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The formation and development of meat cluster in West Kazakhstan region

One of the key factors for the effective development of meat production is the rational use of existing production resources, natural and climatic conditions and organizational and economic factors of the region. The purpose of the study was the theoretical and methodological substantiation of the optimal conditions for the creation of meat cluster in West Kazakhstan region. For assessment of possibility of meat cluster creation, the analysis of the functioning livestock industry in the region and the peculiarities of organizational influence and economic mechanism of interrelations of the meat cluster participants was conducted. It has been established that West Kazakhstan region is bordered by 5 regions of Russian Federation, which allows to export meat products. So in 2017, the export of beef amounted to 1736,5 tons. One of the problems in the development of the industry is the insufficient workload of meat processing enterprises due to insufficient load of raw materials, the unfinished mechanism of relations between meat processing plants and agricultural producers. Therefore, the creation of meat cluster in the regions allows to effectively attract government stimulation of business and science to the cattle meat production, and due to technological modernization and the implementation of scientific research results, it is possible to reach steady positive dynamics of animal growth. The complex methods of research are used: the abstract, the study of dynamic trends. These methods of research allow to make logical analysis of the collected facts, to develop concepts and judgments, to make conclusions and theoretical generalizations.

Keywords: agriculture, meat cluster, state, science, business, meat processing enterprises, products, production, machinery, export, meat subcomplex.

The solution of the problem of providing the population of Kazakhstan with meat of own production is the priority direction of development of the agrarian sector of economy. For this purpose from the state budget considerable funds are allocated. Disqualification to solving the problem are, first of all, the violation of previously established organizational and economic ties and the imperfection of relations between individual industries and areas of the meat subcomplex in market conditions.

The current system of organizational and economic relations in the meat subcomplex is characterized by the imbalance of partners' interests and the costly nature of the production of final product, the increased monopolism of the processing enterprises and trade, the equivalence of exchange between the stages of production process. As a result of this, the surplus product produced in those branches of the animal husbandry, the integration with other areas of the agro industrial complex is not developed, the processors and the sphere of circulation are assigned. After selling of the made products, agricultural producers do not have means not only for expanded, but even for simple reproduction. In this regard, the industry of beef cattle is not attractive to investors, the modernization processes to them are slow.

Solving the problem of regulating system of organizational and economic relations, the spheres of meat subcomplex promoting strengthening of susceptibility, which makes the best use of the positive impact of external and internal factors to harmonize the interests of agricultural and meat processing enterprises, improve the efficiency and competitiveness of meat products, methodological and methodic support assuring the specificity of production in each sector, as well as features of the economic and social development of individual regions.

Industrial processing of agricultural raw materials of animal and associated economic activities connected with the common technological cycle, is the high socio-economic importance for the domestic economy. The situation in the production of food products from agricultural raw materials of animal is aggravated by the strong deterioration of production facilities; lack of financial resources for the technical modernization of production and development of innovative technology, the inability of existing business structures to withstand aggressive competitive pressure and to function effectively.

The methodological basis of the research is represented by the complex of fundamental methods of scientific knowledge: analysis, synthesis, dialectical unity of qualitative and quantitative assessment, and subject-object approach. In the process of substantiating theoretical propositions and conclusions, the vari-

ety of methodological tools and methods were used: systems analysis to determine theoretical, methodological and practical aspects of forming the cluster, logical generalization to form conclusions, determine theoretical principles and methods for evaluating the development of meat cluster; economic and mathematical methods — in the development of econometric models of the influence of factors on the generalizing indicator of economic development — the dynamics of the physical volume of meat sold for export; statistical methods — in determining the increase in the number of animals in the West Kazakhstan region.

The founder of the clustering development theory is a professor at Harvard Business School, Michael Porter, which is presented in his work «The Competitive Advantage of Nations» the comprehensive, evidence-based study with the rationale for the importance and prospects of clusters as the main tool in competition. According to M. Porter, the cluster is geographical concentration of competing and cooperating interconnected companies, specialized suppliers, service providers, firms in relevant industries, and related institutions in certain areas [1]. Porter Cluster Theory visually considers the question of a role of location of the enterprises in regions.

