AGROCLUSTERS – INNOVATIVE FORM OF DEVELOPMENT OF RURAL TERRITORIES OF UKRAINE

Abstract. Globalization, European integration, the strengthening of international competition as a result of the rapid pace of scientific and technological progress and the intensification of innovation processes require new approaches to the socio-economic development of our country in general and of individual branches of its economy, in particular, agro-industrial complex.

Clusters in the world have been around for a long time. Cluster strategies have become widespread in developed countries of Europe, Asia, America. The agrarian cluster, which is the organizational and legal form of the enterprise, provides for the creation on a limited territory of the principles of partnership, cooperation and
specialization of associations, peer-to-peer agricultural companies, agricultural production cooperatives and other enterprises with the preservation of economic and legal independence, where competition is the driving force behind innovation development.

Compared to the world in Ukraine, clusters are something new. However, Chilean wine, Bavarian cars, the Silicon Valley in the US, and the sugar cane in Brazil are all examples of clusters that have thousands in the world. There are more than 2000 clusters in the EU. In the United States, in the early 2000s, 57% of the country’s full-time job was employed in clusters, and their share in GDP was 61%. Cluster development programs have over 75 countries.

The practical component of the cluster’s creation in Ukraine is complicated by the legislative framework, or rather, its absence. Despite the fact that local and national authorities constantly support the introduction of a cluster approach, virtually any regulatory regulation of the creation and operation of clusters is lacking, as are the lack of financial instruments for state support to clusters. While in countries where clusters operate successfully, 50–70% of the cluster budget is filled with funds from local and state cluster development support programs. That is why it is difficult for Ukrainian clusters to get started, hoping only for their own strength and support for international technical assistance programs.

**Keywords:** agroindustrial complex (APC), potential, innovative territorial cluster, cluster policy, competitiveness.

**АГРОКЛАСТЕРИ – ІНОВАЦІЙНА ФОРМА РОЗВИТКУ СІЛЬСЬКИХ ТЕРІТОРІЙ УКРАЇНИ**

**Анотація.** Глобалізація, євроінтеграція, посилення міжнародної конкуренції в результаті стрімких темпів розвитку науково-технічного прогресу й активизації інноваційних процесів вимагають нових підходів до соціально-економічного розвитку нашої держави загалом та окремих галузей її економіки, зокрема АПК.

Кластери у світі існують вже давно. Кластерні стратегії набули велико-го поширення в розвинених країнах Європи, Азії, Америки. Агрокластер яка є організаційно-правовою формою підприємства, передбачає створення на обмеженій території на принципах партнерства, кооперації та спеціалізації асоціацій, рівноправно-господарюючих агрофірм, сільськогосподарських виробничих кооперацій та інших підприємств зі збереженням господарської та юридичної самостійності, де рушійною силою інноваційного розвитку виступає конкуренція.

У порівняння зі світом в Україні кластери — це щось нове. Однак чилійське вино, баварські автомобілі, Силіконова Долина в США, цукрова тростина в Бразилії — це все приклади кластерів, яких у світі налічується тисячі. На території ЄС більше 2000 кластерів. У США ще на початку 2000-х років в кластерах було задіяно 57% всього працездатного потенціалу країни, а їх частика у ВВП становила 61%. Програми з розвитку кластерів мають більше 75 країн світу.
Практичную складову створення кластера в Україні ускладнює законода-
вча база, точніше її відсутність. Попри те, що органи влади на місцевому і
національному рівні постійно висловлюють підтримку запровадженню клас-
терного підходу, фактично будь-якого нормативного регулювання процес-
су створення і роботи кластерів немає, як і відсутні фінансові інструменти
державної підтримки роботи кластерів. У той час, як у країнах, де кластери
успішно функціонують, 50–70 % бюджету кластеру наповнюється саме кош-
tами місцевих і державних програм підтримки розвитку кластерів. Саме то-
u му українським кластерам важко розпочати роботу, доводиться сподіватися
лише на власні сили і підтримку міжнародних програм технічної допомоги.

