

Advances in Global Competitiveness of Agriculture in the Republic of Kazakhstan

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Abstract: The opportunity to increase the competitiveness of the agrarian sector of the Republic of Kazakhstan is considered in this study. The nation's agrarian sector has considerable unrealized potential which can be successfully used to advance the nation's global competitiveness. Data are presented to summarize changes in Kazakh agriculture during the past decade and to suggest fundamental strategies for the future.

Key words: Agriculture, crop production, land area, quantity harvested, number of livestock

INTRODUCTION

Kazakhstan declared its independence in December 1991 and began to transform its economy from state ownership to private ownership (Larson, 2003). Several sectors have progressed in making this transformation and are assuming a role in the global economy such as oil and other extraction industries. Kazakhstan's progress in developing a market economy was recognized by the United States in 2002 (US Department of State, 2011).

In an effort to reduce its economic reliance on oil and extraction industries, the Kazakhstan government is pursuing a strategy of diversifying its economy by developing targeted sectors including food processing (Central Intelligence Agency, 2015). With its large land area, agriculture and food could emerge as a major industry in the Kazakh economy. This study reviews the progress of transforming the Kazakh agriculture industry during the past two decades and suggests policies or practices to facilitate further growth so the agrarian sector can achieve its expected potential.

Expectations for Kazakh agriculture: The overall global competitiveness of the Kazakh economy is expanding which suggests that the agrarian sector also should be able to expand more rapidly. Producing competitive agricultural and food products and participating in global markets will contribute to the development of the overall Kazakh economy. But the agricultural and food products must meet quality standards for the Kazakh agrarian sector to be globally competitive. Such production is necessary if Kazakhstan is to develop its national economy as a member of the global economy.

The agrarian sector occupies a leading position in the Kazakh economy. Another measure of its value is defined by the essential commodities the sector provides the nation's population food. In addition, Kazakhstan has

substantial land area suitable for agriculture which is an opportunity to develop a globally-competitive agriculture and food sector. Finally, agriculture has a substantial impact on the national society because nearly half of the nation's population is closely associated with rural territories (Kazakhstan's agricultural population is 7.5 million persons or 43.4% of the nation's population) (Committee of Statistics of the Republic of Kazakhstan, 2015). Advancing the agricultural sector is a priority for Kazakhstan's social and economic development.

Kazakhstan's agricultural land occupies >220 million ha allowing the nation to be the seventh largest wheat producer in the world. The nation harvests 14-15 million tons of wheat annually; it is Kazakhstan's leading agricultural commodity export. Other major crops include barley, cotton and rice. Primary livestock products are dairy, leather, meat and wool with the potential to increase production of these commodities because 68% of the nation's agricultural land is pasture and hay land (US Department of State, 2011).

The sharp recession since 2007 has reduced output and diminished the competitiveness of Kazakhstan agricultural production and foodstuffs. Consequently, the problem of how to enhance Kazakh agriculture needs to be studied and measures need to be taken to increase the competitiveness of Kazakh agricultural production and food processing.

The underlying challenge is to continue the transition from the previous economic system. However, private ownership of businesses means individuals bear the associated risks rather than the government. Business owners also decide which opportunities to pursue and risk exposure is a consideration in making those decisions. Willingness and ability to bear the risks associated with private business ownership must be developed. Furthermore, government policy can impact how members of the private sector respond to the need to bear risk and thus can influence the development of the

agriculture and food sector. Government policies that do not reduce risks could restrict the desired expansion of Kazakh agriculture.

Kazakh agriculture like many sectors of the Kazakh economy has experienced extensive changes, since the nation's independence in 1991. To understand the opportunities for Kazakh agriculture, data from the past 20 years are investigated. Comparing data from 1990 (about the time of Kazakhstan independence) to more recent data reveals changes in the ownership and structure of agricultural entities and the use of agricultural land. The comparisons also suggest opportunities for Kazakhstan to continue advancing its agricultural sector. To better understand the changes since independence some of the nation's policy changes also are mentioned. The purpose this study is to suggest opportunities for Kazakhstan to expand its agriculture.