In D. Haag's handling, «the cluster is an industrial complex formed on the basis of the territorial concentration of specialized suppliers networks, main producers connected by the technological chain, and acting as an alternative to the sectoral approach» [2].

In various interpretations of concept the cluster is allowed to combine different views and definitions in several exemplary groups.

The first group includes definitions in which more attention is paid to the geographical component of the cluster.

The cluster is territorial association of interconnected enterprises and institutions within the relevant industrial region, which is directed their activities to producing world-class products [3, 7].

The second group of definitions is aimed to relationship of cluster members. According to the scientist A.M. Rakhmanov, the cluster is an innovation-oriented integrated structure, formed by principle of the technological chain and realizing the common economic interests of participants connected with relationships [4, 8].

The cluster is a set of subjects of the different industries of the regional market, united for joint activities aimed to production of a certain group of goods in order to increase the competitiveness of each subject (participant in the production process) separately, and the territory (where the product is made) as a whole [5, 9].

The third group of definitions considers the cluster as a complex socio-economic phenomenon, according to experts; the cluster approach is one of the most effective methods for sustainable socio-economic development and enhancing the competitiveness of national economies and interstate economic integration units. According to E.N. Criulina, before proceeding to the formation of territorial production cluster, it is reasonable to consider the existing socio-economic situation of the territories depending on the direction of economic activity of the business structures concentrated within their borders [6].

In general, the cluster is voluntary association of organizations that operate in a certain territory and participate in the production, promotion and sale of homogeneous and competitive products within the single product-technological chain, and the interaction between them is characterized by the simultaneous presence of high level of competition, cooperation and innovation activity [10].

The information base of the research was compiled by the Department of Agriculture of West Kazakhstan Region, the State Program for the Development of Agro-Industrial Complex of the Republic of Kazakhstan for 2017-2021. The statistical data of the Statistics Committee of the Republic of Kazakhstan was used. As information sources, publications in periodicals, materials of scientific and practical conferences, information resources of the worldwide Internet, etc were used.

Livestock is one of the leading branches of agro-industrial complex in West-Kazakhstan region. The number of cattle and sheep over the past 3 years tends to the increasing, so the number of cattle from 2015 to 2017 increased by 15,7 % and amounted to 542,5 thousand heads, sheep — by 2,8 % and amounted to 932,6 thousand heads (Fig. 1.).
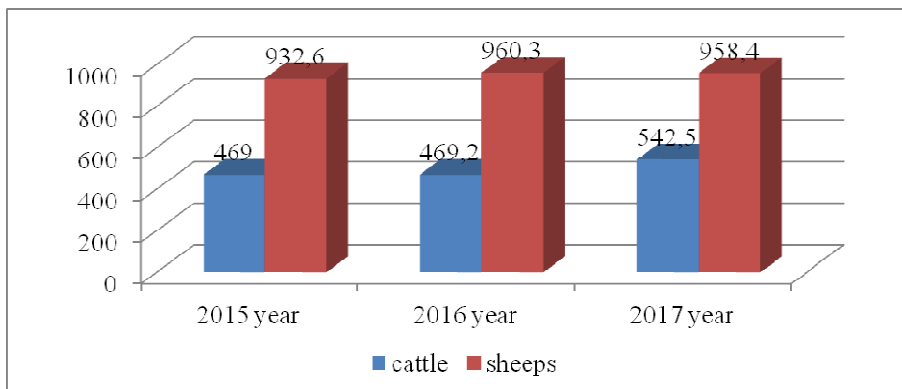
Figure 1. The number of animals in West Kazakhstan region, thousand heads

In the region, the largest share among agro formations engaged in cattle breeding and sheep breeding is assigned to peasant farms, which accounted for 56,4 % of the cattle and 50,9 % of sheep. And peasant farm is possible and necessary to introduce innovative technology.

