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ESTIMATING THE STATE OF AGRICULTURE DEVELOPMENT IN PAVLODAR REGION (THE REPUBLIC OF KAZAKHSTAN)

The article analyses the development of agriculture in Pavlodar region, in particular: the structure of agriculture gross output by sectors and the basic types of animal breeding. The key problems of the region's agriculture development are identified and the instruments for agriculture's state support are suggested.

Keywords: agriculture; state support; specialization; diversification.

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ОЦІНЮВАННЯ СТАНУ РОЗВИТКУ СІЛЬСЬКОГО ГОСПОДАРСТВА У ПАВЛОДАРСЬКІЙ ОБЛАСТІ (РЕСПУБЛІКА КАЗАХСТАН)

У статті розглянуто розвиток сільського господарства у Павлодарській області: структура валової продукції сільського господарства за галузями, основні види тваринницької галузі. Визначено ключові проблеми розвитку сільського господарства області, наведено інструменти державної підтримки сільського господарства.

Ключові слова: сільське господарство; державна підтримка; спеціалізація; диверсифікація. Форм. 2. Табл. 8. Літ. 15.

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ОЦЕНКА СОСТОЯНИЯ РАЗВИТИЯ СЕЛЬСКОГО ХОЗЯЙСТВА В ПАВЛОДАРСКОЙ ОБЛАСТИ (РЕСПУБЛИКА КАЗАХСТАН)

В статье рассмотрено развитие сельского хозяйства в Павлодарской области: структура валовой продукции сельского хозяйства по отраслям, основные виды животноводческой отрасли. Определены ключевые проблемы развития сельского хозяйства области, приведены инструменты государственной поддержки сельского хозяйства.

Ключевые слова: сельское хозяйство; государственная поддержка; специализация; диверсификация.

Problem statement. Agriculture is one of the important sectors represented in all countries because the country's food safety depends on its development (Makhashov, 2008).

The difference of agriculture from other sectors is that it affects the natural and climate conditions and has a strongly expressed seasonal cyclic character (Saparbayev, 2004). Moreover, agricultural industry has a biological character that creates natural boundaries of industry's concentration. Furthermore, agriculture falls behind in comparison with the industrial sector in its production forces development and is significantly slower than other sectors in adapting to changeable economic and technical conditions. Invested capital brings less profit than in other sectors of economy (Satybalдин, 2000).

In this regard, there is a responsible task – to raise the agricultural sector of economy to qualitatively new level of development and in the same way provide its high competitiveness that is especially crucial under the conditions of the country's

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integration with Russia and Belarus within the Customs Union and in future due to entering the World Trade Organization (Umbitaliyev, 2009).

Latest research and publications analysis. A number of publications has been devoted to the issues of agriculture regulation. For instance, V.Z. Mazloyev and P.E. Gasiev (2000), V.V. Kuzmenko (2002) examine agriculture management within an economic mechanism. In works of L.M. Konyakhina (2005) "economic mechanism" is presented "not as a simple set of economic levers and instruments but as their system, i.e. interconnected and interdependent combination of specific economic regulators".

In Kazakhstan the issues of formation of the state regulation system in the agro-industrial complex (AIC) have been reflected in the works of H.K. Makhshov (2010), T.I. Isakhmetov (2005), B.S. Syzdykov (2003) and others.

Unresolved issues. There are still a number of weak points in AIC of the country: low rates of structural and technological modernization of the sector, unsatisfactory level of the market infrastructure development, low vendibility of agricultural industry, financial imbalance of the industry, insufficient flow of private investments for industry development, the lack of skilled staff etc. (Oksanich and Naumkin, 2010).

Besides this, financial and then food crises have led to additional problems from the investment activity of the sector. At the same time, agriculture in Kazakhstan is considered as one of the most perspective sectors of the economy (Kabdulsharipova, 2012).

The research method. Pavlodar region is situated on the north-east of Kazakhstan. The biggest part of its territory is within the south of West-Siberian plain in the middle course of the Irtysh river covering the area 127.5 ths km². The region includes 10 districts, 3 towns of regional subordination, 7 settlements, 165 rural districts and 408 villages. The climate of Pavlodar region is extremely continental, with long cold winters and short hot summers. Pavlodar region is situated in the zone of risky crop farming where the key barrier to the development of agriculture is the lack of moisture. Created for rainfed conditions plants feel moisture lack, potatoes production experiences difficulties and vegetable production is almost impossible.