MATERIALS AND METHODS

The transition to a market economy has shifted the type of business formations used in Kazakh agriculture. Some published industry data are categorized accordingly. Definitions of the categories are as follows: Agricultural Formations encompasses all forms of Kazakh agricultural business organizations. Agricultural Enterprises are agricultural formations organized as distinct legal entities and engage in:

- Producing, storing and processing agricultural products or
- Rendering services in the field of agriculture. Agricultural enterprises are either state entities or non-state entities

State Agricultural Enterprises are agricultural enterprises that do not own the property assigned to them. At this time, state agricultural enterprises often provide scientific and technical agricultural expertise and serve businesses that produce agricultural products. Breeding factories, skilled-selection stations, cattle-breeding complexes, enterprises for reproducing fish and animals and various scientific research institutes, establishments and educational institutions are examples of state agricultural enterprises.

Corporate (non-state) agricultural enterprises are privately owned agricultural businesses such as joint-stock companies, associations and production co-operatives. These entities produce agricultural products or provide services similar to state agricultural enterprises. They differ from the state agricultural enterprises only that they are proprietors of their property.

Country/farm economies are farm and agribusiness entities owned by a family and in which the family

provides the majority of labor needed to operate the business. Because the businesses are family-owned, they are generally not organized as separate legal entities. Country/farm economy use agricultural land to produce agricultural products but also engage in processing and selling the production. Individuals engaged in enterprise activity without forming a separate legal entity are considered part of the country/farm economy.

A country economy is a family business based on general joint property. The business is created when it receives the state certificate entitling the business to rent or to continue using agricultural land.

A farm economy is an individual business and arises when it receives a patent to conduct agricultural activity. A farm economy also can be organized as an association of agricultural commodity producers based on a contract or an agreement among joint economic activities (Committee of Statistics of the Republic of Kazakhstan, 2014).

Farm population is the specific segment of agrarian economy that uses the resources and labor of rural families. The intent is that farmers meet their own needs by producing food on land located in a rural area or a residential suburb. The agricultural land is given to farm populations to possess and use for agriculture production. These categories illustrate the transition of Kazakh agriculture from state ownership to private business during the past 20 years. The Committee on Statistics of the Republic of Kazakhstan is the primary source of the data reviewed in this analysis.

RESULTS AND DISCUSSION

The productivity of Kazakh agriculture declined following the nation's independence but began to recover a decade later (Table 1). Agriculture productivity has increased each year, except for crop production in 2012. Increased production is necessary to increase exports; Kazakh agriculture is progressing on this point.

The current structure or organization of the sector, however is different than the state-owned enterprises that operated prior to independence. The Republic of Kazakhstan when initiating reforms in the 1990s, emphasized economic sectors that were least developed as a market economy. Accordingly, a strategy was to convert from state agricultural enterprises to non-state organizations. A variety of business ownership and management structures have been formed.

Agricultural formations: The majority of Kazakh agricultural businesses in 1990 were state enterprises. The total number of operating agricultural formations was

Table 1: Gross output for Kazakh agriculture as a percent of the previous year's output

Indicators	1990	1995	2000	2005	2010	2012	2013	2014
Agricultural gross output	106.8	75.6	95.8	107.3	88.3	82.2	111.7	100.8
Crop production	124.0	75.1	92.0	109.5	77.4	72.4	120.7	98.4
Animal industries	98.1	75.7	100.0	104.6	102.6	96.2	102.4	103.8

Table 2: Number of agricultural formations in selected categories (end of year)

Years	Total agricultural formations	Operating agricultural businesses		
		Total	State, corporate (non-state) agricultural enterprises	Country/farm economy
1990	-	4918	4594	324
1995	-	36285	5500	30785
2000	111,899	81,078	4705	76,373
2005	196,417	161,962	4984	156,978
2010	197,033	176,822	6493	170,329
2011	214,008	188,616	6197	182,419
2012	197,431	172,821	7965	164,856
2013	215,322	189,930	7189	182,741

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>190,000 in 2013; a 44-fold increase since 1990. The number of country/farm economy business increased 570 times during the same time (Table 2).

In all regions, a bipolar agrarian structure emerged with large corporate (non-state) agricultural enterprises at one extreme and many small country/farm economy and farm population units at the other extreme (Espolov *et al.*, 2004).

Agricultural land use: The change in the structure of farm businesses also changed the distribution of land between state and non-state land users. Country/farm economy uses 56.7% of the agricultural land that is 52,773,200 ha of 93,099,000 ha in 2013 while agricultural enterprises (primarily state agricultural enterprises) operate 40,084,900 ha (Table 3).