The West Kazakhstan region is bordered by 5 regions of the Russian Federation, which allows for the export of meat products. So in 2017, exports of beef and mutton amounted to 1736,5 thousand tons and 505,7 thousand tons, respectively (Fig. 2.).
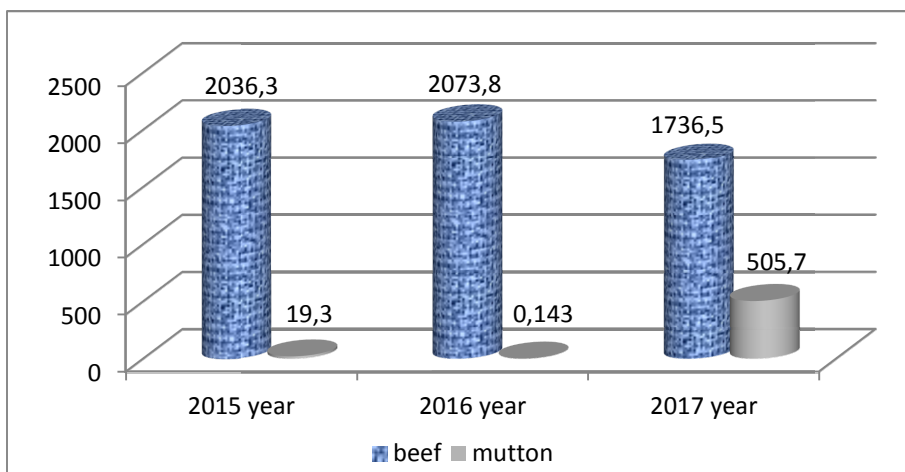

Figure 2. Sold for export in West Kazakhstan region, thousand tons

In Western Kazakhstan, the total area is 15,134 million hectares, including 10,2 million hectares of pasture, or 67,4 % of agricultural land, 1375,6 thousand hectares of unused land. However, in recent years, only about 30 % pastures have been practically used for grazing due to their lack of water and remoteness from settlements.

The surface water resources of the West Kazakhstan region are amounted 10,07 cubic meters. km, which 1,81, formed on its own territory, in the region the most common high groundwater and high salinity — from 10 to 300 g / l and more. The issue of water supply to remote pasture is not fully resolved; the object of hydro technical infrastructure is not developed. On the basis of these problems, and also because of the lack of mechanism of relations with agricultural producers, meat processing enterprises are not sufficiently loaded; therefore it is necessary to create the meat cluster. According to the principle of cluster, it is necessary to involve commodity producers, the state and science in joint cooperation for the production of high-quality and ecologically clean meat (Fig. 3.).

Based on the fundamental principles of the functioning of the meat cluster, the following advantages of creating the cluster would be highlighted:

− Stable sales network for agricultural producers;
− Export of goods for export, attraction of foreign investments;
− The creation of local food funds;

– Regulation of the local agro-food market;

– Improves of communication between commodity producers and the state;

– Reasonable price of agro-food products.

Meat cluster will work on the following mechanism. The meat clusters in two roles are acted: with one side, conduct procurement activities of production, with another one — provide agricultural producers with the necessary resources (financial, supply of cattle). Acting as a dual institutional organization, the cluster is self-contained inside the region, would be developed due to the use of the region's internal capabilities, which allows to be classified as income-generating, with pronounced social mission that would simultaneously provide both economic and social effects [11, 12].

Meat cluster will implementing for the following functions:

– Research of the agro-food market;

– Development of mechanisms to overcome the high costs of market entry (resource support for the implementation of business projects of cluster members);

– Order for the production of agricultural products;

– Price regulation for agro-food products;

– The creation of new jobs;

– Regulation of the market of agro-food products.

It should be noted that the development of the meat cluster is aimed, firstly, at increasing the supply of goods, mainly from local sources of resources, and on another — at ensuring employment of the rural population by involving the production activities of this system. Thus, the problem of ensuring the solvency of demand is solved, since the wages paid to the cluster workers «will return» in the form of turnover from the sale of goods [13].

The meat cluster sales system is focused both final consumers and on the markets connected to government procurement for the needs of social institutions (schools, hospitals, etc.).

The criterion for choosing one or another product market is, firstly, the magnitude of the costs, and secondly, the advantages obtained in each of its segments. Considering this fact, according to our opinion, the geographical criterion will become the basic for segmentation of consumers. It is expedient as the main expenses in a sales network the share of transport expenses [14]. The interrelation of the meat cluster with other organizations is shown in Figure 1.

The development of the meat cluster is determined by the increasing production volumes of processed products, the need to improve the efficiency system as a whole. The wholesale link of this activity should be considered both in terms of supplying the missing goods, and in terms of selling the harvested and manufactured products [15].