Ключові слова: агропромисловий комплекс (АПК), потенціал, іннова-
ційний територіальний кластер, кластерна політика, конкурентоспромож-
ність.

АГРОКЛАСТЕРЫ – ИННОВАЦИОННАЯ ФОРМА РАЗВИТИЯ
СЕЛЬСКИХ ТЕРИТОРИЙ УКРАИНЫ

Аннотация. Глобализация, евроинтеграция, усиление международной
конкуренции в результате стремительных темпов развития научно-техни-
ческого прогресса и активизации инновационных процессов требуют новых
подходов к социально-экономического развития нашего государства в целом
и отдельных отраслей ее экономики, в частности АПК.

Кластеры в мире существуют уже давно. Кластерные стратегии получи-
ли большое распространение в развитых странах Европы, Азии, Америки.
Агрокластер которая является организационно-правовой формой предпри-
ятия, предусматривает создание на ограниченной территории на принципах
партнерства, кооперации и специализации ассоциаций, равноправно-хозяй-
ствующих агрофирм, сельскохозяйственных производственных коопераций
и других предприятий с сохранением хозяйственной и юридической само-
стоятельности, где движущей силой инновационного развития выступает
конкуренция.

По сравнению с миром в Украине кластеры — это что-то новое. Однако
чилийское вино, баварские автомобили, Силиконовая Долина в США, са-
харный тростник в Бразилии — это все примеры кластеров, которых в мире
насчитывается тысячи. На территории ЕС более 2000 кластеров. В США еще
в начале 2000-х годов в кластерах было задействовано 57 % всего трудоспо-
собного потенциала страны, а их доля в ВВП составляла 61 %. Программы по
развитию кластеров имеют более 75 стран мира.

Практическую составляющую создания кластера в Украине усложняет за-
конодательная база, точнее ее отсутствие. Несмотря на то, что органы власти
на местном и национальном уровне постоянно выражают поддержку внедре-
нию кластерного подхода, фактически любого нормативного регулирования
процесса создания и работы кластеров нет, как и отсутствуют финансовые
инструменты государственной поддержки работы кластеров. В то время, как
в странах, где кластеры успешно функционируют, 50–70 % бюджета кластера
Problem statement. Ukraine has ample opportunities for the effective realization of its agrarian potential, in particular, favourable natural resource conditions, good geographical location, and age-old traditions of agriculture. But the potential of the agrarian sector is currently not used sufficiently, in particular, the inappropriate use of material, financial and labour resources, the extensive nature of agricultural development, and the unsatisfactory level of innovation activity are a brake on increasing production, productivity and efficiency. This creates threats to the country’s economic security, related to the decline in the level of food supply of the population, the slow pace of investment and innovation development and the build-up of structural imbalances in the economy. Neutralization of threats requires the formation of the foundations of modern agricultural policy, the measures of which would allow the disclosure and fully exploit the competitive advantages of the agrarian sector of the economy, including in the context of European integration of Ukraine.

Cluster development as a factor of increasing the national and regional competitiveness of individual rural areas and AIC in general may become a hallmark of the mechanism of adaptation of the agrarian sector of the economy to the requirements of European structures, adding certainty in the process of implementing the agrarian model of the EU in Ukraine to the modern innovative economy.

Analysis of recent researches and publications. The issue of the development of the agrarian sector and the foundation of cluster associations in the field of industry, tourism and agro-industrial production are raised in the works of such domestic and foreign scholars namely: M. M. Zaverach, N. M. Chupryna, V. V. Bakhum, O. M. Vyshnevska, I. Yu. Hryshov, Ye. V. Dorzhiev, V. M. Rusan, O. V. Sob-
kevych, A. D. Yurchenko, V. H. Tkachenko, V. I. Bohachov, Ye. Halves-Nohalez, Kh. Irshad and others.

