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## CLUSTER – A PERSPECTIVE FORM OF AGRARIAN PRODUCTION IN REGION KLASTER – PERSPEKTÍVNA FORMA POĽNOHOSPODÁRSKEJ VÝROBY V REGIÓNE

Olena VORONYANSKA, Oleksandr BEREZHETSKY

Tavria state agrotechnological university, Melitopol, Ukraine

In this paper the approaches to identification of clusters as consolidation of enterprises according to the vertical and horizontal principles are generalized. The classification and main advantages of such new formation are given and a range of problems to be worked over within territorial and branch clusters is determined.

**Key words:** agro-industrial formations, clusters, horizontal integration, vertical integration, cooperation, small-scale enterprises, medium-scale enterprises, large-scale enterprises, competitive advantages

Agrarian production of Ukraine under modern conditions means a great number of independent enterprises having almost no connections in the process of production activity. Under absence of common directing authority each enterprise uses its own discretion planning, production organisation and marketing of its produce, defending, in case of necessity, its interests, getting over various difficulties caused by both economical and political situation in the country. Market economy has restricted functions and possibilities of branch authorities at all levels as well. It is high time not only for scientific, but also for practical implementation of construction of integrated formations, qualitatively differing from the existing ones.

### Material and methods

Great number of scholars considered issues of development and economical substantiation of efficiency of functioning of agrarian enterprises of different business forms, improvement of their interconnections, optimization of agricultural enterprises size, formation of strategic development directions under current conditions. Recognized scientists A. Fayol, B. Milner, V. Lieberman, V. Zinovchuk, Y. Zavadsky, L. Melnyk, M. Kropyvko, M. Malik, M. Porter, P. Makarenko, R. Grant, R. Fakhrutdinov and others worked over organization structures and enterprise management structures and introduced them into practice of production. During the soviet times horizontally and vertically integrated production structures were formed, their expediency was grounded and cost-effectiveness was calculated. Market economy made certain corrections in classification of the forms and types of production organization. Integration issues regained relevance. Meanwhile, theoretical grounds and practical recommendations on regional consolidation of enterprises, working in the same or related branches and on the same territory, are worked out insufficiently.

### Results and discussion

In the history of development of agricultural production in the former USSR countries there were examples of consolidating

enterprises of agrarian branch into agro-industrial enterprises, agro-industrial consolidations, scientific and production enterprises and consolidations, inter-sector enterprises and consolidations, and others. Such consolidations were created to solve the problem, which was common for all the enterprises, included in these consolidations. They relied on help of district economic and party authorities. Legislation of Ukraine provides four types of economic unifications: association, corporation, consortium, and concern. We consider corporation to be the most expedient type of economic unification out of them. Though, relations between partners, level of centralization and delegation of management functions, determined by the agreement terms, and their financial independence do not facilitate the achievement of strategic goals.

For example, in the first half-year of 2009 production of agricultural produce dropped in comparison with the corresponding period of the previous year. Still, industrial production of provision, drinks and tobacco goods dropped even more considerably (table 1).

According to the figures of the table 1 the production of the plant cultivation produce at the agricultural enterprises fell by 42.1 %, the total output of the agricultural enterprises fell by 27.3 %, and the production of the plant cultivation produce at all categories of farms fell by 25.6 %.

Current economic situation forced all economic subjects to solve their problems themselves. Agrarian branch is known to demand careful attitude to itself from the side of the state, scientific, technological and financial support, and improvement of legislative and regulatory base. Besides that market system of economic relations considerably raised standards of competitive ability of both agricultural produce on world markets and enterprises themselves as producers of this produce. Competitive ability must be conditional on availability of material and technical, labour, financial resources, providing production of certain kind of produce under favourable natural and climatic conditions. Though, it is known to be conditioned first of all by efficiency of their usage, accessibility of these resources, level of formation and proximity to the outlets, presence of strategic calculations on its demand.