It is considered that the role of participants in the meat cluster in West Kazakhstan region. The role of the university meat cluster formation in West Kazakhstan region is determined by the development of science in the agricultural sector.

Zhangir Khan West Kazakhstan Agrarian Technical University (WKATU) is a regional educational, scientific and production center, which is characterized by the integrated approach to the study of agricultural technology and the intensification of agricultural production.

The expansion of fundamental and applied works, their full supporting and stimulation constitute one of the main directions of the university's scientific policy, focused on the implementation of scientific and technical programs and projects of national importance, which are of priority importance for the region and the state.

Scientists carry out the research and advise rural businessmen: the introduction of intensive technology for the cultivation of agricultural crops; diversification of acreage; the use of resource-saving technologies for the cultivation of agricultural crops. In animal husbandry and veterinary science, the teaching staff of the university conduct research and provide consulting services: for introducing innovative technology for the production, processing and storage of meat products; the introduction of innovative method of disease prevention and breeding of pedigree animals; prevention and treatment of epizootic diseases; organization of ant parasitic measures for invasions in animals; introduction of balanced feeding system for cattle fattening, etc.

The program of development of the territory of West Kazakhstan region for 2016–2020

FINANCING

- investment lending
- leasing financing
- export subsidies

- tax preferences
- bank loan guarantee
- interest rate subsidies

Domestic market

Foreign market

NUCLEAR CLUSTER
Big meat processing enterprises WKO

Training and retraining:
Service and Consulting Center
Scientific support

Zhangir khan WKATU

Complete feedlots
«Forward purchase of cattle and sheep»,
«Rental of breeding beef»

Personal subsidiary plots -86375

Agroformation Agricultural Enterprises – 523 Farms - 5460
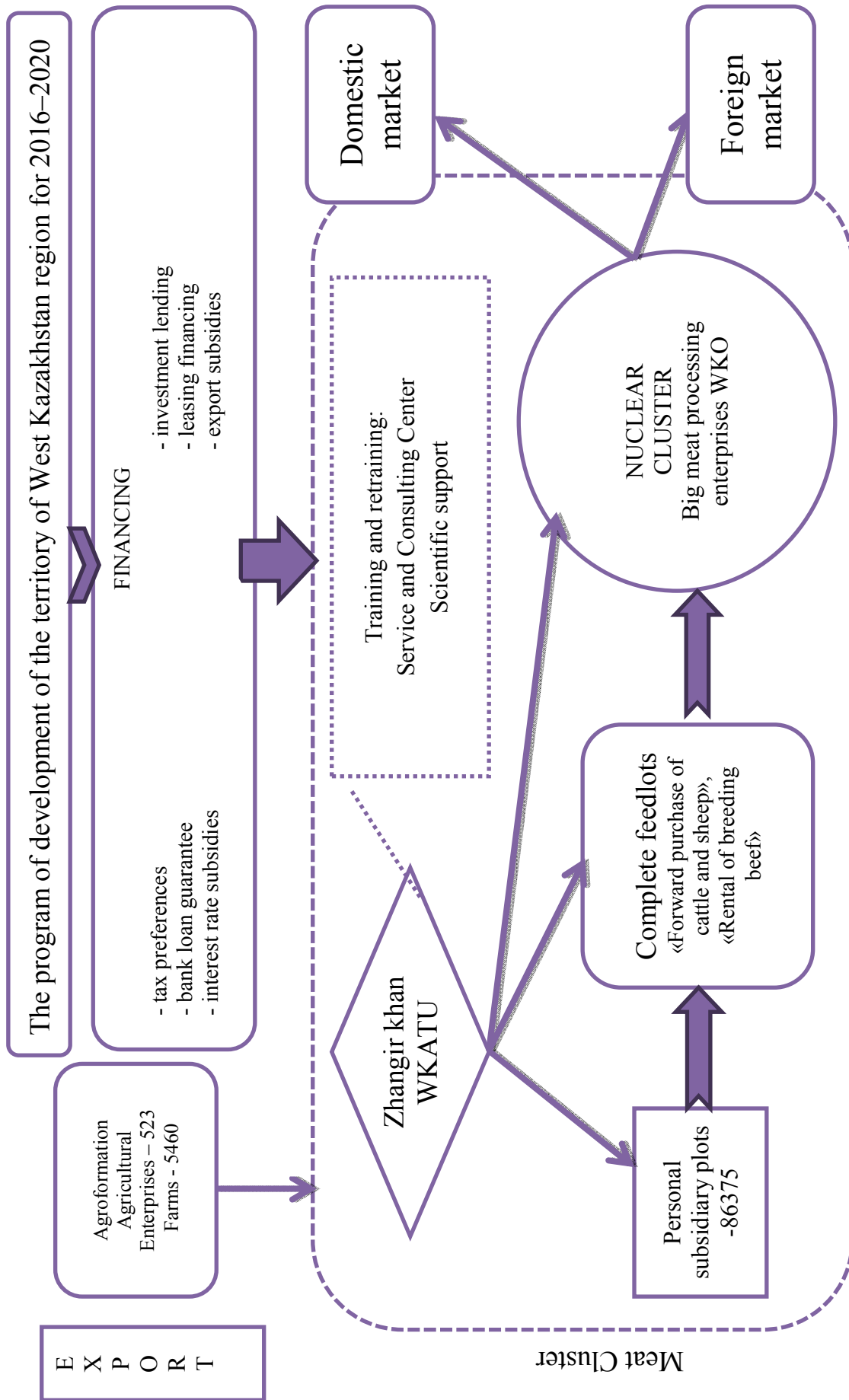
E X P O R T