Despite the substantial theoretical and methodological advances, today in the domestic agro-industrial sector no significant positive tendencies have been achieved in the development of cluster entities.

The purpose of the article is the definition of conceptual foundations for the development of cluster entities as an organizational and economic basis for increasing the national and regional competitiveness of individual rural areas and AIC in general.

Presentation of the main material. The weak effectiveness of the mechanisms of state regulation of agrarian reforms, begun in the early 90’s of the 20th century, led to the destruction of the existing system of agricultural production, the reduction of the efficiency and productivity of agrarian labour, the inefficient use of the land-resource potential of the village and, as a result, virtually complete loss of innovation the potential of the entire agro-industrial complex (AIC). Aggravation of competition in the domestic and world markets of agro-industrial products, the complication of the modern investment climate, and low level of readiness of the domestic agrarian sector of the economy to the conditions of EU integration require revision of the existing approach to the definition of state priorities of AIC innovation development, which is of fundamental importance for the further development of the Ukrainian economy.

The practice of the transition economy of the first years of Ukraine’s independence showed that institutional transformations were often delayed in comparison with the objective course of the transformation processes. Certain negative social consequences of market reforms were largely due to the imperfection of the economic and legal framework of management. Liberal approaches in the process of reforming the domestic economy were used in the absence of their own ideas about the logic of market transformations, that is, borrowing foreign experience and importing a market economy model into a local unprepared economic basis, which lacked the relevant institutional conditions. They tried to reduce the path to capitalism, creating a market economy without fundamental institutions, and institutes without a fundamental infrastructure [2].

The development of the domestic economy depends to a large extent on the results of complex co-evolutionary processes of adaptation of new technologies to the economic environment, including the technologies of managing innovation processes in economic systems. The improvement of the management system for AIC economic development of the is characterized by a combination of the influence of both agricultural and processing enterprises and other participants of the investigated complex on factors of production and infrastructure provision from a single coordination centre of management taking into account the priorities of regulation of innovation development. It should be noted that the agrarian sector has a number of features that affect the formation of its potential. The development of the agrarian sector is related to the biogeographic environment and depends on the natural and
climatic conditions. This is primarily due to the use of land as a specific means of production, its fertility and location. The specificity of the land as an instrument of labour is that it is also the subject of labour at the same time. Unlike industry, the process of agricultural production involves not three, but four resources: fixed assets and working capital, living labour and land, while land in the agricultural sector is the main means of production, while it is spatial basis in other sectors (except mining) only. As a basic means of production, the land requires its reproduction on an expanded basis, which generates a number of specific problems related to the conservation, rational use and increase of soil fertility.

The peculiarities of the agrarian sector include seasonality of production, which affects the organization of work in this area, predetermines the peculiarities of sales of products and cash inflows. The interval between the working period and the results in agriculture significantly affects the formation of incomes of workers in this area, since the final amount of such income becomes known after the sale of agricultural products only. Agrarian enterprises operate in conditions of high risk and uncertainty. The reason for this is that the economic reproduction process is interwoven with the natural process of growth and development of living organisms that develop on the basis of biological laws. The agrarian sector is a lending industry that requires additional financial resources, primarily in the form of short-term loans to provide operational activities. This is due to the existence of a significant seasonal gap between working capital investments and income generation. The low level of logistics, the application of imperfect technologies in both crop and livestock production is negatively reflected in the indicators of efficiency and productivity of production. Today agricultural production in Ukraine is low-yield; its profitability is about 30 % [3].

A significant reason for the low prices and profits of agricultural producers is their inability to effectively carry out export supplies. Among the reasons that restrain the output of domestic commodity producers to the external market are the following: monopolization of the secondary market of strategically important types of agricultural products; lack of financial resources for export operations; lack of proper information support and monitoring of the external market; and the lack of qualified specialists in the field of conducting foreign economic operations [4].