Total agricultural land used in 2000 was less than the total used in 1990: 86,378,900 ha compared to 197,579,500 ha. The area used from agricultural production began to recover thereafter and reached 93,099,000 ha in 2013. Both subcategories of arable land and hay and pasture lands contributed to this reduction: 31.5% reduction in arable land and a 59.2% reduction in hay and pasture land usage from 1990-2013. But like agriculture's gross output, land usage has been expanding for several years.

Land reform has favored development by non-state land users and reducing the state monopoly over agricultural lands. About 93,099,000 ha of agricultural lands are now leased to agricultural commodity producers; the remaining agricultural is not used (Table 3). There were ~98,000,000 unused ha of hay and pasture land in 2013, compared to total land use in 1990 and 12,000,000 ha of unused arable land.

The reduction in land usage reflects the redistribution of agricultural lands and the introduction of a payment to

land managers. However, land managers refused to operate low productivity lands which resulted in some lands not being operated. But the area of agricultural lands has grown each year for the last several years. Arable land represented 26.1% of total agricultural land use in 2013 (24,319,000 ha of 93,099,000 ha) compared to 18% in 1990 (35,502,300 ha of 197,579,500 ha). Hay and Pasture lands were 81.9% of total agricultural land usage in 1990 (161,739,000 ha of 197,579,500 ha) compared to 70.9% in 2013 (65,986,300 ha of 93,099,000 ha).

In 2013, agricultural enterprises operated ~2/3 of the arable land and produced much of the nation's grain (Table 3 and 4). These are generally large-scale operations (8,00 enterprises operating 15.1 million ha) (Table 2 and 3). Hay and pasture land are generally operated by a large number of relatively small country/farm entities (185,000 entities operating 42.2 million ha) (Table 2 and 3). These data suggest that much of livestock production in Kazakhstan occurs in small-scale operations.

Additional lease arrangements in the future would likely expand forage production and the development of animal industries because the greatest portion of unused land is hay and pasture land.

Agriculture within the overall economy: In 2014, the value of agriculture gross output reached 2,509.9 billion tenge. Despite increase in volumes of output and stable development rates in agriculture, the sector's share of Gross Domestic Product (GDP) declined due to high economic growth rates in the extraction industries. Agriculture generated only 6.5% of Kazakhstan's GDP in 2014 compared to 29.5% in 1990.

Farm population and country/farm economy produced 77% of Kazakhstan's agricultural output in 2014 but the percent produced by agricultural enterprises has generally been increasing since 2000 except for agricultural output in 2010 and in 2012 (Fig. 1).

Table 3: Land area used for agricultural production in Kazakhstan by type of business structure

Years	Total land used (1000 ha)	State and non-state agricultural enterprises (1000 ha (%))	Country/farm economy (1000 ha (%))	Farm population (1000 ha (%))
All agricultural grounds				
1990	197,579.5	197,215.4 (99.8)	102.3 (0.05)	261.8 (0.1)
2000	86,378.9	57,127.1 (66.1)	28,904.7 (33.5)	347.1 (0.4)
2010	89,802.2	42,815.1 (47.7)	46,685.7 (52.0)	301.4 (0.3)
2012	90,341.9	40,244.8 (44.5)	49,793.4 (55.1)	303.7 (0.3)
2013	93,099.0	40,084.9 (43.1)	52,773.2 (56.7)	240.9 (0.3)
Arable land				
1990	35,502.3	35,325.1 (99.5)	9.7 (0.03)	167.5 (0.5)
2000	19,379.8	13,077.7 (67.5)	6,050.2 (31.2)	251.9 (1.3)
2010	23,583.9	14,504.0 (61.5)	8,861.8 (37.6)	218.1 (0.9)
2012	24,403.4	14,956.5 (61.3)	9,224.9 (37.8)	222.0 (0.9)
2013	24,319.0	15,016.6 (61.7)	9,153.0 (37.6)	149.4 (0.6)
Hay and pasture land				
1990	161,739.0	161,634.0 (99.9)	92.6 (0.06)	12.4 (0.01)
2000	63,342.4	42,096.1 (66.5)	21,215.5 (33.3)	30.8 (0.05)
2010	63,074.6	26,959.1 (42.7)	36,083.2 (57.2)	32.3 (0.05)
2012	63,164.0	24,108.6 (38.2)	39,023.5 (61.8)	31.9 (0.05)
2013	65,986.3	23,824.7 (36.1)	42,125.1 (63.8)	36.5 (0.05)