Meat Cluster

Figure 3. The organizational mechanism of the meat cluster of West Kazakhstan region

The participation of the university meat cluster formation of the West Kazakhstan region will allow the introduction of advanced production technology in the process of agricultural production. Due to this, the future meat cluster will rely on sophisticated technology, such as robots, temperature and humidity sensors, aerial photographs and GPS technology, etc. These achievements will allow organizations of the meat cluster to be profitable, efficient and environmentally safe.

In the development of the meat cluster, the state actively is assisting: coordination of the work at all levels of the system, state support for the development of cluster of various areas and the creation of an infrastructure for the sale of cluster products [16].

State support of the meat cluster provides for loans to rural producers at preferential rate, leasing equipment, subsidizing agricultural producers [17].

Instruments of state support of the meat cluster directed:

- creation of favorable conditions for the activities of agricultural producers of the cluster (tax preferences, interest rate subsidies, bank loan guarantee);

- raising the technical level in the countryside (investment loans, leasing, hydro geological study, watering of land);

- growth of personnel potential in agriculture;

- short-term and long-term crediting of peasant farms and personal subsidiary farms.

In the West Kazakhstan, the crediting of agriculture for 2018 amounted to 8582,6 million tenge, including lending to the population through the «Fund for financial support of agriculture» was issued for 3434,5 million tenge.

In order to increase the volume of agricultural production in rural areas, the state pays subsidies in the following direction:

- for the head of the breeding stock of cattle involved in breeding and breeding work and for the head of the breeding stock of cattle actually received the offspring, taking into account the output rate of the offspring;

- for the head of the breeding stock of sheep involved in breeding and pedigree work;

- for the head of actually artificially inseminated royal stock of cattle and sheep;

- for the head of the breeding sire producing in the reproduction of the herd;

- for the head of beef and lamb sold for slaughter or feeding platforms (from 1000 cattle places) or processed at meat processing enterprises, slaughter houses or slaughtering areas with refrigeration equipment that have accounting numbers;

- per kilogram of fine and semi-thin wool, sold or processed at the enterprises (workshops) of processing, having accounting numbers;

- per ton of feed sold.