The measures on priority directions of the agricultural sector development are taken in the region: cattle breeding industry, meat and milk products industry, poultry and also fish industry, and forestry are well developed. The region has fishery water funds and favorable conditions for intensive development of fish breeding. Annual fish crop is 120 tons and it is 90 tons only in the water reservoir of the K. Satpaev Channel. There are 268 water basins of local importance including 178 assigned to the users of natural resources and 90 in the reserve funds.

The volume of gross output in agriculture by the results of 2011 was 94.5 bln KZT (Table 1). The increase in the volume of gross output in comparison of the results of 2007 is 2.4 times. The index of physical volume is 95.1% comparing to the level of 2007.

Looking at the structure of the agriculture gross output by the sectors of production it is necessary to notice that by the results of 2011 47.3% belongs to crop production and 52.7% – to cattle breeding.

The key culture in the region is wheat – about half of the planted areas. About 15–17% of crops belong to other grains. Moreover, potatoes, vegetable and cucurbitaceous cultures are cultivated in the region. There are 4 greenhouses and 374 forcing frames used in vegetable-growing on close soils, where annually 2,360 tons of vegetables are produced, whereas the region's need is 4,350 tons in off-season.

Table 1. Key indices of agricultural production in Pavlodar region, 2007–2011

Indices	2007	2008	2009	2010	2011	Relative variation, %			
						2008	2009	2010	2011
The number of agricultural enterprises at the end of the period	4032	4006	3781	3966	4174	99.4	94.4	104.8	105.2
The gross regional product of agriculture, mln KZT	50188	53754	77645	60690	94522	107.1	144.4	78.1	155.7
The structure of gross product by the sectors:									
crop production	48.2	39.4	56.9	35.8	47.3	81.7	144.4	62.9	131.8
cattle breeding	51.8	60.6	43.1	64.2	52.7	116.9	71.1	148.4	82.3

Source: www.pavlodar.stat.kz.

As it is seen from the structure of gross output of agriculture cattle breeding is the traditional sector for Pavlodar region. The dynamics of the cattle breeding sector development is presented in Table 2.

Table 2. The dynamics of cattle breeding development in Pavlodar region, 2007–2011

Indices	2007	2008	2009	2010	2011	Relative variation, %			
						2008	2009	2010	2011
Number of heads, ths heads									
Sheep and goats	435.1	474.8	508.0	535.3	534.5	109.1	106.7	105.4	99.8
Horses	70.5	77.3	82.5	87.5	98.9	109.6	106.7	106	113
Pigs	98.6	95.8	96.1	94.0	71.5	97.1	100.3	97.8	76
Poultry	1084.8	1202.5	1234.9	1123.7	794.6	110.8	102.6	90.9	70.7
Production, ths tons									
Meat and poultry in life weight	73.3	73.4	74.3	75	75	100.1	101.2	100.9	100
Milk	343.3	338.6	343.8	347.5	348.4	98.6	101.5	101	100.3
Eggs, mln	125.2	135.6	156.6	186.5	182	107.9	115.5	119	97.6

Source: www.pavlodar.stat.kz.

The volumes of cattle breeding production in the region fully satisfy the needs of the population, except poultry. The availability of enterprises for cattle breeding products processing in Pavlodar region is sufficient, except the manufacture of condensed and concentrated milk. 27 enterprises of milk processing and 57 enterprises of sausage production operate in the region (Table 3).

Table 3. The leading processing enterprises in Pavlodar region

Specialization	Enterprise
meat-processing	“Pavlodarskiy Smak” LLP “RubiKom” LLP
milk-processing	“SUT” JSC “MolKom – Pavlodar” LLP “Pavlodar-Moloko” JSC
milling	“KEMMI” LLP “PHBK” LLP “Muka Kazakhstana” LLP

Source: www.pavlodar.stat.kz.