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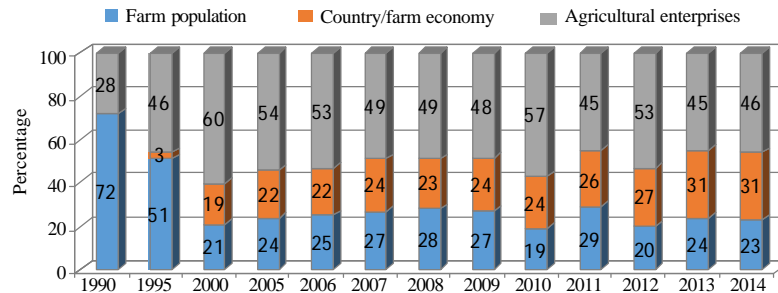


Fig. 1: Agricultural production by type of business structure (Committee on Statistics of the Republic of Kazakhstan)

Total area of land used for agricultural crop production increased >31% from 2000-2014 but still represents only 60% of the land used for agricultural production in 1990 (Table 4). Vegetable production and gardens used more land in 2013 than in 1990 or 2000 (Table 4). The area of land used by various agricultural enterprises for crop production increased 1.3 times from 2000-2013 due to consumer demand and commodity markets (Table 4). In comparison, the area used for crop production by all categories of agricultural formations/businesses declined 54% between 1990 and 2000. The area used for forage crops declined 75% and potato area declined by 22% (Table 4). The multi-structure economy radically changed the configuration of crop production. In 1990, practically all grain and commercial crops had been concentrated in the agricultural enterprises. By 2014, production was distributed among a variety of enterprises (Table 4). Cultivation of potato and vegetables shifted primarily to small enterprises that is the farm population (Table 4).

Recall that agricultural enterprises in 1990 were about 50% state and 50% non-state but by 2013, nearly all agricultural enterprises were non-state (Table 2). Similarly,

there were nearly no country/farm economy in 1990 but a significant number of small agricultural units were operating by 2013. Both of these observations indicate a decline in the area operated by state enterprises and an increase in the area operated by privately-owned country/farm economy. Changes in the sizes and structure of the production areas under crops are reflected in the productivity and total harvest of agricultural crops (Table 5).

Quantity harvested: Production of grain crops is a strategic basis for developing agriculture; the level of its production defines the degree of food security for the nation. Legume production dropped significantly between 1990 and 1995 as fertile arable lands were shifted to grain crops. Consequently, total quantity of legumes harvested declined (Table 5).

Formation of new business entities, their response to market conditions and state support for rural commodity producers has caused crop production to recover since 1995. Annual grain production has exceeded 11 million tons since 1999. However, grain production is characterized by instability during that time. Total

Table 4: Land area used for main agricultural crop production by type of business structure

