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THE COMPETITIVE IMPROVEMENT OF THE LIVESTOCK BRANCH ON THE BASE OF THE REGIONAL CLUSTER ORGANIZATION IN AKMOLA REGION IN KAZAKHSTAN

ПОВЫШЕНИЕ КОНКУРЕНТОСПОСОБНОСТИ ОТРАСЛИ ЖИВОТНОВОДСТВА НА ОСНОВЕ ФОРМИРОВАНИЯ МЯСНОГО КЛАСТЕРА В АКМОЛИНСКОЙ ОБЛАСТИ КАЗАХСТАНА

ҚАЗАҚСТАННЫҢ АҚМОЛА ОБЛЫСЫНДА ЕТ КЛАСТЕРІН ҚАЛЫПТАСТЫРУ НЕГІЗІНДЕ МАЛ ШАРУАШЫЛЫҒЫ САЛАСЫНЫҢ БӘСЕКЕЛЕСТІК ҚАБІЛЕТІН АРТТЫРУ

MAIRA BAUER
Doctor of Economics, Professor
SAULE OKUTAYEVA
PhD student
Kazakh Agrotechnical University of Seifullin S.

Abstract. This paper describes the problems of livestock production branch and their solutions. Discusses the mechanism of joining of livestock production entities into regional meat specialization cluster in one of the regions of the Republic of Kazakhstan - Akmola region. It includes main results of the review of foreign and domestic literature and authors own research. Research on global experience of clustering enabled to define the concept of "regional cluster", describe cluster models offered by domestic and foreign scientists.

Аннотация. Выявлены проблемы отрасли животноводства и показаны пути их решения. Рассмотрен механизм объединения субъектов производства животноводческой продукции в региональный кластер мясной специализации в одном из регионов Республики Казахстан – Акмолинской области. Представлены основные результаты обзора зарубежной и отечественной литературы, а также собственные исследования авторов. Изучение мирового опыта кластеризации позволило дать определение понятия «региональный кластер», описать модели кластеров, предлагаемых отечественными и зарубежными учеными.

Аңдатпа. Мал шаруашылығы саласының проблемалары анықталған және оларды шешу жолдары көрсетілген. Мал шаруашылығы өнімдерін өндіруші субъектерді өңірлік ет кластеріне Қазақстанның бір өңірінде – Ақмола облысында біріктіру механизмі қарастырылған. Шетелдік және отандық әдебиеттер және авторлардың өз зерттеулері келтірілген. Кластерлеудің әлемдік тәжірибесін зерделеу «өңірлік кластер» түсінігін анықтауға, отандық және шетелдік ғалымдар ұсынған кластерлер үлгілерін сипаттауға мүмкіндік берді.

Keywords: meat production, competitiveness of the branch, clustering, regional meat cluster, breeding stock, feedlots.

Ключевые слова: производство мяса, конкурентоспособность отрасли, кластеризация, региональный мясной кластер, племенное поголовье, откормочные площадки.

Тұтқалы сөздер: мал шаруашылығы өнімдері, ет өндірісі, саланың бәсекеге қабілеттілігі, кластерлеу, өңірлік ет кластері, асыл тұқымды мал басы, бордақылау алаңдары.

The livestock branch observing identified particular problems in the branch. First of all, it is a poor fodder supply. The absence of a stable fodder supply is the main reason of the hinder livestock development. Assignment of space for feed crops is not enough for the production of required crop quantity. Besides, there is the problem of low crop quality because of the irregularities in the agroprocedures during their production, manufacturing and capacity difficulties for compound feed industry.

Secondly, it is the low genetic animal potential capacity. The brood animal ratio rests small: cattle is 2% (approximately 120 thousand head of cattle), sheeps and goats -6,9%, pigs -6,5%, horses -2,5%. Moreover, an average daily gain comes up to 400 gram under the word's standards of 1000 gram, that is lower than in developed countries [1].

In response to the problem of the livestock breed in 2011 it was accepted the national program on development of the cattle meat export capacity, in according to which the delivery of import breeding livestock to the country started.