One of the main participants of the meat cluster is agricultural producers, they are: agricultural enterprises (AE), peasant farms (PF), personal subsidiary farms (PSF).
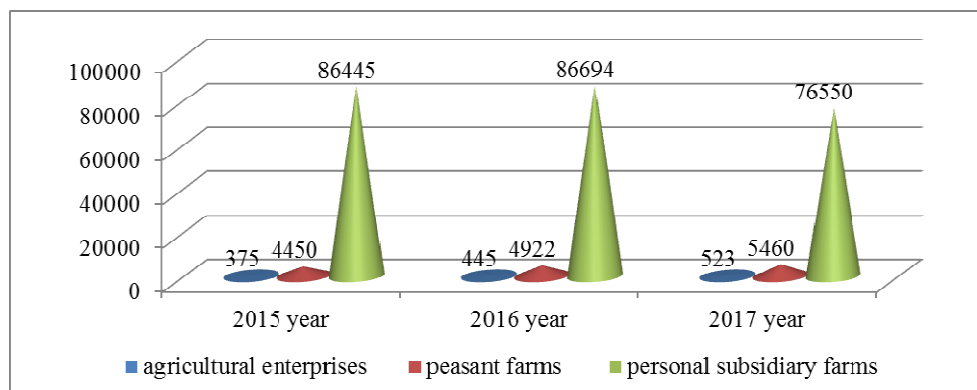

Figure 4. Number of agro formations in West Kazakhstan region

In West Kazakhstan region, agricultural production employs various forms of agro formations, among which are for 2015-2017. The number of agricultural enterprises were increased at higher rate (39,4 %) compared with peasant farms (22,7 %), which was associated with the creation of agricultural production cooperatives and active state support (Fig. 4).

In the context of agro formations in recent years, peasant farm is the tendency to increase the number of cattle by 34,5 %. There are also problems of incomplete coverage of selection and breeding work of small and medium-sized farms, deterioration of agricultural equipment — 70 %, for 3 years the update was only 3 % (with a norm of 10-12 %).

In the region, the largest share among agro formations engaged in cattle breeding is assigned to peasant farm, on average, which account for 56,4 % of the cattle. And peasant farm is possible and necessary to introduce innovative technology (Fig. 5).
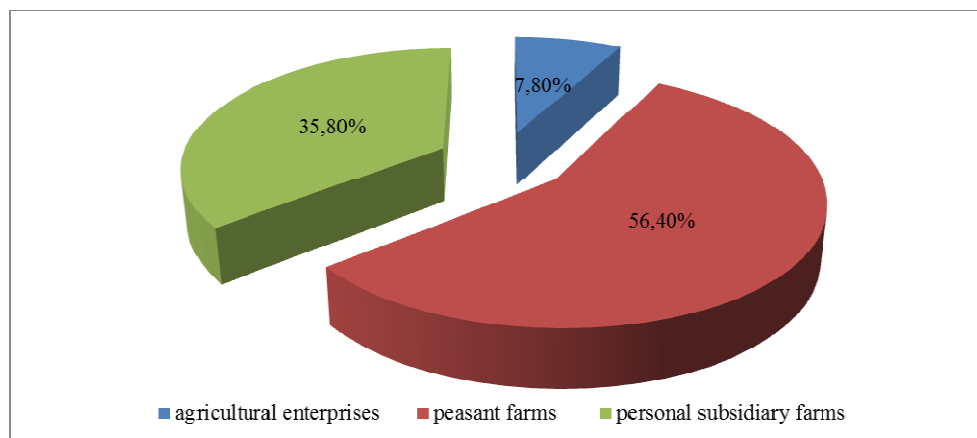

Figure 5. Share of the number of animals by farm category of the West Kazakhstan region, 2017

This form of agricultural production turned out to be the most flexible and easily adaptable to the changed economic conditions. Peasant farms, the main form of agricultural production, become to possess significant production potential and act as a significant reserve of economic activity of the meat cluster. The special role of peasant farm consists in providing the meat cluster with the necessary raw materials, supplying cattle meat [18].

Therefore, the main mission of creating the meat cluster on the basis of enterprise in the West Kazakhstan region is to form efficiency system for the production and sale of high-quality products and pool the resources of all interested participants and expanding the export of meat products.

One of tasks of the State program for the development of the agro-industrial complex of the Republic of Kazakhstan for 2017–2021 is to saturate the domestic market and develop the export potential of domestic products; therefore, in order to ensure the export potential of domestic products of the country, it is necessary to form the organized production. Improving the relations between the participants of the meat cluster will create the developed meat subcomplex in market conditions. It is necessary to develop organizational and economic ties between the participants of the meat cluster: science, government and business.

Implementation with scientific institutions to introduce the results of scientific research into production scientists is allowed to know their problems and needs more deeply, in common to find the ways to solve them, which contributes to improving the activities of scientific institution and improving the efficiency of agricultural production [19].