Indicator	1990 (1000 ha (%))	2000 (1000 ha (%))	2010 (1000 ha (%))	2014 (1000 ha (%))
All categories of economy				
Total area used for crop production	35,182.1 (100)	16,195.3 (100)	21,438.7 (100)	21,244.6 (100)
Grain crops	23,355.9 (66.4)	12,438.2 (76.8)	16,619.1 (77.5)	15,291.5 (71.9)
Olive cultures	266.5 (0.8)	448.2 (2.8)	1,748.1 (8.1)	2,299.5 (10.8)
Potato	205.9 (0.6)	160.3 (1.0)	179.5 (0.8)	186.8 (0.9)
Forage crops	11,065.5 (31.5)	2,823.7 (17.4)	2,555.6 (11.9)	3,109.9 (14.6)
Vegetables	70.8 (0.2)	102.6 (0.6)	120.3 (0.6)	137.7 (0.6)
Garden cultures	35.8 (0.10)	38.8 (0.2)	63.3 (0.3)	89.8 (0.4)
Agricultural enterprises				
Total area used for crop production	35,011.5 (100)	10,855.4 (100)	13,105.3 (100)	12,826.2 (100)
Grain crops	23,346.8 (66.7)	8,618.6 (79.4)	10,704.1 (81.7)	9,860.0 (76.9)
Olive cultures	264.7 (0.8)	181.8 (1.7)	960.7 (7.3)	1,341.0 (10.5)
Potato	102.0 (0.3)	8.7 (0.1)	10.6 (0.08)	15.0 (0.1)
Forage crops	11,037.9 (31.5)	1,987.2 (18.3)	1,407.3 (10.7)	1,587.0 (12.4)
Vegetables	48.3 (0.1)	10.7 (0.1)	6.6 (0.05)	8.0 (0.06)
Garden cultures	30.2 (0.1)	4.4 (0.04)	4.8 (0.04)	8.1 (0.06)
Country/farm economy				
Total area used for crop production	13.9 (100)	4847.8 (100)	8,075.4 (100)	8,196.8 (100)
Grain crops	4.8 (34.5)	3722.5 (76.8)	5,901.9 (73.1)	5,424.6 (66.2)
Olive cultures	-	216.3 (4.5)	783.3 (9.7)	957.0 (11.7)
Potato	0.1 (0.7)	17.2 (0.4)	38.9 (0.5)	56.4 (0.7)
Forage crops	9.0 (64.7)	719.0 (14.8)	1114.6 (13.8)	1500.3 (18.3)
Vegetables	0.0 (-)	22.8 (0.5)	48.7 (0.6)	65.5 (0.8)
Garden cultures	-	18.6 (0.4)	46.8 (0.6)	70.7 (0.9)
Farm population				
Total area used for crop production	156.7 (100)	492.1 (100)	258.0 (100)	221.6 (100)
Grain crops	4.3 (2.7)	97.1 (19.7)	13.1 (5.1)	6.9 (3.10)
Olive cultures	1.8 (1.2)	50.1 (10.2)	4.1 (1.6)	1.4 (0.6)
Potato	103.8 (66.2)	134.4 (27.3)	130.0 (50.4)	115.4 (52.0)
Forage crops	18.6 (11.9)	117.5 (23.8)	33.7 (13.1)	22.6 (10.2)
Vegetables	22.5 (14.4)	69.1 (14.0)	65.0 (25.2)	64.2 (29.0)
Garden cultures	5.6 (3.6)	15.8 (3.2)	11.7 (4.5)	11.0 (5.0)

Table 5: Total Grain and Legume Harvested, thousand tons

Indicator	1990	1995	2000	2010	2007	2014
Grain and legume crops	28,487.7	9505.5	11,565.0	12,185.2	26960.5	17,162.2
Wheat	16,196.8	6490.4	9073.5	9638.4	22732.1	12,996.9
Corn on grain	442.1	135.6	248.8	462.0	482.0	664.0
Barley	8500.2	2208.1	1663.6	1312.8	2593.1	2411.8
Rye	838.8	84.4	48.3	42.1	28.4	60.6
Oats	610.6	249.8	181.8	133.8	258.3	225.9
Buckwheat	173.9	53.0	28.7	27.0	37.4	46.5
Millet	939.3	39.2	62.3	16.5	43.4	27.3
Legumes	154.4	29.4	25.6	69.3	134.9	51.2
Rice	578.7	183.5	214.3	373.1	346.8	377.0

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quantity harvested since 1999 has varied from 11.6-27.0 million tons (Table 5). The data suggest that producers use basic or simple technologies and thus production is more dependent on weather conditions and variable.

Livestock production: Agrarian transformations in Kazakhstan have defined essential changes in animal industries as reflected by the quantity of livestock production and their distribution among the categories of the economy. The cattle-breeding branch has endured a difficult transformation. For 24 years in all categories of economy, the number of cattle declined by 38.2%, sheep and goats declined by 49.8%, pigs declined by 72.6% and birds/poultry declined by 43.1% (Table 6).

Nevertheless since 2000, livestock in all categories of economy has increased. In the country/farm economy, cattle livestock in 2014 had increased 7.9 times compared to 2000. Sheep and goats increased by 7.4 times, horses increased 9.9 times and pigs increased 3.2 times during the same period (Table 6).

The structural parity of livestock cattle between categories of economy also has changed. During the years of reforms, the number of livestock held by the large agricultural enterprises declined (7.6% of horned cattle and 4.3% of sheep and goats) whereas the number of livestock cattle in farm population economy has increased. In 2014, these economies had 3916.5 thousand horned cattle (64.9%), 521.0 pigs (58.9%), 10,883.5 thousand sheep and goats (60.7%) and 1040.0 thousand horses (53.7%) (Table 6).