Thirdly, it is strong concentration of the livestock population in a private sector.The main producers of agricultural products in Kazakhstan for the last two decades have become small farms and smallholdings. There are typical for farm enterprises usage primitive technologies of livestock management and feeding; outdated production methods and product processing, low-level mechanization and automation; poor feed supply; inadequacy in livestock management to veterinary standards. As consequence there is a low livestock efficiency index.

Specified livestock problems hinder development of the processing industry. Because of them today local meat plants are supplied with good raw materials only for 40-50%. Therefore, in our opinion, to solve the livestock problems it is necessary to take measures to amalgamation of the small agricultural farm, development of integration processes through cooperation. An excellent solution is the creation of a meat cluster [2].

For the purpose of the regional policy improvement of Akmola region concerning the livestock branch it seems advisable to consider the way to combine all participating entities into the regional cluster of the meat specialization. Economy based on the clusters is a model of competitive and investment-attractive economy, providing the high population living and quality, involving into the manufacturing process both large enterprises and small and medium –sized businesses [3].

Although, domestic and foreign authors use increasingly the term 'cluster' in the economic literature, its unique and strict definition has not delineated. In this regard there is a need to systematize the gathered experience with the cluster theory study and define more exactly the nature of the "cluster" category.

Foundations of a modern economic theory of the cluster development date back to Marshall's A. works, where problems of regional development were described firstly and the phenomena of specified industrialized regions were found out [4].

To be noticed the term "cluster" is used(after the English "cluster" is a bunch, racemation, batch, concentration) has been used for a long time in many sciences, primarily natural: in the mathematic, astronomy, chemistry, nuclear physics. For example, in the last-named sciences the cluster is a group of elementary particles.

Among foreign, Russian and Kazakhstan specialists, who studied theoretical aspects of the cluster organization and operation problems, were such as Limer E., Gorkin A.P., Fredriksson K., Lindmark L., Akimbekov G.U., Essentugelov T.E., Grigoruk V.V., Kaliev G.A., Mamyrov N.K., Sagadiev K.A., etc.

Specialists from France Tolenado I. and Solye D. put to use the term "filera". It is more narrow interpretation of a cluster. To realize the potential profits there is a need to create technological communications on which fileras are based [5, 6].

Swedish economists Dakhman and Matsson also consider the cluster approach in their scientific research theories. Study of a national economy's structure, analysis of relationships of major corporations was used for the cluster theory of Swedish economists [7].

The special place in the theory development of sectoral industrial clusters takes the theory of "growth poles" (polede croissance) or "poles of development" by Francois Perroux. According to Perroux development of each economic system is associated with the certain "poles" which become the centers of economic development of the whole country due to their specified infrastructure [8].

It should be noted that in 1970 for description of enterprises concentration in space Soviet and Russian economic-geographers Gorkin A.P. and Smirnyagin L.V. used the term "cluster", which was also used by Swedish business-economistsFredriksson K. and Lindmark L. [9].

Probably, Porter M. is a founder of the cluster concept. According to him a cluster is a form of incorporation, which gets the balance of advantage cooperating independentand informal connected enterprises, because of the high productiveness, efficiency and changeability of participants during the organization process [10].

Porter M. defines clusters like geographically concentrated groups of affiliated companies, specialist providers, service providers, firms of related branches, and also organizations connected with their activities (for example, universi-

ties, agencies on standardization, trade blocs) in a certain areas, competing, but working in association [11, 12]. There are renderings of a "cluster" by different specialists in the schedule 1 [7, 8, 9, 13, 14].