A modern form of up-to-date production consolidation according to the territorial and branch similarity is a cluster. In M. Porter's opinion, a cluster is a group of interconnected

**Table 1** Total output rates of agricultural production, industrial production of provision, drinks and tobacco goods (percentage wise to the corresponding period of the previous year)

	2008	2009						First half-year of 2009 to 2008
		January	2 months	I quarter	4 months	5 months	first half-year	
Total output of farming								
All categories of farms	117.5	100.5	101.1	101.7	102.1	102.3	103	-14.5
Including: plant cultivation	130.5	—	—	—	—	—	104.9	-25.6
livestock farming	101.0	—	—	—	—	—	102.3	1.3
of them:								
agricultural enterprises	135.2	107.6	106	107.0	107.3	107.1	107.9	27.3
including: plant cultivation	155.6	—	—	—	—	—	113.5	-42.1
livestock farming	106.6	—	—	—	—	—	107.3	0.7
private farms	105.8	95.7	96.7	97.7	98.4	99.0	98.9	-6.9
including: plant cultivation	112.6	—	—	—	—	—	98.2	-14.4
livestock farming	97.6	—	—	—	—	—	99.0	1.4
Production of provision, drinks and tobacco goods	99.1	85.7	87.8	88.9	91.3	92.7	94.2	-4.9
including:								
production of provision and drinks	98.6	86.2	87.5	88.5	90.6	92.8	94.9	3.7
of it:								
— meat and meat produce	102.6	81.3	79.2	80.9	80.8	81.4	83.6	-19
— dairy produce and ice-cream	97.1	85.3	83.5	83.5	84.5	85.8	87.1	-10
— oil and animal fats	84.4	106.3	112.1	119.2	127.4	135.0	141.4	57
— inegridcereals and flour	111.2	100.2	104.3	103.4	100.5	96.2	94.5	-16.7
— bread and baked goods	104.2	92.0	89.3	89.5	89.2	89.6	89.6	-14.6
— drinks	103.1	78.2	81.6	82.1	86.5	91.8	96.1	-7
— processing and tinning vegetables and fruit	92.6	79.6	79.2	73.7	75.3	75.6	76.1	-16.5

**Tabuľka 1** Celková úroveň výkonových noriem poľnohospodárskej produkcie, priemyselnej produkcie potravín, nápojov a tabakových výrobkov (percentuálne vzhľadom na zodpovedajúce obdobie predchádzajúceho roka)

complementary companies and related to them organizations, located close to each other, acting in a certain sphere, that are characterized by common activity (Porter, 2002). There is also an opinion that clusters are concentrated according to regional principle forms of economic activity, performed within corresponding sectors, connected with educational infrastructure, scientific and research establishments and higher educational ones.

V. Bondarenko identifies cluster as a community of economically closely connected and closely located firms with related profiles, mutually facilitating general development and competitive ability increasing (Bondarenko, 2005). Leading role of large-scale firms and involving small- and medium-scale business for industrial cooperation and their active interacting in business and information space are meant. Generally accepted classification divides clusters into three main types:

- clusters created according to territorial similarity, to certain kind of economic performance within related subbranches. Such clusters are usually connected with scientific organizations and establishments;
- clusters created on the basis of vertical integration. The core is large-scale enterprises. Industrial connections encompass processes of supply, production, sale;
- clusters created according to branch similarity, having very high level of interaction.

What direction must enterprises clustering follow: bottom-up or top-down? Practice of creation of different consolidations of production and non-production sphere of activity is formed by one of the two ways: as a result

of implementation of state or regional programme of regional development, reorganization of state branch establishments and organizations, including them to the cluster and providing state presence in the cluster, or as a result of initiative from the side of agrarian enterprises, organizations of production and service infrastructure. In the second case the state takes no part in the functioning of such cluster.

As an integrated formation a cluster is a combination of horizontal and vertical integration, that is why it is considered to be a net agro-industrial group, whose success is conditioned by possibility and intersector activity of small and medium-scale enterprises.

Cluster structures unlike other enterprises and consolidations are characterized by the following distinctions:

- Existence of a large enterprise, which is the leader not only in industrial, but in innovation activity, and has possibilities to distinguish the development strategy of its activities as well as of activities of the whole consolidation.
- All enterprises that form the cluster function at the territory of one region.
- Existence and constant character of economic relations between all the members of cluster structure. These relations within the cluster prevail over the other relations.
- Long-term coordination of cooperation of all the cluster members within its industrial program, innovation activity, common systems of management, quality control etc.
- Clustering is a perfect ground for founding new associations, support for the sphere of education and university science.

