

CLUSTER SUPPORT POLICIES AND THEIR FUNDING MECHANISM

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Abstract: *Modern regional development trends include the strengthening of the region capacity by reunion in industrial groups called clusters. This research starts from the hypothesis that the implementation of cluster support policies has a contribution to the clusters development and to the promotion of the regional economic growth. The purpose of this study was to analyze policy measures that contribute to the cluster development and to determine the cluster support mechanisms that can be implemented in the European Union associated countries. For the study were used logical reasoning methods, bibliographic research and indirect observation, based on inductive demarche. Research is focused on analyze of supporting and developing policies for cluster programs at the European level but also in other regions of the world. The exploration of the possibilities and mechanisms of cluster financing has led us to the conclusion that the most important task in developing and implementing of a cluster programs is to determine the optimal structure of funding sources. As a result of the study, were determined the directions and the functional mechanisms for encouraging cluster development, including funding mechanisms that can contribute to the regional development.*

Key words: *cluster, support policies, funding mechanism.*

JEL Classification: *R11, G18.*

1. Introduction

In recent years, the ways to develop and boost economic growth have been increasingly focused on creating clusters. Governments around the world consider clusters as drivers of innovation that represents effective policies instruments for entrepreneurial and regional development. International examples demonstrate that successful clusters are a right environment where businesses can develop their competitive advantages and generate prosperity and local economic development.

The benefits of business concentration have been known since Alfred Marshall. Simple knowledge transfer channels, supplier specialization, and workforce concentration are the main elements of superiority seen by Marshall for companies close to each other and operating in related areas. In 1956, Walter Isard founded regional science, recognizing geographic proximity as a two-way advantage. On the one hand, Isard referred to 'localization' that give the privilege of approaching companies in the same industry. On the other hand, the author believes that 'urbanization' is the advantage of being close to companies in other industries (Isard, 1956).

Several decades later, in 1990, Michael Porter introduced the term 'cluster' by addressing competitive advantage theory at industrial and even national level (Porter, 2000). Porter (1990) argued that economic development is based not only on the factors described in classical theory (labor, nature, capital), but also on the company's strategy and structure, on the demand, competition and industrial connections (Porter's Diamond).

The competitive environment created because of globalization has brought the need for affirmation in the markets through new advantages. Supply specialization and concentration of resources through the reunion of companies has become a solution for conquering markets by using competitive advantages. At the same time, clustering connections between companies, research institutions and authorities contribute to economic development through innovation and knowledge transfer.

Social and green economy in which prosperity is guaranteed through innovation, knowledge transfer and a better use of resources is the priority of EU development set in

the Europe 2020 Strategy. Smart, sustainable and inclusive growth can be ensured through clusters, which contributes, to the modernization of the economy by increasing the competitiveness of products, services and labor (Ungur, 2017).

The need to promote cluster support policies comes from the fact that clusters are designed to support predominantly small and medium-sized enterprises and to exploit their competitive advantages on the market. Because the economy of European countries is mainly concentrated in SMEs, we believe that supporting cluster development is important for ensuring economic growth in the countries of the region. This support can be achieved through policy measures, including financial ones, which need to be promoted at the state level. The hypothesis behind the research was that the implementation of clustering support policies could contribute to the development of clusters. This hypothesis generated several research questions: what cluster support policies are, what cluster financing possibilities and mechanisms exist and what is the impact of these policies on the cluster development process?

2. Policies to support and develop cluster programs

2.1. Importance of cluster policy

International experience shows that there are possibilities to encourage cluster development through policy measures. Clustering policies are related to traditional industrial policies. In recent years, they have shifted their focus to the creation and development of industrial sectors, based on the use of modern, science-intensive technologies and to represent centers of industrial integration (production) of small and medium-sized enterprises (Government Decision no. 614 of 20.08.2013). EU industrial policy is specifically aimed at: (1) 'speeding up the adjustment of industry to structural changes'; (2) 'encouraging an environment favorable to initiative and to the development of undertakings throughout the Union, particularly small and medium-sized undertakings'; (3) 'encouraging an environment favorable to cooperation between undertakings'; and (4) 'fostering better exploitation of the industrial potential of policies of innovation, research and technological development' (European Parliament). From these, the orientation of European policy towards the integration of technological, scientific and SME entities is clearly outlined.