Table 1 –Definition of the term "cluster" by different specialists

Theauthor	Thedefinition
Jakobs D.	Cluster is a geographical or spacial integration for economic activity, implying horizontal or vertical relationships, usage of common technology, availability of a "core", and sustainable cooperation as well.
Rozenfeld S.	Cluster is geographically limited aggregate of similar, associated or additional firms, with the active channels for business transactions, infrastructure, labor market and services, wich can obtain not only benefits from common opportunities, but shared risks also.
Ketels K.	Clusters should be created through natural way, without the decision, making by any government worker, the chief managers should recognize that their personal success depends on the job of others, and having combined together it is possible to solve common problems.
Porter M.	A form of incorporation, which gets the balance of advantage cooperating independent and informal connected enterprises, because of the high productiveness, efficiency and changeability of participants during the organization process
Migranyan A.A.	Cluster is the concentration of the most effective and integrated types of economic activity, in other words, the set of interrelated groups, successfully competing firms, which form the «golden section»(the «diamond» in the western interpretation) of the total state economic system and provide the competitive positions in sectoral, national and global markets.
Tsikhan T.V.	Cluster is a community of firms, closely related branches, mutually contributing to the growth of competiveness of each other.

The generalization both of theoretical aspects of the cluster development theory and academics views of economists allows you to separate out and reveal the principle of the cluster. Having summarized, thus, it is possible three basic cluster definitions:

1) Cluster is a limited with the region a form of integration, located inside related sectors, associated with different institutes as well. Cluster members cooperate for purposes of the competitiveness improvement both of separate elements and the whole structure.

2) Cluster is like vertical production chain, networks, formed around coordinating firms. The subjects are joined with a common way of procurement and distribution.

3) Cluster is industries, defined at the high level of aggregation (for example, the "steel cluster"), complex of sectors at another higher level of the aggregation (for example, the agroindustrial clusters), the union of regions with the similar economic and social situation. In other words, introduced points of view are based on the determination of the component cluster's elements, specificity of the relationships between its participants, and the geographic location as well. Each of concepts has a rational kernel.

In our opinion, the most interesting is the cluster theory in the works of American specialist Enright M., who developed the regional cluster theory with the next definition: a regional cluster is an industry cluster , where companies-members of the cluster are in proximity to each other. Following Enright's theory is suggested that competitive position are created not at the national level, as Porter thought, but at the regional level, where the main role plays historical background of the regions' development, cultural diversity of business, organization of production and education. That regional cluster need the planned support of the government agencies and research organizations [15].

Thus, the regional cluster is defined like the agglomeration of various companies, where relations of cooperation and competition are developing, as well as exchange of knowledge, information and advanced experience [16].

The main objective of a cluster is to enhance productivity through obtaining the maximum economic benefits via the increase in effectiveness of its member- enterprises through the advancing capacity to innovation [17].

The creation of a regional meat cluster of Akmola region will become an alternative to the existing integration system of agricultural producers, which has got a number of disadvantages, as practice shows. This cluster accumulates efforts of all stakeholders: business, science, agricultural producers, consumers and the state. Analisys of cluster initiatives, implemented for the past ten years in different countries shows the high competitiveness of these countries is based on the strong positions of in-

dividual clusters [1].

Currently, the economic literature conditionally marks three centers of the cluster development: North American, west European and Asian, each of which has its own characteristics [2]. For North American regionis typical commitment to the policy of "nominal federal interference" into the cluster development process [3]. The pioneers of the applying the cluster approach are the creators of Silicon Valley in the USA, where approximately 87 thousand companies, several dozens of research centers and a number of mega universities, about 180 venture companies and about 700 banks, which finance the business of individual companies, are located [1].

It should be noted that European experience with cluster creation is one of the most successful in the world. There are more than 2 thousand clusters in EU, which employ 38% of its labor force.

By clustering is fully covered Danish, Finnish, Norwegian and Swedish industry. Influenced by Michael Porter's theory there was carried out the large-scale survey in Finland [1]. In 1995 the project "Finland's advantages" was set up, in terms of which future possibilities of the national industry were explored and the national industrial strategy was developed and approved. For the moment an illustrative example of the effectivelydeveloped cluster in Finland is the city Oulu, where the company "Nokia", taking the third place in the world among the companies of such type, is located. The company, manufacturing the telecommunication equipment, as the parent company, united round itself 120 enterprises specializing in microelectronics and the software [3].