The development of rural areas in Ukraine is hampered by the insufficient level of development of public administration. A huge number of factors affect the decision of agricultural problems. Strategic development of agricultural areas is important, among them, which includes the following: creation of a capable local government institution; and creation of preconditions for development of entrepreneurship in the countryside. This makes it necessary to look for innovative approaches to the organizational and economic mechanisms for managing technological processes in AIC. Cluster integration structures may become an effective form in unstable and crisis conditions.

Successful years of experience in the world confirms the vitality and practical value of the M. Porter cluster the-
ory, according to which a group of related companies and institutions that cooperate and complement each other can significantly strengthen national and regional competitiveness on the world market [8]. Numerous empirical studies have shown that the average wage and employment in clustered regions significantly exceed those of areas where such formations are not available [5]. As a result, clustering of the economy has become a global tendency that has embraced developed countries (the USA, Canada, and the EU countries), new industrialized countries (China, India, Mexico, and Indonesia) and transition economies (Hungary, Slovenia, Russia, and Kazakhstan, etc.).

In the scientific literature, various approaches to the definition of the term ‘cluster’, which are based on the concept of Porter, can be found either in developing or criticizing the theoretical positions laid down in its basis. In our view, the rather complete interpretation of this concept is formulated by the United Nations Industrial Development Organization (UNIDO): ‘Clusters are the union of enterprises by industry and geographical features that produce and implement a wide range of interrelated and(or) complementary products, while acquiring new opportunities for development and new risks’ [6, р. 9]. This definition emphasizes the following two despite features of cluster formations, namely: (1) clusters are formed with a critical mass of businesses located in geographic proximity to each other; (2) enterprise cluster differ in a number of characteristics (the presence of shared needs and interests, interdependence and complementarity, creative approach, innovation, focus on a particular segment of consumers and use a single infrastructure, etc.) [6].

The founder of innovative clusters is considered to be the American Silicon Valley, on which territory there are about 87 thousand companies, 40 research centres and dozens of universities, the largest of which is Stanford University. Between the university and the private sector, there is a constant exchange of information and ‘charged’ with innovative people. Serving a cluster of about one-third of American venture firms (180 companies), 47 investment and 700 commercial banks, which in one way or another finance the activities of companies. Such an innovation activity allowed the Silicon Valley to become a leader in national exports, accounting for 40 % of California’s export trade. Throughout the world, techno regions are trying to replicate the success of the Valley, up to the imitation of the names: Silicon Plateau in Bangalore (India), Silicon Island in Taiwan and Silicon Valley in Israel.

World practice shows that in the last two decades, the cluster formation process has been quite active. In general, according to experts, to date clustering has covered about 50 % of the economies of the leading countries of the world [7].

In the US, over half of the clusters work, and the share of GDP produced in them has exceeded 60 %. In the EU, there are more than 2 thousand clusters, which employ 38 % of its workforce.

Back in 2012, the US National Research Council published a report where much more attention was paid to cluster policy, and it was emphasized not only as a measure of regional development. The report noted that the
emergence of cluster policy at the federal level in the United States became a reaction to the crisis in 2008. For the first time, the notion of cluster policy came into force, namely the America Competes Act, in 2010. It, in particular, the Department of Commerce of the United States places the selection of competitive grants for innovative regional clusters, and the creation of research and information programs for the development of regional innovation strategies [8].

Danish, Finnish, Norwegian and Swedish industries are fully covered by clustering. So, Finland, whose economic policy is based on clustering, occupies leading positions in global competitiveness ratings during 2000s. Due to high productivity clusters, this country, having only 0.5% of the world’s forest resources, provides 10% of world exports of wood processing products and 25% paper. In the telecommunications market, it provides 30% of the world’s mobile communications equipment exports and 40% mobile phones.