In some sources, clustering policy is presented as an attractive alternative to traditional industrial policy (Fesability study, 2015). Traditional industrial policy is considered to be outdated because it is focused on the promotion of the economic sectors and priority enterprises. While clustering policy is based on the idea that the well-being of a country (regions) is determined by the functioning of groups of societies which are interconnected through productive relationships. Traditional industrial policy was based on state-defined policy objectives aimed at solving existing market problems, while clustering policy treats the economic development as a process of cooperation where greater importance is given to cooperation between companies, organizations, public institutions and structures associated by common operational objectives based on horizontal communication, and not on centralized development strategies.

Therefore, the main object of cluster policy is not an individual company, but the development of an industrial system for the whole region that can support such productive relationships among the actors. Another advantage of cluster policy is to reduce the likelihood of government errors (compared to traditional industrial policy) because some of the responsibilities are directed towards cluster participants. Under these conditions, the state has a role of coordinator of the regional development processes.

The importance of cluster policy and the role of clusters in regional development derives from the following aspects (Sizov, 2010).

- ✓ the cluster policy making contribute to the development of the competitive market in order to increase competitiveness of companies;
- ✓ cluster policy influences microeconomics by analyzing markets and economic entities not on the basis of inherited production factors but on the basis of newly created factors. The microeconomic approach in the cluster policy allows for consideration the local development characteristics and the development of effective programs oriented to accelerating development and increasing the competitiveness of companies;
- ✓ the implementation of cluster policy is based on ensuring interaction between state authorities, businesses, scientific and educational institutions to coordinate efforts to increase innovative products and services, which helps to increase labor efficiency;
- ✓ realization of cluster policy is oriented towards stimulating the innovative potential of SMEs, which have the largest numerical share in clusters and which are the main reasons for cluster policies promotion.

At international level, we delineate a few clustering policy models:

1. The European model, based on the concentration of competing companies within the same geographical area, which produces different products and forms a common marketing strategy.
2. The North American model - combines a number of industrial companies based on the principle of territorial specialization.
3. The Japanese model, characterized by concentration of SMEs around a large company-monopolist.
4. The Russian model, characterized by the active role of the state in the clustering process.

2.2. European policies to support cluster activity

At the European level, national cluster development programs have emerged since 1995, even though there have been some business reunions with common objectives. By the end of 2000, programs of support and development of business clusters have been already exist in 26 EU countries. These programs are important economic policy instruments and are included in national and regional development strategies and significant budgetary resources are allocated for their implementation.

The process of cluster formation in the European countries has taken place differently. In France, the development of cluster activity was slowed down because of the traditional centralized state sector. Only with the adoption of the Territorial Development Program the first organizations for manage the territorial development and they fund have appeared. More than 100 projects for regional development were subsequently developed and adopted through reunion in cluster systems. France pays particular attention to strengthening the links between universities and industry with the aim of developing small innovative business. All researches in the field of innovation were supported by the state and were commissioned by the National Planning Agency.

Regulatory level in France were set to increase mobility requirements for scientific staff of national research centers. They have been given facilities to open their own companies and provide consulting services to industrial companies. Thus, clusters were created on the basis of partnerships between local industrial groups and universities or research centers.

In the United Kingdom, the Regional Development Concept states that economic performance can be achieved on the basis of local development, which involves the decentralization of the decision-making system. Territorial planning was initiated by the

central government, which has only general and financial coordination tasks for the projects. The direct management of regional development projects is the responsibility of the territorial authorities

Traditionally, Sweden is a country oriented towards a fundamental macroeconomic policy, i.e. an open market with a set of rules that are identical for all, substantial investment in infrastructure, education and science. The geographic factors, the density of economic activities and the Swedish academic tradition represent a number of favorable factors for the clusters development. However, the Swedish authorities were skeptical about the reunion of enterprises in clusters. It is considered that the geographical location of the companies is too dispersed and that the population density is rather low, which creates difficulties in the implementation of cluster projects.

After 2000, the situation has changed due to the reorientation of economic policy towards supporting and promoting clusters. Sweden's National Innovation Strategy was approved and a Vinnväxt program was launched to promote sustainable growth based on the international competitiveness of the regions through innovation system development. The first three regional groups that received support under this program were selected in 2003. They received financial support of 10 million SEK per year for a period of 10 years.