Thus, today many countries develop national programs and bear enormous financial costs for "growing" of clusters. Almost all EU countries have developed such programs. For example, in 2005 French government went ahead with the national cluster-based policy, which purpose it declared to provide the competitiveness of the key branches of the economy during 15-20 years. For 2006-2008 the country has spent 1,5 billion euro for support of 66 clusters. The policy of this country is realized in the shape of creating the poles of competitiveness, aimed at bringing together business, academic community and educational structures.

If until recently, clusters were the privilege of major economies, but in recent years there is a manifestation of this phenomenon in developing countries as well. Clustering is supported by special schedules in Hungary, Poland, the Czech Republic, and Slovenia. The Czech Republic has the program "Clusters", in Slovenia has adopted the strategy of industry's competitiveness improvement, based on the cluster functioning, there has been formed the association "Motor cluster of Slovenia", which includes 22 enterprises and 5 research and educational institutions. Based on data of the World Economic Forum the active clustering of Hungary, The Czech Republic and Slovenia's economics allowed those countries to significantly increase the competitiveness rankings and enter the top 30 of the most competitive countries [4].

The specificity of the cluster development in Asian region is a combination of pure Asian peculiarities with characteristics both West European and North American clusters [2]. There is own type of economic cluster in Asian region. It contains features and conditions bringing together with European region, but at the same time there are pure Asian specifics. Among similarities of Asian region with West European there is the state activity concerning development of the cluster initiatives. Consequently, summing up the experience of the cluster development, one can observe an economic effect of existing clusters, and Kazakhstan's economy has the opportunity to adopt the best practices of developed countries with regard to the development peculiarities of our national economy and regional republic markets.

World experience shows the labor capacity of enterprises in the cluster is 20-40% higher than of similar companies outside the cluster. According to Harvard Business School in the economy of the US clusters provide more than 32% of employment not including the public sector. The salary level in the States with clusters is 29% higher than the national average. The percent of US′s gross domestic product, producing in the clusters is approximately 60% [4].

The economy competitiveness of a country depends on agricultural development and growth of this sector should be considered as one of priority of the economic policy. The main objectives of the agricultural development should be: growth in production, quality and workforce productivity upgrading of agricultural enterprises and farms [21].

The schedule 2 illustrates quantity of the livestock in Akmola region for 2010-2014 years.

The livestock product is approximately equal to 1/3 of the total volume of gross output of the agricultural branch. Beef production in terms of meat production of all types is almost 50%, what one can see in the Schedule 4 and Diagram 1.

Notwithstanding, the proportion of the cattle meat production, i.e. the beef is bigger than other types of meat; the beef meat production rates are almost the same as rates of other species. We think it is an area of weakness of the beef producers. Therefore, corresponded enterprises should enhance production having united, working in the same cluster, where their job would be under the coordinating center supervision.

Table 2. Livestock quantity in Akmola region for 2010-2014years, thousands, animal units

Animal species	Years				
	2010	2011	2012	2013	2014
Cattle	383	308	334,8	357,5	372,6
Horses	101,4	112,6	119,7	128,6	129,3
Pigs	182,8	144,3	148,3	118,9	110,6
Sheepsandgoats	380,3	413,6	434,2	460,6	470,6