Italy’s industrial clusters account for 43% of the employment in the industry and more than 30% of national exports. Cluster structures in Germany (chemistry and engineering), in France (food production, cosmetics) are operating successfully.

The process of forming clusters is actively taking place in the Southeast Asia and China, in particular, in Singapore (petrochemicals), in Japan (automotive) and in other countries. In China today, there are more than 60 special cluster zones, in which there are about 30 thousand firms with a staff of 3.5 million people and a sales volume of about $200 billion for a year.

Analysing global clustering experience, we cannot fail to note the tendencies of the development of an increasing number of international clusters, including beyond the boundaries of individual regions. So, for example, many clusters those have the status of European, kook for to reach the international level. This mainly concerns international and cross-border projects. An example is the Biotech Valley, which unites clusters in France, Germany and Switzerland, resulting in a strong synergistic effect. The French pharmaceutical cluster through Louis Pasteur University collaborates with the Invivo Canadian cluster operating in Montreal. The goal of such cooperation is to find prospective markets in North America and Europe for these clusters. As concrete examples of the successful application of the cluster approach to increase and improve the level of implementation of the AIC potential, the activities of cluster associations in Canada can be initiated. The latest trend in this country is an active formation of clusters, which combine traditional agroindustrial complex structure with enterprises, which specialize in tourism, information and communication technologies, the production of renewable sources of energy, and nanotechnology, etc. There are currently eleven similar locations, including the following: biopharmaceutical cluster in Montreal; agricultural biotech cluster in Saskatoon; agrotourism cluster of Alberta; cluster of natural healing technologies in Ontario and others.

Today, farmers’ associations have a steady, advanced position in agribusinesses in Japan, European and North American countries. Developing in ma-
ny spheres of AIC, they are the largest producers and suppliers of agricultural products within national and international agrarian markets. In the US and Canada, farmers’ associations, in which 30–40 % of farmers take part, have become serious competitors for large agribusiness firms. Practically the whole peasantry is involved in such forms of organization and it holds leading positions in solving the food problem in Japan. Clustering in these countries was initiated by the state, which is why the clusters received support through the formulation of legislation regulating their activities, tax breaks, subsidies and targeted development programs.

At the state level, support for such initiatives includes: the creation of specialized research infrastructure, the provision of highly skilled personnel, organizational support for the creation of new firms and their expansion, promotion of external relations and partial resource support [6, р. 9–12].

There are also world-known clustered agribusinesses in Poland (fruit and vegetable and agro-tourism), cheese-making clusters in Ecuador, Peru and Mexico, a nut cluster in Brazil, a South Wisconsin Wine Cluster, a cluster for producing various foods in South-East Ohio, a vermouth cheese cluster, a poultry biotech cluster (USA), a flower clerk in Holland, an oil and seed cluster in Argentina, and others.

In parallel with active advancement at different levels and already real examples of cluster associations, there is still ambiguity surrounding this issue. Mainly because of the poor awareness of farmers about clusters. Ukrainian farmers, often due to the negative historical experience of the association, are somewhat biased towards the proposals of joint activities and do not understand their individual benefits in this form of work. The cluster is also a new and less commonplace concept in the Ukrainian agrarian region; therefore there is a share of distrust and scepticism among farmers.

What is the cluster different from co-operation? This issue is unclear for most farmers. The cooperative is an integration association with horizontal ties. That is, in such a form manufacturers of the same type are united in order to minimize production costs, to make larger batches and, accordingly, to obtain a higher price.

The cluster is an association where other structures, organizations, institutions, and experts are added to the horizontal integration of the producers. This is a much more complex form of association. It is about those who are involved in various activities in the activities of farmers and may be useful along the whole chain of production and sale of products. This is the vertical ties. These include suppliers of resources and raw materials, components and equipment; those who are engaged in processing, packaging and labelling of products; transport and logistics companies; and wholesale and retail distribution networks. Supporting integration ties are associations with institutions and organizations that help the sector to develop: government agencies, educational and scientific institutions, banking and insurance institutions, development agencies, specialized media, consulting companies or individual consultants and community organizations, etc. Hence, the cluster is
a much wider association, and the cooperative can be its member [9].