Modern approach to regional development based on clusters meets understanding of state and regional authorities. Reforming of enterprises in agrarian sphere of Ukrainian economy led to destruction of powerful agricultural enterprises – collective and state farms. On their base numerous small and medium-scale enterprises were created. Though, economic development of some newly formed enterprises led to their consolidation, strengthening of their material and technical basis. Such enterprises show interest in studying and further usage of scientific and technical progress achievements and as well as world experience in the sphere of modern agrarian technology and engineering.

Existence of several competitive enterprises conditions competitiveness of the whole region (Grant, 2008). Clustering raises competitiveness of the region but that requires a strategic programme of region innovation development, which determines the role of such clusters. We should stress that cluster should be formed when the region has all corresponding factors, resources and competences, which have reached a certain degree of development and become significant in the current economic activity or have all the preconditions for having stable competitive advantages at the expense of higher efficiency, development of innovations, new directions and kinds of activity.

This approach is shared by A. Migryan, who distinguishes cluster as a concentration of the most effective and cooperating forms of economic activity, which is the union of interconnected groups of successfully competing firms, creating the spine of the state economic system and ensuring its competing positions on the branch, national and world markets.

Clustering is a perfect base for development of new forms of generalization and multiplying of knowledge; it stimulates the emerging of new scientific and technical directions and their industrial usage, and supports the sphere of education and university science, is used for constructive dialogue between the representatives of business sector and state, allows to higher the interconnection of private sector, state, traders, research and educational establishments in innovation process.

A cluster is characterized by the following features:

- Cluster is formed by the enterprises belonging to one industrial-engineering chain.
- Enterprises have common territorial and industrial connections.
- Cluster has modern industrial infrastructure to spread knowledge and technologies to its branches.
- The membership and structure of the cluster is flexible, without severe restrictions.
- Cluster is an open system.

Cluster policy realization is connected with the problem of economic and administrative mechanisms formation. But when enterprises are united with the single aim, it would raise competitiveness of all cluster participants at the expense of synergism. Inner specialization and standardization would also provide additional competitive advantages, minimize industrial and innovation spends.

Positive experience of agriculture cluster formation is already seen in Khmelnytsk, Vynnytsia, Ternopil, and Ivano-Frankivsk regions. These associations use regional inner resources, including resources of scientific and educational establishments, and financial and bank structures. Undoubtedly, support of the regional administrations has great importance in realization of strategic plans of the cluster.

Let us clear up the list of problems which can be solved by regional agro-industrial clusters:

- Facilitating of producing and processing enterprises interests.

- Meeting the requirements in home produced resources at the expense of inner resources and efficient redistribution of income based on inner subsidies.
- Procurement of private sector activation in growing labour-intense produce, which is unprofitable when produced by large-scale enterprises and providing the market for it.
- Introduction of complex produce quality control system and control system for resource saving usage due to the consolidation according to technological principle.
- Introduction of wasteless technologies and complex usage of saving technologies.
- Concentration of considerable financial resources for providing high investment attractiveness of the branch.

In such a way, initiative and joining of efforts of consolidation members and administration of the region are those factors which stimulate and support territorial cluster structures development.

### Conclusions

Regional cluster structures formation is a ground of development and support of competitive environment. Combination of cooperation and integration in the process of integral consolidation of agrarian enterprises is a base for stable development of the branch. Involvement of financial, intellectual, industrial resources for obtaining synergism effect would promote adaptation mechanism formation to respond the changes of macroeconomic and outer institutional environment.

### Súhrn

V rámci nášho článku vygenerujeme modely na identifikáciu klasterov na konsolidáciu podnikov podľa vertikálnych a horizontálnych princípov. V článku sa rozvíjajú rôzne aspekty klasifikácie ako sa aj identifikujú hlavne výhody aplikovaných metód. V rámci článku determinujeme spektrum problémov na riešenie z pohľadu územných a sektorových klasterov.

**Kľúčové slová:** agro-priemyselné formácie, klaster, horizontálna integrácia, vertikálna integrácia, spolupráca, malé podniky, stredné podniky, veľké podniky, konkurenčné výhody

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Contact address:

Voronyanska O.V., candidate of economic sciences, associate professor of Tavria state agrotechnological university, Berezhetsky O.V., candidate of technical sciences, associate professor of Tavria state agrotechnological university, B. Khmelnytskoko Ave., 18, Melitopol, Ukraine, 72312, e-mail: elena\_voron@inbox.ru