State stimulation of business will provide large-scale sales of high-quality agricultural products in the domestic and world markets, more reliable communication with banking, insurance, leasing and other organizations and government authorities. Agricultural producers, by expanding the production of livestock products will be able to increase the profitability of production, increase tax revenues to the budget, and develop production infrastructure in the countryside. In general, the construction of the cluster will allow achieving the increase in the production of meat and processed products. This will be achieved by: increasing productivity by automating and introducing modern technology; ensuring the growth of animal productivity (live weight, average daily gain); providing the industry with qualified personnel.

References

1   Porter, M. (1990). *The Competitive Advantage of Nations.* Macmillan Press Ltd. London.

2 Haag, D. Theoretical aspects of the formation of competitive clusters in countries with economies in transition: Cit. by: A.A. Migranyan. *krsu.edukg*. Retrieved from www.krsu.edukg / vestnik.

3 Sokolenko, S.I. (2002). Production Systems of Globalization: Networks. Alliances. Partnerships. Clusters: Ukrainian context. Scientific publication. Kiev: Logos.

4 Rakhmanov, A.M., & Ivoilova, I.V. (2017). The clustering of the agro-industrial complex is the most important element in the development of Eurasian integration in the agrarian sphere. *AIC: Economics, Management, No. 10,* 74–81.

5 Belotserkovskaya, Ye.M., Belotserkovskaya, N.V., Kaliyeva, O.M., & Sheptukhin, M.V. (2017). On the Essence of the Economic Concept of «Cluster». *Young Scientist, No. 12,* 228–233.

6 Criulina, E.N., & Gorbatko, I.A. (2017). Clustering of rural areas as a way of integration in agriculture. *Achievements of science and technology of the agroindustrial complex, No. 10,* 89–93.

7 Nekrasov R. (2009). Cluster development of regional AIC. *Agrarian and industrial complex: economy, management, No. 5,* 37–43.

8 Kosolapova, M.V., Ryzhenkova, N.E., & Svobodin V.A. (2016). The favorable entrepreneurial climate is the basis of the region's innovation and investment attractiveness. *AIC: Economics, Management, No. 5,* 67–72.

9 Anokhina, M.Ye. (2014). Agroclusters and Economic Growth of the Russian AIC. *AIC: Economics, Management, No. 5,* 77–84.

10 Khukhrin, A.S., & et al. (2010). Formation of the system of agrarian clusters of Russia. *Economics of Agricultural and Processing Enterprises, No. 9,* 34–38.

11 Trevtsin, M.M., Kuznetsov, V.I., & Chazova, A.V. (2011). Clustering in the agro-industrial complex — a mechanism for increasing the sustainability of the region's food supply system. *Food Industry, No. 7,* 30–33.

12 Criulina, E., & Gorbatko, I. (2018). Role and Place of Integration in the Mechanism of Rural Development Management. *APK: Economics, Management, No. 4,* 28–36.

13 Bogoviz, A., Popkova, E., & Svistunova, I. (2018). Innovative model of agro-industrial reproduction in industry 4.0: features and prospects. *APK: economy, management, No. 5,* 4–10.

14 Shaitan, B. (2018). Transfer of research results in agricultural production. *AIC: economics, management, No. 2,* 22–28.

15 Vazhenina, I. (2014). Agrarian-industrial clustering as a tool of sovereignty of Russia. *Problems of Theory and Practice of Management, No. 7,* 48–57.

16 Nechaev, V., Artemova, E., & Bursa, I. (2011). Application of cluster analysis in the study of the efficiency of milk production in the Krasnodar Territory. *AIC: Economics, Management, No. 7,* 24–30.

17 Tyutyunikov, A., & Zakshevskaya, T. (2013). Clustering of agricultural enterprises for the development of typed anti-crisis strategies. *AIC: economics, management, No. 1,* 37–42.

18 Zakshevsky, V.G., Merenkova, I.N., & Yurov, E.V. (2013). The development of small forms of management in rural areas. *AIC: Economics, Management, No. 8,* 37–42.

19 Ivanova, E., & Nikitin, A. (2018). Cluster-cooperative project of innovative development of agriculture. *Journal Quality-access to success, JUL 2018,* 8–14.