Cattle breeding development means strengthening the food potential. In most farm businesses succulent feeds, tuberous roots and haylage are almost absent in cattle ration; the necessity in grain forage is satisfied for no more than 30%. The share of grain legumes and long-term legume grasses is low in the structure of feed crops seeding.

115 slaughter sites function in the region for the purposes of providing veterinary and sanitary safety of the region in accordance with the demands of cattle slaughter

rules. The provision level is 66.5%. 255 cattle burial sites are used for the utilization of fallen animals, their provision level is 64%. Veterinary and preventive measures are carried out according to the approved plan. The local veterinary specialists staff is completed by 86.3%.

At this stage it is important to determine the specialization of enterprises and farm households with the purpose of determining the strategy for further agriculture development in the region. The example is "RubiKom" LLP. The cluster type enterprise has been created in "RubiKom" LLP that includes the modern stock breeding complex with 2 ths heads of cattle and 20 ths pigs, the computerized meat-processing production that produces 300 tons sausages of 200 brands per month. The firm has already got the certificate of ISO 9000. "RubiKom" has a corporate chain of shops in 5 cities of Kazakhstan, and 7 movable autosshops.

The determination of the level of diversification and specialization is carried out according to the following formulas:

$$\text{- for diversification level: } D = [1 - \sum (X_i)^2] \times 100\%; \quad (1)$$

$$\text{- for specialization level: } K_{сп} = 100 \div \left[\sum (УДп \times (2n - 1)) \right], \quad (2)$$

where $УДп$ – the share of market products of separate sectors; n – the ordinal number of the type of market product in ordered series by share in the amount of sales proceeds beginning with the highest.

The dependence of diversification and specialization is in the fact that in the process of specialization on one product the coefficient of diversification is equal to 0, and vice versa, at multiplicity of work types the level of diversification equals 1.

The diversification coefficient depends on two indices: production volume and price. So, there is no possibility to determine the differences between diversification in related and non-related sectors. That is why it is offered to determine two indices of diversification in related and non-related sectors. The first index is calculated in the process of measuring of the diversification between related products within one group. Affinity is based on products peculiarities or unusable technology of production.

The second index reflects the diversification between different groups of produced producing in the sectors of crop growing, cattle breeding and industrial processing.

The method of calculation is in determining the share of each type of the product in the total earnings in related or non-related group. Then the level of diversification is calculated by the formula.

The depth of the related diversification is determined at the example of cattle breeding at "RubiKom" LLP.

The level of diversification in cattle breeding in 2010 was 45%, in 2011 and 2012 it was 54% and 41% correspondingly. Sausage products take the largest share in the structure of market products in cattle breeding, its share in 2012 reached 75%.

Internal enterprise specialization is social labor differentiation of internal enterprise subdivisions specializing on the production of one or several types of products taking into account the existing production resources. Specialization stipulates productional direction of an enterprise that is determined by its main sectors. Productional direction of an enterprise depends on the structure of market products. The data on the contents and the structure of market products and the level of the enterprise specialization for "RubiKom" LLP are presented in Table 6.

Table 4. Types of market products at "RubiKom" LLP

Types of market products	2010		2011		2012	
	X ₁	X ₂	X ₁	X ₂	X ₁	X ₂
Sausage	0.699	0.4886	0.5501	0.3026	0.7475	0.5588
Cream	0.02766	0.000765	0.0326	0.0011	0.0529	0.0028
Kefir	0.0094	0.0000883	0.0047	0.000022	0.0083	0.000069
Curb	0.0045	0.0000202	0.0044	0.000019	0.0138	0.00019
Butter	0.00579	0.0000335	0.0025	0.0000062	0.0052	0.000027
Milk	0.246	0.0605	0.4004	0.1603	0.1689	0.029
Other	0.0069	0.0000476	0.0052	0.000027	0.003	0.000009
Total	1	0.55	1	0.46	1	0.59
The level of diversification, %	45		54		41	

Source: www.rubikom.kz.