The Norwegian commercial and industrial policy of the twentieth century was focused on supporting the development projects of individual companies. These companies could obtain financial support from the state for the implementation of some innovative ideas or projects. After 1990, the Norwegian authorities have noticed that most innovative projects have been developed through the cooperation of several companies and the cooperation of business and academic sectors. Based on this observation, Norway has embarked on a new path of economic development, namely the reunification of companies in clusters to support innovation and increase competitiveness.

In 2002, a professional and financial support program for clusters was launched, called Arena - Innovation Networks. It was meant to contribute to the development of cooperation between industry, research and society. Later, in 2006, another program, called Norwegian Center of Expertise (NCE) was launched. The program aims to support the sustainable growth of innovation and internationalization processes in clusters and is geared to support Norway's long-term economic development. The Norwegian Expert Center is managed and implemented by three major Norwegian innovation agencies: Innovation Norway, the Norwegian Council for Science and SIVA and is funded by two ministries: the Ministry of Commerce and Industry and the Ministry of Local Administration and Regional Development.

In Latvia, the focus of economic policies on cluster development began after 1999 under the Phare European program. This program was created to assist candidate countries in Central and Eastern Europe on their way to development and cooperation.

At the level of state policy, it has been drawn up a national innovation program for 2003-2006, in which special attention is given to the development of business clusters. Responsible for supporting the cluster policy and its implementation are the Ministry of Economy in cooperation with the Investment and Development Agency of Latvia. In 2007, it was approved the Program for promoting innovation and commercial competitiveness for 2007-2013, in which it was mentioned that clusters development in Latvia lags behind and should be supported by active coordination of state and business policy. Financial incentives from the state began to be granted by the Government of Latvia only after 2009 that served as the impetus for the development of clusters.

Latvia's experience shows that it is difficult for small countries to compete on the international market and maintain the entire production cycle within the country. An

efficient solution would be the specialization, ie the organization of clusters across the Baltic region where Latvia could be competitive with their specific products and services.

The analysis of European cluster support programs allows us to delimit some features of European cluster policy as follows:

- 1) Orientation on high tech projects (biotechnologies, information technologies, etc.), traditional branches being rarely supported in cluster programs.
- 2) Selection of cluster projects on the competition base. Authorities only set criteria, without requiring projects that are more promising as priorities.
- 3) The principle of competition: not all projects receive support, but the best.
- 4) The main beneficiaries of the programs are small and medium-sized enterprises.
- 5) The long term for the preparation of the calls for proposals and the organization of the competitions in several stages.
- 6) Several national agencies are responsible for the implementation of cluster policy, which diversifies funding sources.

We also note a number of shortcomings of European cluster policy:

- Excessive bureaucratization of the cluster support contest;
- inflexibility in correcting details of the projects submitted to the competition;
- the lobby phenomenon that leads to the promotion of projects on non-transparent principles;
- too long period of time between the submission of the project application and the time when the financial support was actually granted;
- supporting more clusters than planned in the program, which decreases from the financial allocations to each winner;
- lack of criteria for monitoring the activity of clusters which received support.

However, European cluster support programs have significant economic outcomes by their contribution to the development of new technologies, to the creation of new jobs, to the increasing competitiveness of enterprises, etc.

2.3. Policies to support cluster activity in the US, Japan and the Russian Federation

In the **United States**, cluster concept was the basis for regional development policies and was considered one of the country's priority development directions. The specificity of US clusters is to focus on commercialization of R&D activity outcomes. The US, through the federal contract system, offers R&D companies the possibility of free use of industrial equipment and state-owned scientific laboratories; subsidies for purchasing raw materials; tax incentives; free land rent and other facilities.

Due to the state-level support of the research field, the conditions for research in the entrepreneurial sector have changed. In many industries, corporations have created and developed research departments for the execution of state orders.

A relevant example of the American cluster is Silicon Valley, which gathers hundreds of corporations, research centers and start-ups. The core of this cluster is the close cooperation between research centers and venture capital funds. This cluster includes Intel, Yahoo, Google, Apple Computer, eBay and many more. Clusters in the US are developing due to the involvement of public authorities at all levels.

