculture at risk. According to the "Concept for the development of the agro-industrial complex of the Republic of Kazakhstan for 2021 – 2030", these two factors can cause a reduction of the yield of some crops by 2030 by 9-47% to the current level, which directly affects food security issues. According to Islyami et al. (2020), higher temperatures and precipitation will hurt spring crop yields such as wheat and barley, increase rice yields and adversely affect yields of potatoes. Thus, climate change will affect agricultural productivity, household welfare, and food security. In 2023, farmers in Kazakhstan appealed to the President for urgent assistance following a difficult intense heat summer, which reduced the size of the grain crop. As a result, the yield is expected to be lower than not only last year but also the long-term average. According to estimates by producers, rains have caused damage to about 20 percent of this year's crop, making it unsuitable for use even as livestock feed. Farmers asked the President to set fixed prices for grain purchases above market rates, protectionist measures and defer loan repayments (Kumenov, 2023). Hence, key priorities of Kazakhstan's agricultural policy include transition to export of processed products, diversification of production, ensuring the country's food independence through the implementation of import-substituting investment projects for main types of food products, industrialization of agricultural production, and development of modern infrastructure. The efficiency of the state support system will be increased, an effective system of knowledge dissemination will be created, and digital technologies will be introduced. Target indicators of the Concept include increasing labor productivity, wheat yield, application of mineral fertilizers, export promotion, import substitution, self-sufficiency in basic food products, attracting investments in agriculture and food production, etc. (Adilet, 2023).

According to Kassym-Jomart Tokayev, Kazakhstan needs to increase the share of processed products in the agro-industrial complex to 70% within three years. President emphasized that a qualitative breakthrough in the industry requires a critical mass of large players. To retain its markets and increase exports, the country must have enterprises capable of ensuring volume, quality, and regularity of supplies. The example of the North Kazakhstan region, where more than 100 large dairy farms are being built, illustrates this point well. President also mentioned that the deterioration of machinery and the tractor fleet has become a serious problem; this indicator currently stands at 80%. President instructed to transform the National Agricultural Research and Education Centre into a vertically integrated agro-technological hub as modern agriculture is a high-tech industry (Akorda, 2023). At the same time, Kassym-Jomart Tokayev announced that the government would allocate one trillion tenge in the next three years for the development of agricultural cooperation (KazTAG, 2023). These support measures should take into consideration the attitudes of farmers. Kaliyeva et al. (2020) conducted a study on the attitudes of dairy households to participate in cooperatives in the Akmola region of Kazakhstan. According to their findings rural households which hold positive views towards cooperatives, have a relatively high production capacity, are aware of cooperatives, and do not have a dairy business as a source of household income. Hence, to increase milk production through cooperatives, the authorities need to develop a policy that supports rural households that have the capacity to produce. The policy needs to be attractive to rural households that consider dairy as a source of income. Moreover, it should be well explained to the targeted rural households.



Thus, reliance on research findings and consideration of them will increase the efficiency of government programs.

### **Discussion and Policy Recommendations**

As the government of Kazakhstan has intentions for economic diversification, it should primarily focus on agriculture. Firstly, the implementation of any development programs needs time for markets to be adjusted, and the government's comprehensive strategy should target the above-mentioned problems. As subsistence-oriented production dominates Kazakhstan's agriculture, the government should prioritize policy towards its transformation. In the villages, despite claims of local administrations, support for agriculture is very limited. This is not the case that can be solved by subsidies or low-rate credits. The basic problem of rural agriculture is a lack of knowledge and education on how to do agricultural business. For instance, in personal interviews, small farmers recognized that they had never thought about exporting their products, even to neighboring countries. The basic goal of rural agriculture is to provide and keep subsistence levels. Despite this basic explanation, other classical problems of the agricultural sector remain, including lack of capital investment, land and water shortage, mismanagement of water resources, lack of technology, marketing practices and vet services. Small farmers and households cannot be considered valuable contributors to productivity as their main goal is to provide subsistence and satisfy their own needs. They cannot participate in international trade. Their positive contribution links with satisfying local demands in bazaars and creating seasonal employment. The rural population tries to self-organize all of these activities by learning by doing. Subsidies are rare and it is difficult to receive them. For instance, according to Khabar 24 (2023), farmers in the Kostanay region cannot receive agricultural subsidies on time due to lack of specialists in the relevant department. This year, 12.5 thousand applications were accepted from agricultural producers and more than 7.5 thousand requests remained unconsidered so far. Nursultan Kابدelov, head of the subsidies department of the Department of Agriculture mentions that 1 specialist and the head of the department check about 5 thousand applications for fertilizers and pesticides. To address these issues, 4 additional specialists have been allocated. EIDala Media (2023) reported that 90% of farmers couldn't receive subsidies due to problems with the work of the Unified State Information System for Subsidies.

When citizens have no information about government programs, including subsidies' advantages and benefits, then these programs and information about them transform into exclusive ones and are distributed unevenly, making opportunities unequal and economic costs higher. All of these factors create a situation when any kind of government policies or initiatives are perceived with skepticism by the public.