Table 5. The level of diversification "RubiKom" LLP

Types of works	2010		2011		2012	
	X ₁	X ₂	X ₁	X ₂	X ₁	X ₂
Crop production	0.3295	0.1086	0.3901	0.1522	0.3757	0.1411
Cattle breeding	0.2397	0.0575	0.1529	0.234	0.1642	0.0269
Bread	0.0058	0.0000336	0.0034	0.0000115	0.0035	0.0000122
Other works and services	0.425	0.1806	0.4537	0.2058	0.4565	0.2083
Total	1	0.3467	1	0.38	1	0.38
The level of diversification, %	65		62		62	

Source: www.rubikom.kz.

Table 6. The volume of market products and the level of specialization of "RubiKom" LLP

Types of market products	2010		2011		2012	
	ths KZT	% to the result	ths KZT	% to the result	ths KZT	% to the result
Grain	236744	30	317396	26,8	656682	36,8
Hay	10376	1.3	8010	0,7	2001	0,11
Straw	953	0.1	1282	0,1	2180	0,12
Other products	1510	0.2	134	0,01	1417	0,08
Total in crop growing	249583	32.1	326822	27,6	662280	37,1
Sausage products	131817	17	82374	7	220787	12,4
Cream	5215	0.7	7859	0,7	15638	0,9
Kefir	1781	0.2	502	0,04	2462	0,14
Curb	857	0.1	813	0,07	4091	0,2
Butter	1091	0.14	819	0,06	1550	0,07
Meat in life weight	46449	6	145678	12,3	49873	2,8
Other	1305	0.17	481	0,04	889	0,04
Total in cattle breeding	188515	24.3	238526	20,1	295329	16,5
Bread	4575	0.6	6295	0,5	6274	0,31
Other works and services	334297	43	612609	51,7	820680	46
Total in other products	338872	43.6	618904	52,3	826954	46,4
Total for the enterprise	776970	100	1184252	100	1784563	100
The coefficient of specialization	0.31		0.36		0.36	

Source: www.rubikom.kz.

In the described example for the period 2010–2012 the enterprise carries on business with the middle and above the middle level of diversification. So, the enterprise has the level of specialization coefficient lower than average. Thus, we can conclude that high level of diversification is inherent to agricultural enterprises, combining production and processing. At the same time the availability of various specialized subdivisions at the enterprise gives additional possibility to increase the level of diversification and to decrease the risks in the sectors where recession is observed.

The analysis has shown that reserves for diversification are present even at large processing enterprises, not to mention farms. Under these conditions active state support should be carried out.

Today in Kazakhstan the number of decrees of the government directed at increasing of the competitiveness of domestic production exists. "The program on agricultural complex development in the Republic of Kazakhstan for the period of 2010–2014" is developed within the Program of forced industrial and innovative development of the Republic of Kazakhstan. The main aim of which is development of competitive agroindustrial complex of the country providing food security and the increase of products export. The realized investment projects in Pavlodar region in 2012 are presented in Table 7.

Table 7. The realized investment projects in 2012

Project initiators	Name of the investment project	Place of the project realization	Realization period	Project cost, mln KZT	Working places in the exploitation period
FH "Sergey"	Putting into operation irrigation sites with the installation of drop irrigation system on 18 ha	rural zone of Aksy town, Yevgenyevka village	2011 – June 2012	8	4
FH "Paramonovskoye"	Reconstruction of irrigation grounds on the area of 500 ha	rural zone of Aksy town	2011 – June 2012	73	4
"Modul PV" LLP PCF	Growing of vegetables in hothouse conditions	Pavlodar city	2011 – July 2012	40	
"Kirova" LLP	Reconstruction of irrigation site with the area 250 ha	Pavlodar district	01.08.2011 – July 2012	107	6
"Pobeda" LLP	Building of milk and goods farm for 400 heads	Shcherbaktinskiy district	2011 – September 2012	120	6
"FH Rassvet" LLP	Building of feeding ground for 200 heads	Lebyazhinskiy district	2011 – September 2012	20	2
"KazTransKem" LLP	Production of agrochemicals, pesticides, herbicides	Pavlodar city	2011 – October 2012	1869	65
"Argo" LLP	Building of the complex for acceptance, storage and dispatch with the volume of 30,000 tons of grain and oil crops in Pavlodar city	Pavlodar city	1 st quarter 2011 – October 2012	750	40

Source: www.pavlodar.stat.kz.

