

## Improving the Competitiveness of Crop Production in the Republic of Kazakhstan

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### Abstract

The article deals with the problem of competitiveness and efficiency of crop production in the Republic of Kazakhstan. Presented detailed analysis of the crop industry condition reveals the importance of the pacing factors limiting production, demand, and possible yielding of different types of products, as well as its dynamic entry into the market. It was established that per hectare subsidies in crop production were ineffective and did not encourage the interest of agricultural producers in increasing productivity. The conducted analysis has led to the conclusion that to improve the production efficiency and product competitiveness, the agricultural businesses should carry out certain activities to improve the quality of seed grain, special tillage, as well as the appropriate fertilizer distribution depending on the needs of the soil in nutrients, and other measures that would ultimately contribute to the growth of agricultural product quality characteristics.

**Keywords:** Competitiveness; Crop production; Crop output; Agricultural sector; Production; Efficiency; Agricultural enterprise; Crop acreage; Cereal crops.



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### 1. Introduction

The ongoing changes in the agricultural sector associated with the formation of market relations are accompanied by a significant transformation of the structures existing for decades, their reorientation to self-sufficiency, risk, effective search for sales channels, etc.

Crop production is traditionally the leading industry which essentially influences the livestock raising development. Vested interest of agricultural producers to get the maximum profit within the shortest possible time often leads to disruption of the technological cycle of crop cultivation and crop rotation that reduces the productivity and efficiency of crop production (Zenin, 2011).

For the period from 2000 to 2017, the Republic of Kazakhstan has manifested a definite tendency in reduction of the production efficiency of all types of crop output. At insignificant decrease in crop acreage during the years of reforms, collective agricultural enterprises are characterized by drastic decrease in yielding of almost all types of crop production. The analysis of the financial and economic situation does not give rise to hopes for radical changes for the better in the most important sector of the economy. A new form of agricultural business pattern, namely peasant (farmer) enterprises that have emerged in the years of reforms, is for objective reasons currently in an abandoned state, and at this stage demonstrates mostly problems rather than a real contribution to the crop production (Kaldiyarov *et al.*, 2014).

The recent reformation period has revealed organizational and managerial imperfections, insolvency within interfarm economic relations, and the lack of a real basis in the agricultural industry to independently surmount the crisis. The refusal of the state from any obligations to the industry, moreover, the continuing disparity in prices provoked by their control on food products make the problem even more urgent.

In such circumstances, searching for internal organizational and managerial, economic, sectoral, technological, and other reserves that would be able to stabilize the situation, enhance the efficiency of the industry, preserve and improve the labor potential of the rural population becomes particularly relevant.

At the same time, market relations impose rather strict conditions that determine the need for a differentiated, balanced approach to the structure and the level of competitiveness of produced agricultural products. This requires conducting a detailed analysis of the current state of the crop-producing industry sector, identifying the importance

of the pacing factors limiting production, demand, and possible production of different types of products, as well as its dynamic entry into the market (Bedelbayeva and Lukhmanova, 2016).

## 2. Methods

The theoretical and methodological aspects of the research were based on a systematic approach to the study of the economic mechanism of functioning of the crop production subcomplex. The research uses the works of domestic and foreign agricultural economists dealing with formation of market relations, competition, and product competitiveness.

Methods of economic research, such as a monographic, analytical, economic and statistical, as well as abstract and logical approaches were used in the course of data processing, study, and analysis of accumulated materials.

## 3. Results

In the Republic of Kazakhstan, the crop production is formed at the expense of peasant and farm economies (39%), agricultural enterprises (31%), and farm population (30%).

About 61% of the total crop acreage is cultivated by agricultural enterprises, 38% - by peasant farms, and 1% - by farm population. Agricultural enterprises and peasant farms have similar specialization, since their production is dominated by cereals, while the rest of output is distributed between oilseeds and fodder crops. Farm population relies most on the cultivation of vegetables, as well as fodder and grain crops. The proportion of vegetables, cucurbit crops, as well as other cultures cultivated by the population, peasant and farm enterprises exceeds 90%. At that, only 5% of agricultural products are processed. Such a low level of processing indicates the consumption of the farms themselves, the sale of agricultural products on bazaars or other places of sale, or barter (Statisticheskij sbornik «Nauka. Innovacii. Informacionnoe obshchestvo», 2017).