In the conditions of European integration of Ukraine, it’s time not only understanding but also the ability to apply and use new models of economic management, the choice of directions for increasing the competitive strength of territories, regions, regions, taking into account trends in the development of competitive regions and opportunities for cooperation between them. There are already several agro clusters in Ukraine that demonstrate great success in the development, quickly switching from the production of raw materials for the release of products with a profound level of processing. According to the Unified State Register of Legal Entities, Individuals-Entrepreneurs and Public Formations, 10–12 clusters can be counted only. However, there are also so-called informal clusters. In addition, the cluster can be registered but does not actually operate. The most active regions in the development of clusters experts call the Kyiv, Zakarpattia, Zaporizhzhia and Kharkiv oblasts. And the best examples of clusters in Ukraine in recent times are the Ukrainian Food Valley, Agro Food Cluster Kharkiv and Ukrainian Organic Cluster. However, the only conscious foundation of clusters will make it possible to fully utilize and ensure the competitive advantages of clusters. The cluster approach allows AIC companies to focus on the area of activity and technology that has some success and experience. Companies will also benefit from synergy. Currently, the state is actually separated from this process; the relevant legislation in Ukraine and grants from the state budget does not exist. European clusters can form 50–70 % at the expense of state budget subsidies; domestic clusters can count on their own strength, or at best, with donor organizations.

According to the acting Minister of Agrarian Policy and Food of Ukraine O. Trofimtseva, the creation of clusters is an optimal tool for the development of rural areas. This was announced by the acting Minister in the framework of the AGROPORT WEST LVIV 2019 International Agro-industrial Exhibition in March 2019. She noted that clustering has today’s support at the government and state level. This is a business-oriented model that works for self-sustainability. The ministry has already supported and ready to continue supporting the idea of business informational and advisory. Cluster ideas, along with smart-specialization, can enhance the competitiveness of the regions and be effective in newly created territorial communities where there are young and initiative leaders. The Ministry of Agrarian Policy introduced pilot projects on the implementation of agro clusters in Lviv and Odessa oblasts. There are HorboHory is in Lviv region and Frumushyka Nova is in the Odessa region. The implementation of each of these projects is a way of combining financial, human and natural resources, state, business and rural communities. The general budgets of the projects amounted in UAH 39,56 million in the Odessa region, and UAH 27,6 million in Lviv region [10].

Thus, the study of foreign studies makes it possible to argue that the slow formation of clusters in Ukraine is due to the following factors:
• Lack of normative definition of ‘cluster’, its types, complex of measures on creation of clusters in Ukraine;
• Lack of sufficient information support for the creation and operation of clusters in Ukraine;
• Insufficient interest of small and medium-sized enterprises to integrate into large production systems;
• Little experience of cluster functioning in Ukraine; and
• Lack of investors due to the investment attractiveness of the regions.

Conclusions. In order to overcome the negative tendencies and conservatism in AIC of Ukraine, it is necessary to make structural changes in the development of rural areas. Analysing the experience of Germany, the Netherlands, Japan and Italy, the agribusinesses, who have succeeded and lead the world market, clusterization was initiated by the state and provided significant legislative, informational, financial support, targeted programs and adapted to the specifics of the regions.

There are already several agro clusters in Ukraine that demonstrate great success in the development, quickly switching from the production of raw materials for the release of products with a profound level of processing. The reason for the slow foundation of the cluster in Ukraine is complicated by the legislative framework, or rather its lack. Despite the fact that the authorities at the local and national levels are constantly expressing support for the implementation of the cluster approach, virtually any regulatory process of foundation and operation of clusters there, as there are no financial instruments of state support for the operation of clusters.

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