A special experience in cluster creation is found in Japan. The specificity of this country, in terms of cluster development, lies in the predominant importance of a large company around which the cluster is created. All cluster participants are subject to strict hierarchy. The process of initiating and developing clusters have been taking place due to public policy support for research. All laws on research, technology and innovation were adopted as strategic long-term development programs. The focus in the science and

innovation development policy was on the need to strengthen the regional position. The financial plan for R&D funding in Japan was geared towards increasing the competitiveness of industrial technologies developed as a result of collaboration between corporations, public authorities and the academic sector. The Cluster Support Initiative was adopted, which has contributed to the formation of the administrative groups of joint research coordination. The development of research cooperation centers was encouraged by state universities that, in collaboration with industrial enterprises, carried out research and development activities.

Japan has been borrowing new technologies and elaborations from other states and developing them in its research centers. Therefore, we can say that the creation of the first clusters in Japan has been based on the experience of other states, especially the US. The main distinction between Japanese clusters and those existing in other states is their orientation to modern technical science areas, such as integrated schemes, robot technologies, nanotechnologies, etc. A lot of attention is being paid to the mixed fields: biotechnology, eco and biopharmaceuticals. It should be noted that in Europe, the main areas of cluster concentration are the traditional ones.

In the Russian Federation, cluster projects are supported by the federal "Economic Development and Innovation Economics" Program 2020. This program provides allocations of around 5 billion rubles per year for the formation of innovative clusters. The Ministry of Finance has the central role in the implementation of cluster policies in the Russian Federation. This mechanism is typical for economies in transition, while in the developed countries the main role belongs to the branch ministries. Against this background, the innovative development in the Russian Federation faces the opposition of officials and experts from the Ministry of Finance, which considers as a priority the efficiency of budgetary expenditures, but not the development of clusters. Another barrier to the innovation policy in the Russian Federation, related to insufficient public funds. International donors such as USAID, UNIDO, and others compensate this lack.

In 2012, in the Russian Federation, have started the program of support for territorial innovation clusters. The list of these clusters was completed as a result of the competition selection. In recent years, this program has contributed to the development of a cluster network in the Russian Federation and brought important economic benefits.

An important factor in this achievement was the subsidies from the federal budget. In the period 2013-2015, the total volume of subsidies exceeded 5 billion rubles. The development of innovative territorial clusters and their performance have contributed to increasing investment attractiveness. For each 1 ruble of subsidies, 3.5 rubles from extra budgetary sources were attracted (98 billion rubles from the public budget, 360 billion rubles extra budgetary), (Abakshin et al, 2017).

At the state policy level, the Russian Federation supports cluster development through grant programs, special tax regimes, credit facilities and international collaboration.

3. Models of cluster funding

An important component of cluster development policy is the financial policy of support cluster initiatives. Funding clusters is a topic discussed in numerous specialized studies at European level (Lämmer-Gamp, Meier zu Köcker and Christensen, 2011; OECD 2007). Some were based on analyzing the possibility of developing clusters in Central and Eastern Europe (Ketels and Sölvell, 2006; Pavelková and Jirčíková, 2008).

The clusters' funding is possible in two ways: from public or private sources, with the possibility of combining them. Some empirical research has shown that the public sector is the most important source of funding for clusters (Abakshin, 2017), while others

(Ketels and Sölvell, 2006) highlighted the importance of external donors (international organizations), especially in developing countries. For countries that have recently become EU members, the largest share of clusters budget comes from the private sector.

Previous studies allow us to separate two financing models of cluster activity and a mixed model that combines both (Figure no. 1):

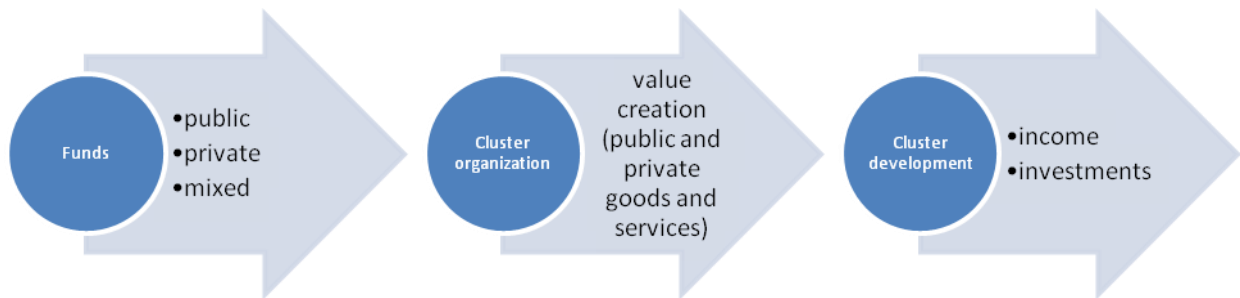


Figure no. 1. Models of cluster activity

Source: developed by author.