Table 6: Number of livestock and poultry by type of business structure, thousand heads

Years	Homed cattle	Cows	Sheep and goats	Horses	Pigs	Birds (million) goals
All categories of economy						
1990	9,757.2	3,368.0	35,660.5	1,626.3	3,223.8	59.9
2000	4,106.6	2,014.7	9,981.1	976.0	1,076.0	19.7
2010	6,175.3	2,751.3	17,988.1	1,528.3	1,344.0	32.8
2014	6,032.7	2,835.1	17,914.6	1,937.9	884.7	35.0
Agricultural enterprises						
1990	6,739.6	1,788.4	29,249.4	1,115.3	2,559.3	39.9
2000	344.4	118.0	949.8	72.7	103.0	9.6
2010	312.1	108.5	888.9	90.2	235.5	18.1
2014	459.3	173.5	777.2	118.7	262.0	22.8
Country/farm economies						
1990	5.0	1.7	51.1	0.9	0.8	-
2000	209.5	93.9	840.4	78.8	31.7	0.2
2010	877.6	365.6	4,813.5	421.1	95.0	0.3
2014	1,656.9	828.3	6,253.8	779.2	101.7	0.4
Farm population						
1990	3,012.6	1,577.9	6,360.0	510.1	663.7	20.0
2000	3,552.7	1,802.8	8,190.9	824.5	839.0	9.9
2010	4,985.6	2,277.2	12,285.7	1,017.0	1,012.6	14.3
2014	3,916.5	1,833.4	10,883.5	1,040.0	521.0	11.8

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Kazakh animal industries depends on farm population where opportunities to use the high-efficiency technics and new technology are low. The animal industry relies on manual, low-productive, intensive work.

CONCLUSION

The radical reform of Kazakh agriculture to a market economy has been largely accomplished. As a result, a multi-structure agrarian sector has emerged and private ownership has become the prevailing form of management. The transformed industry is the foundation for serving the market.

The basic problem in animal industries is its small-scale production and the problems associated with small breeding herds, maintaining quality cattle-breeding production, backwardness of forage production and high cost of 90% of livestock agriculture in personal farmsteads. Primitive technologies used to maintain and feed the animals, out-of-date production technology and product processing and low level of mechanization and automation of processes combine to limit animal production. Insufficient development of specialized farms with average and large-scale production and a weak forage reserve also lead to low efficiency in cattle and bird production.

Small-scale production is not in position to achieve scientific and technical progress to make Kazakh agriculture competitive or to meet world standards for quality. At small-scale production, the market share sharply decreases; there are no means to advertise or promote investment in innovative resources for quality development.

Livestock production by farm population will lead to practices that will not allow farmers to increase their efficiency. To address these problems, it is necessary to develop average and large-scale animal industry to increase density of breeding animals, to create modern cattle-breeding farms for the dairy and meat sectors to build processing facilities and to expand forage crops.

Without stimulus, it will be difficult if not impossible to increase the volume of livestock produced by agricultural enterprises. Potential business owners may consider the risks too great. The market without stimulus cannot solve the social and economic problems which now exist. It is important to provide producers with the economic resources to adopt modern agricultural technologies, develop agricultural processing and thereby provide Kazakh producers economic opportunities similar to those available in neighboring countries.

The agrarian sector of Kazakhstan has some advantages and considerable non-realized potential that can be used to advance the global competitiveness of its agricultural industry. Priority should be placed on identifying ways to increase production and processing of agricultural products and food, so supply exceeds the quantities needed for internal (domestic) consumption. The excess can then be exported. This practice, however, must consider natural-climatic zones, growth of capacities, employing innovative processing and ecological cleanliness of domestic production.

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REFERENCES

- Committee of Statistics of the Republic of Kazakhstan, 2014. Agriculture, forestry and fishing in the Republic of Kazakhstan: 2009-2013. <http://www.stat.gov.kz>.
- Committee of Statistics of the Republic of Kazakhstan, 2015. Preliminary data for 2014. Statistical Yearbook. <http://www.stat.gov.kz/>.
- Central Intelligence Agency, 2015. Economy overview. <https://www.cia.gov/library/publications/the-world-factbook/geos/kz.html>.
- Espolov, T.I., R.Yu. Kuvatov and U.K. Kerimova, 2004. Increase of Efficiency of Agriculture in the Conditions of Integration with Foreign Markets, Almaty, pp: 145.
- Larson, A.P., 2003. Kazakhstan: Finishing the Transformation. *Disam*, 25: 22.
- US Department of State, 2011. Background Note: Kazakhstan. <http://www.state.gov/r/pa/ei/bgn/5487.html>.