**The Statistical Agency of the Republic of Kazakhstan*

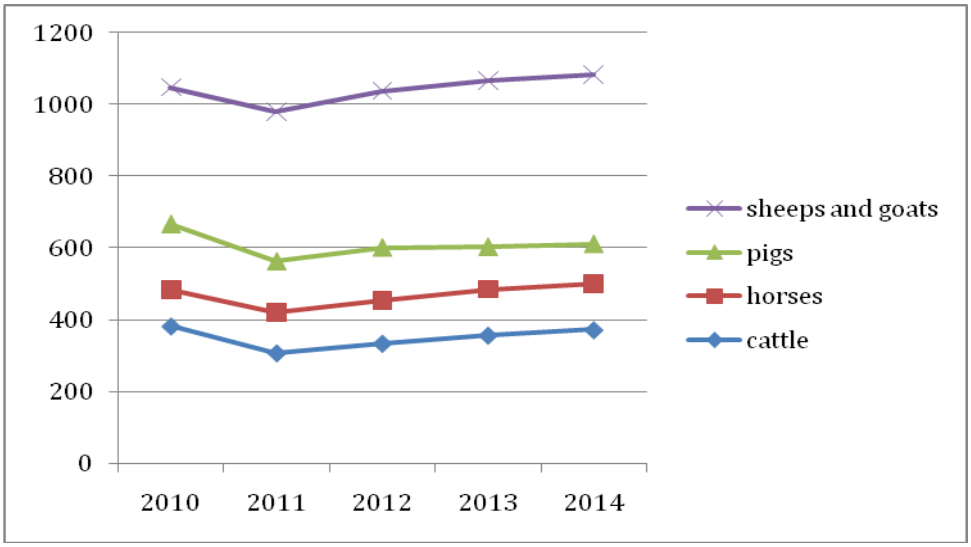

Diagram 1. Animal population in Akmola region in 2010-2014 years, thousands, animal units

Table 3. Meat production of all kinds of livestock and poultry in Akmola region in 2012-2014 years

	2012	2013	2014
Livestock and poultry body weight realized for slaughter, tons	75 884,1	79 421,2	82 434,0
Among other the cattle	35 523,5	37 847,0	39 469,3
Sheeps and goats	7748,28	8195,82	8774,38
Pigs	18 492,6	17 680,5	15 434,1
Horses	11 641,3	12 349,8	12 773,3
Poultry	2 448,4	3 321,3	5 955,6
Camels	5,4	2,8	3,6
Otheranimals	24,7	24,1	23,7

The analysis of the region agriculture led to the conclusion that livestock is more developed in the region, has a great competitive position, so its further development, as well as related branches is a priority direction of the agrarian sector development in the region. There are all conditions for creation of the regional meat cluster in Akmola region.

1) Geographic concentration and proximity: the key cluster participants, so-called the cluster core: feed platforms, feed factories, meat-cutting plants are in close proximity.

2) Availability of competitive positions: an advantageous geographical location, access to raw materials, highly qualified human resources, specialist educational establishments and research institutes.

3) Presence of competitive enterprises, export orientation of the branch.

4) Active implementation of national programs for development of the livestock export potential.

5) Presence of marketing outlets: proximity to Astana city and border provinces of the Rus-

sian Federation.

Having studied and summarized scientific works of Kazakhstan academic economists [18, 19, 20, 22, 23, 24] the authors suggest own model of the regional meat cluster. Proposed model of the meat cluster participants'cooperation will make possible to bring together enterprises related with a united technological cycle from the primary production to the final product, to promote close cooperation of the agricultural, processing and service companies, engineering staff, scientists, the state, etc.; to protect economic interests of each participant; and finally, to raise production of manufacturing range and increase its competitiveness.

It is necessary to integrate the meat cluster with enterprises directly involved in production of the final product – meat and products of it. The core of the meat cluster should be enterprises engaged in manufacturing, especially agricultural commodity producers, who have feed platforms, where livestock is grown to the slaughter weight, stud and bred livestock farms, meat processing enterprises.

Incorporation of all named organizations into the cluster will facilitate the realization of economic devices of the regional livestock policy and reach synergies. Therefore, formed in Akmola region meat cluster is able to have an impact on the competitiveness of the next areas:

- Increase in labor productivity at the enterprises inside the cluster;
- Creation of preconditions for developing of innovation and economic growth;
- Saturation both domestic market with meat products and entrance to the global markets;
- Stimulation of new business's organization.

Clusters in Kazakhstan are expected to be successful in areas, where competitive advantages of companies have formed on a base of spatial location. In some regions there were favorable conditions for the cluster development in these or those branches: there is a concentration of companies – manufacturers, suppliers, organizations of scientific – educational complex; the active role of regional and local authorities in support of cluster formation and development.

According to the authors, in the proposed model of regional meat cluster need to enable the coordinating center, work in the cluster should be carried out on a step-by-step basis, starting with the annual (periodic) analysis of the state of – the art of the livestock, then to asses the potential at the level of enterprises, involving research -and development centers.

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