In 2016, the crop acreage increased by approximately 450 t/ha to 21.5 mln ha, most crops' acreage moderately decreased, while wheat crops' acreage increased. During 2010-2016, crop acreage increased relative to the average, while wheat crops' acreage decreased. Grain crops accounted for about 70% of the total crop acreage, while wheat – 50%. Although the total crop acreage has declined significantly relative to 1990, the proportion of cereal crops has slightly increased. Since 1990, total crops have declined by 40%, while wheat crops have decreased by only 12%. The proportion of other cereals and legumes, barley, oats, and other crops has decreased by almost 70%.

In 2016, due to heavy rainfall and the expansion of the crop acreage, grain crops exceeded 20 mln tons that was the highest figure in the last five years. Though at the same time, the harvested grain crop quality was quite low. The proportion of the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> class wheat decreased down to 45%, while the proportion of the 4<sup>th</sup> and 5<sup>th</sup> class wheat increased to 41%. Five years ago, the corresponding indicators were 88 and 10%, respectively.

Wheat yield slightly increased from 11.9 t/ha in 2016 to 12.1 t/ha that was also the best indicator for the last five years. Grain crops, where wheat plays the most significant role, constitute from a third to almost two thirds of the crop production output depending on the output yield, which in turn accounts for more than half of the agricultural product output (Statisticheskij sbornik «Nauka. Innovacii. Informacionnoe obshchestvo», 2017).

The crop acreage under fodder crops in the Republic of Kazakhstan in 2017 amounted to 3485.2 t/ha and decreased by 5.1% compared to 2016. However, it should be noted that during 2012-2017, there was a sustainable growth of fodder crops' acreage (Table 1).

**Table-1.** Fodder crops' acreage in the Republic of Kazakhstan, t/ha

Year	2012	2013	2014	2015	2016	2017
t/ha	2 484.3	2 517.4	2 866.8	3 109.9	3 671.3	3 485.2

As shown in Table 2, almost half (45.9%) of the acreage designated for fodder crops falls on three regions of the country: Kostanay (18.4%), North Kazakhstan (17.5%), and Pavlodar (10%) regions. Mangistau and Atyrau regions, as well as cities of Astana and Almaty practically lack crop acreage designated for this type of culture (On the state of agricultural land...).

**Table-2.** Fodder crops' acreage in various regions of the Republic of Kazakhstan in 2016-2017, t/ha

	2016				2017			
	All categories of farming	including			All categories of farming	including		
		Agricul-tural enter-prises	Peasants or farmers enter-prises	Housholds of the population		Agricul-tural enter-prises	Peasants or farmers enter-prises	Housholds of the population
Republic of Kazakhstan	3 671.3	1 910.3	1 744.6	16.4	3 485.2	1 716.4	1 733.7	35.1
Akmolinsk Region	427.4	372.1	55.3	-	248.8	199.3	49.5	-
Aktobe Region	171.2	83.2	88.0	-	169.8	81.3	88.5	-
Almaty Region	237.2	57.2	178.8	1.1	237.7	57.5	179.1	1.1
Atyrau Region	1.7	0.8	0.9	-	1.6	0.8	0.8	-
West Kazakhstan Region	169.4	43.7	125.7	-	176.6	43.9	114.1	18.7
Zhambyl Region	198.4	14.3	179.8	4.3	194.7	13.1	177.3	4.3
Karaganda	302.4	89.9	212.5	-	293.9	81.4	212.5	-
Kostanay Region	640.0	499.7	140.3	-	641.8	501.6	140.3	-
Kyzylordina	58.3	20.2	34.5	3.6	58.6	20.3	34.7	3.6
Mangistau Region	0.0	-	0.0	-	0	-	0	-
South-Kazakhstan Region	222.6	46.4	169.7	6.5	222.2	46	170	6.5
Pavlodar Region	351.4	151.7	199.8	-	348.4	140.4	208	-
North-Kazakhstan Region	612.4	462.3	150.1	-	610.7	460.3	150.4	-
East Kazakhstan Region	278.7	68.7	209.0	0.9	280.4	70.4	209	0.9
Astana city	0	-	0	-	0	-	0	-
Almaty city	0	0	0.0	-	0	-	0	-

In 2017 in the Republic of Kazakhstan, the largest harvested area among the considered crops of 77 521.5 ha accounted for fodder maize, while the smallest area of 231.2 ha came in cucurbit crops. Harvested acreage for coarse grain crops amounted to 23 530.6 ha, for legumes – 11 085.1 ha, while for coarse root crops – 352.5 ha.