Model 1: Public funding

This funding model provides the organization of cluster activity on the basis of public budget allocations such as EU budget, national public budgets, government support programs at regional or local level.

Model 2: Private funding

This model provides the full funding of the cluster based on private funds. These funds may be of different types, such as: cluster membership fees, own sources of equity, unpaid profit, depreciation fund, etc., loans, leasing, venture funds, etc.

Model 3: Mixed type financing

The mixed model is based on a combination of public and private funding sources. The share of each source may vary but, as usual, the largest share of the mixed financing model belongs to public sources.

3.1. Public funding mechanisms

Studies show that the most part of cluster activity funding in developed countries comes from public budgets because business development and innovation promotion is an economic priority for a modern state.

The main mechanism of public funding of cluster projects, practiced since the 1990s. XX is based on competition. The authorities announce a competition to provide financial support for innovative development programs through clusters. The programs that participate in the competition must meet certain criteria, which makes this funding mechanism an objective one. This instrument of cluster policy gives the opportunity to choose the most attractive cluster project from a point of view to influence the economy, competitiveness, investment attractiveness, etc.

At the European level, there are Community funding programs meant to support the innovation development, job creation, problems and challenges solving, as well as to help increase the EU's competitiveness in the global market. About 80 billion euros are allocated at the European level to finance cluster projects. This money is provided through European cluster support programs, including: AKA Orizont 2020; Innosup Cluster;

Cosmos. Competitiveness of enterprises and SMEs; Interreg - European Territorial Cooperation (ETC); European Regional and Social Development Fund.

3.2. Private funding mechanisms

The creation and development of a cluster requires a large volume of funding, since this is one of the most costly types of economic projects. As public funding is insufficient, there is a need to attract private funds to initiate a cluster project.

The *main forms of private cluster financing* are private investments; companies own funds; credit products of commercial banks.

The specificity of cluster activity is the lack of profits in the early stage of the project, which reduces the chance to take credits from institutional investors. Under these circumstances, the following mechanisms for attracting borrowed capital are available: funding from suppliers (commodity credits); debt financing (factoring); bank credit under the personal guarantee of the third party, in particular - the parent company; venture capital funding.

The most important task in the cluster development process is to determine the optimal structure of funding sources. The volume of funding, the degree of risk and the cost of borrowed capital are the most important features of funding sources. Below we will present an analysis of these features (Table no. 1):

Table no. 1. Criteria for choosing the optimal cluster financing structure

<i>Source</i> <i>Criteria</i>	<i>Accessibility</i>	<i>Cost</i>	<i>Volume</i>	<i>Risk</i>
Equity	Maximal	Low	Minimum	Minimum
Issues of securities	Medium (mainly for large companies)	Significant	Medium	High
Leasing	High	High	Medium	Low
Credits	High	High	Large (it is difficult to obtain long-term loans)	High
Venture funds	Low	High	Low	Acceptable
Budget allocation	Extremely low	High	Low	Low

Source: developed by author based on Tingaev, 2014.

3. Conclusions

Focusing on competitive advantages in clusters can be supported at the state level by promoting support clusters policies. An analysis of the international situation has shown that the importance of promoting clusters has been recognized in both developed and less developed countries. Innovation-based growth promotion strategies and cluster financing government programs exist in most countries in the world.

Within the clusters policy, the state has the role of providing information and analytical support in the cluster policy implementation; to develop strategies for cluster development; to use existing instruments and economic policy measures to implement regional grouping initiatives; it integrates the principles of cluster policy into the activities of ministries and individual agencies responsible for economic and social development.

Besides providing the directions of economic development based on regional competitive advantage, it is necessary to find financial sources to support cluster initiatives. In this sense, it is important to estimate the risks to finding the most optimal funding scheme. From the analysis of existing financing models worldwide, we conclude

that the mixed financing model is an optimal one because it offers the possibility of combining public sources with private ones. This mechanism excludes pressure on the public budget and offers the advantage of attracting private sources through various financial instruments.

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