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Батыс Қазақстан облысында ет кластерінің қалыптасуы және дамуы

Ет өндірісін тиімді дамытудың негізгі факторларының бірі — қолданыстағы өндіріс ресурстарын, климаттық жағдайлар мен өңірдің ұйымдастырушылық-экономикалық факторларын ұтымды пайдалану. Зерттеудің мақсаты Батыс Қазақстан облысында ет кластерін құрудың оңтайлы жағдайларын теориялық және әдіснамалық негіздеу болып табылады. Ет кластерін құру мүмкіндігін бағалау үшін облыстағы мал шаруашылығы саласының жұмыс істеуі және ет кластері қатысушыларының өзара іс-қимылының ұйымдық және экономикалық механизмінің ерекшеліктеріне талдау жүргізілді. Батыс Қазақстан облысы Ресей Федерациясының 5 өңірімен шектесетіндігі белгілі, сол себепті ет өнімдерін экспортқа шығаруға мүмкіндігі берілген. Мәселен, 2017 ж. сиыр етін экспорттау 1736,5 т құрады. Өнеркәсіпті дамытудағы проблемалардың бірі — шикізаттың біркелкі жеткізілмеуінде, ол, ең алдымен, ет өңдейтін зауыттар мен ауылшаруашылық тауар өндірушілерінің арасында қалыптасқан механизмдердің қалыпты жұмыс жасамауы салдарынан ет өңдеу кәсіпорындарындары толық өндіріс қуаты негізінде жұмыс жасамайды. Сондықтан өңірлерде ет кластерлерін құру арқылы мал шаруашылығының өндірісіне бизнес пен ғылымды ынталандыруды тиімді түрде тартуға болады және технологиялық жаңару мен ғылыми зерттеулердің нәтижелерін іске асыру есебінен мал шаруашылығының өнімділігін тұрақты өсуінің оң нәтижесіне қолжеткізуге болады. Зерттеу жұмысында келесі әдістерді пайдаландық: абстракты, қатарлардың динамикалық қарқынын зерттеу. Бұл зерттеу әдістері жиналған фактілерге логикалық талдау жасауға, ұғымдар мен тұжырымдарды қалыптастыруға, қорытындылар мен теориялық тұжырымдар жасауға мүмкіндік береді.

Кілт сөздер: ауыл шаруашылығы, ет кластері, мемлекет, ғылым, бизнес, ет өңдеу кәсіпорындары, өнімдер, өндіріс, механизм, экспорт, ет өндіру кешені.

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Формирование и развитие мясного кластера в Западно-Казахстанской области

Одним из ключевых факторов эффективного развития мясного производства является рациональное использование имеющихся производственных ресурсов, природно-климатические условия и организационно-экономические факторы региона. Целью данного исследования явилось теоретико-методологическое обоснование оптимальных условий создания мясного кластера в Западно-Казахстанской области. Для оценки возможности создания мясного кластера был проведен анализ функционирования животноводческой отрасли региона и особенностей организационного влияния и экономического механизма взаимоотношений участников мясного кластера. Установлено, что Западно-Казахстанская область граничит с 5 регионами Российской Федерации, что позволяет осуществлять экспортные поставки мясной продукции. Так, в 2017 г. экспорт говядины составил 1736,5 т. Одной из проблем развития отрасли является недостаточная загруженность мясоперерабатывающих предприятий из-за недостаточной загрузки сырья, незавершенного механизма взаимоотношений мясоперерабатывающих предприятий и сельскохозяйственных производителей. Таким образом, создание мясного кластера в регионах позволяет эффективно привлекать государственное стимулирование бизнеса и науки к производству мяса крупного рогатого скота, а за счет технологической модернизации и внедрения результатов научных исследований можно достичь устойчивой положительной динамики роста поголовья животных. В ходе исследования использованы такие методы исследования, как аннотация, исследование динамических тенденций. Эти методы исследования позволяют проводить логический анализ собранных фактов, разрабатывать концепции и суждения, делать выводы и теоретические обобщения.

Ключевые слова: сельское хозяйство, мясной кластер, государство, наука, бизнес, мясоперерабатывающие предприятия, продукция, производство, машины, экспорт, мясной подкомплекс.