Among the main fodder crops in 2017 the greatest harvest of fodder maize amounted to 12 388 368.1 cwt. Gross harvest of coarse grain and legume crops was 693 513.0 and 188 034.6 cwt, respectively. Harvest of fodder crops for silage (without maize) totaled to 604 051.3 cwt, harvest of root crops and cucurbit crops amounted to 152 993 and 56 185.7 cwt, respectively.

State subsidies in crop production have increased in 2014 closer to the middle of the "Agribusiness 2020" program implementation, when their amount increased to almost 70 bln from 40 bln tenge a year earlier. However, there was a significant decrease in price support (creation of conditions for establishing domestic prices above or below the world prices) of grain and oilseed producers. In the subsidy structure, the largest expenditure item concerns subsidizing costs for petrol, oil and lubricants (POL), as well as agricultural machinery, which accounts for 60% of all subsidies. About a third of all subsidies are distributed between costs for fertilizer and pesticides. The remaining part of about 10% is spent on seeds, and other expenses (On the state of agricultural land...).

It should be noted that the agribusiness development program for 2017-2021 recognizes that per hectare subsidies in crop production were ineffective and did not encourage the interest of agricultural producers in increasing productivity.

The efficiency of arable farming clearly demonstrates the extremely low level of fertilizer use, which affects the yield of agricultural crops. In terms of this indicator, Kazakhstan lags behind Russia in five times, while Russia itself is several times behind even its closest neighbors.

In turn, fertilizer application is also a costly process associated with the need to use special machinery, POL, etc. The yield of wheat evidences quite clearly the lack of any progress in the cultivation of this crop, which accounts for 20% of the total agricultural production, and a third of all agricultural product exports (World Bank, 2012). At the same time, in Australia, with a comparable level of climatic precipitation, crop yield is about twice higher.

In the new program of agribusiness development, an attempt is undertaken to link the subsidies with the end result. However, we believe that it would be more productive giving more freedom to market mechanisms for determining the most economically advantageous specialization in the various areas of agribusiness development (Hartarska *et al.*, 2015). Then the state could concentrate on investments in related infrastructure, allocation of funds for scientific research, training of demanded personnel, and stimulation of application of new technologies.

## 4. Discussion

Conducted analysis has shown that agriculture works for a large number of consumers and meets their needs (Samuelson and Nordhaus, 2011). Therefore, the agricultural businesses should carry out activities towards improving the quality of sowing material, conducting special soil treatment, applying appropriate fertilizers depending on the needs of soil in nutrients, as well as undertaking other measures ultimately contributing to the growth of product quality characteristics (Webber and Labaste, 2010).

In addition, to improve the quality parameters, it is necessary to solve the problems associated with the product demand, since only the need for products and their high quality can ensure stable demand (Investing in agriculture for a better future, 2012).

It is also necessary to pay attention to the fact that the increase in the efficiency of crop production is caused along with the influence of other factors, by the volume of its production due to the economies of scale (Lapova, 2013). In addition, large agribusiness enterprises which are able not only to produce products, but also to process, transport and sell them, form more competitive advantages and thus are generally more competitive (Ajila et al., 2012).

## 5. Conclusion

In the course of the conducted study, it can be stated that in recent years there has been a significant increase in the efficiency of the world economy in general due to the implementation of newer technology and the international division of labor (Searchinger et al., 2013). However, agricultural producers, especially domestic ones, whose production efficiency is inferior to that of foreign producers, should not be satisfied with what has been already achieved.

Thus, the main ways to improve the crop production efficiency can be identified as follows:

- applying intensive crop cultivation technology, improving land fertility, developing crop rotations, and sowing on the best forecrops (Lazaridis and Drichoutis, 2005);
- applying advanced technology, reducing the time of field operations, using rationally mineral and organic fertilizers, carrying out land reclamation, taking anti-erosion measures, and improving seed production;
- reducing the cost of production that contributes to an increase in the profit of the industry and improvement of production profitability;
- improving onfarm mechanism of material incentives and strengthening self-financing of agricultural units.
- The proposed ways can stabilize the situation, improve the efficiency of the agricultural industry, as well as preserve and improve the labor potential of the rural population.

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