1.7 bln KZT were spent to support the agriculture in 2013 according to the confirmed budget of the region for 2013–2015. Money is directed at reducing the POL costs for carrying out spring field and harvesting works, the increase of harvesting and quality of produced agricultural products, the support of livestock breeding, compensation of expenditures of agricultural commodity producers on purchasing seeds.

Conclusions and perspectives for further research. The basic problems in the development of the cattle breeding sector are the following:

- the concentration of cattle heads at low productive personal farms. In the result unspecialized agricultural enterprises especially private households that should

produce products only for personal needs have become the main suppliers of meat products at the market;

- low meat productivity of cattle in all categories of households (output of dead weight of cattle, given for slaughter in life weight, is 52%);
- low share of meat stock in the total cattle heads. In the result, young stock and culled cattle of milk breeds, mainly, go to meat production because of low quantity of cattle of high productive meat breeds;
- unsatisfactory organization of feeding (the average live weight of cattle in all households categories, given for slaughter on meat, is 300 kg). Low qualitative indices of livestock products influence the cost effectiveness of cattle meat production;
- old methods and insufficient level of selective genetics work.

Table 8. SWOT-analysis of agriculture condition in Pavlodar region, developed by the author

Strengths	Weaknesses
<ul style="list-style-type: none"> - rich natural resources; - ecological cleanness and high quality of grains and crop production products; - presence of large agrofomations in the region; - well-qualified engineer-technical potential; - usage of modern technologies in crop growing. 	<ul style="list-style-type: none"> - difficult weather climatic conditions of the region due to which the region belongs to the zone of risk arable farming; - infrastructure underdevelopment; - insufficient technical level of material and technical base in agriculture; - absence of management staff of new formation.
Opportunities	Threats
<ul style="list-style-type: none"> - development of functional stimulus for foreign investments attraction into the priority projects of agricultural development; - implementation and development of agromarketing on macro- and microlevels; - development of milk and grain clusters. 	<ul style="list-style-type: none"> - narrow domestic market; - bureaucracy in the work of local government bodies.

The method of linear breeding of cattle with usage of only 4 selectional features of assessment which is used in the country is ineffective and practically not used in the world practice (0.2% from the total practice). The confirmation of selective importance of an ox according to this method needs 12 years. Leading world meat producers use indicial assessment of progeny or genome (DNA);

- lack of modern complex scientific developments in the sector of beef cattle breeding.

The main problem in the sector of crop production is the lack of grain elevators for grain storage.

Thus, their realization of the following campaigns is necessary (Kaygorodtsev, 2006):

- the rational usage and radical improvement of pasturable and hay lands;
- the increase of irrigable lands, organization of crop rotation and culture of pasture fields management;
- the development of seed farms of feed cultures;
- the renovation of the existing park of machinery in agricultural formations (purchasing of fodder procuring, fodder preparing and fodder harvesting machinery);
- modernization of technological infrastructure at existing feed-milling enterprises.

The development of fodder production will involve the inclusion of feed crop into crop rotation that will rise the productivity of main grain and oil crops.

It is necessary to enhance the activity of development institutes, represented by "KazAgroFinans" LLP. It is also necessary to create microcrediting organizations in villages and reconsider collateral credits for the purpose of increasing the share of peasant agricultures and the support for rural entrepreneurs.

In Pavlodar region the sectoral program "Agrobusiness-2020" has been accepted for 2013. The main points in "Agrobusiness-2020" are: financial recovery, higher availability of goods, works and services for AIC subjects, development of state systems of provisions for AIC subjects, higher efficiency of state regulation. Particularly, the program provides the implementation of 6 financial instruments of agricultural producers' support: guaranteeing and insuring loans, investment subsidies, subsidization rates of remuneration on credits and leasing, financial recovery, funding of the second level banks. Moreover, the complex of measures for providing phytosanitary, veterinary and food safety will be developed within the program. As a whole, the total amount of funds necessary for the realization of the Program of AIC development for the period of 2013–2020 will be 2,986,96 bln KZT, 75% from which will be directed at raising availability of goods, works and services, 14% – to the development of state support for AIC, 10% – to financial recovery.

In this case it is necessary to determine the criteria of program efficiency in order to avoid the experience of the previous programs "left on paper".

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