Secondly, the government should attract FDI in agriculture and stimulate domestic investment. Agricultural development should be based on a bottom-up scheme rather than an up-down one. If the government sets goals without considering market capacities, the probability of success will be minimal. For instance, an increase in productivity initially needs more capital expenditure and a better-educated labor force. Afterward, the demand for innovation will gradually be increased if the sector is market-driven. Additional needs for better agricultural performance include lower taxes, government services, stable internal and

international markets and certainty in macroeconomic policy. If sectoral growth can be achieved only by high subsidies and minimal participation of the private sector, this will cause market inefficiency. Government policy should also take into account features of the agriculture of Kazakhstan.

The government should also focus on education reforms to train better-educated professionals and conduct research projects to increase the productivity of the sector. The roles of agricultural universities and research institutes should be strengthened. Moreover, research in agriculture should become a priority and fundamental and applied research should be financed by the government, and the funding should be increased significantly. The government should also focus on the provision of high-quality services, and financing the sector based on market principles. There is a need for intensification of internal competition and exports of high-value-added products to the neighboring countries and regions with potentially high demand for agricultural products. Moreover, it is important to create agriculture-centered regional/global production/value chains with technologically advanced developed countries.

Thirdly, it is important to implement programs and policies to develop agricultural technologies. All programs and policies must be transparent and fair. Moreover, they also should be carefully assessed, efficient and evidence-based.

At the international level, two basic policies may affect the agriculture of Kazakhstan and both of them are connected with Kazakhstan's multi-vector diplomacy. The first policy is regionalism and membership in the Eurasian Economic Union. The second option is active participation and involvement in the China-led Belt and Road Initiative (BRI). Regionalism opens new opportunities for the regional producers. However, competition may increase and, in this case, Kazakhstan has more disadvantages due to higher productivity in Russia as well as higher public support in its partner countries.

The BRI should be considered not only as a transition potential of China's products to Russia and Europe but also as an opportunity to increase agricultural exports to China. Kazakhstan is the key player in this initiative, which gives it leverage to receive preferences from China for Kazakhstan's agricultural exports. The key factor here is the improvement of standards of production. If this criterion fits the global standards, then exports to China, the Middle East and Europe can be increased substantially.

To achieve this goal, further steps (except improvement of production standards) should be taken. These include a forecast of demand in the promising markets (EU, Russia, and China), promotion of free trade in agricultural products while negotiating new FTAs, unification of agricultural support in the EAEU, and increase in the level of agricultural services. The regionalism schemes should be used to form the Eurasian value chains using the potential of all EAEU members as well as non-participating Central Asian countries.

Production and export of high-value-added products to the markets of developing countries. These measures can help to increase production standards via *learning through exporting* schemes. It should be noted that higher incomes and rising wages affect the diets of people and will require diversity in their nutrition. High-income countries are a good destination for Kazakhstan, so

production standards should be improved significantly. The government should give tax exemptions to private agricultural companies, which run their research centers or cooperate with universities or institutes. Market research programs in particular export markets should be implemented by economists. Support of research and development, and special programs to educate farmers also should be taken into consideration.

The government should also work on the strengthening of the following links. These should include higher levels of cooperation between government, agricultural businesses, universities, and research centers, between universities and agricultural business. Moreover, there is a need for improvement of rural governance. According to the findings of Kosec and Wantchekon (2020), the provision of information about government policy is not sufficient. They show that to make programs successful, information should be relevant and individuals must have the power and must be incentivized.

Pomfret (2016) recommends transferring technical knowledge and technology, shifting from controlling agriculture to an environment that facilitates farmers' access to knowledge, resetting agricultural policy from control to facilitation, funding agricultural research, extension services, and provision of information to farmers. Moreover, it is necessary to reform land tenure, improve rural infrastructure, devise institutions and policies to improve water use and provide countrywide and regional reforms and cooperation.

Thus, all support instruments should carefully be assessed. Inefficient policy instruments should be abolished, and support for rent-seekers should be stopped. In general, the government should work on policies to increase competition within the economy of Kazakhstan, which, in turn, can stimulate innovation and productivity growth. Otherwise, inefficient subsidies and other government instruments will transform, reduce food security and discourage competitiveness.

The Government should understand that agricultural development is not only about making producers and farmers work, it is also about how to make local administrations work. Moreover, it is about how to make them cooperate and increase their efficiency.

## CONCLUSION

Agriculture of Kazakhstan remains a key sector, that the country's government is trying to transform and develop. It had a difficult transition period during which output plummeted and the government had no reliable instruments to support it. After the stabilization period, Kazakhstan started to transform the sector providing subsidies and services support. Support measures resulted in higher output of agricultural and food products. However, gross production insignificantly exceeded the initial levels, meaning that the sector needs further reforms and state support.

There are important challenges for Kazakhstan's agriculture. These include the dominant role of smallholders, low level of investments, lack of specialists, outdated equipment, low technological capacity, and management issues. Agriculture in Kazakhstan remains labor intensive. Moreover, climate change

and water shortages pose additional threats to Kazakhstan. These challenges and problems affect the productivity and competitiveness of the country's agriculture. To overcome these problems, the state develops different support programs aimed at improving the competitiveness of the sector.

This paper also provides policy recommendations, covering the improvement of domestic regulation and penetration of international markets through trade policy. Achievement of progress in agricultural development will require a strong collaboration between the state, private sector and academia. If efficient links between government, agricultural business and universities are created, then the production and trade capacities of Kazakhstan can be increased, which will result in diversification and higher competitiveness.

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