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Methodological aspects of cluster policy formation in Azerbaijan

Aygun Aliyeva

ANAS Institute of Control Systems

aygunaliyeva@isi.az

Abstract. Foreign experience demonstrates that countries' strategies in cluster policy differ depending on national traditions and culture of their strategy engineering process, as well as on the cluster concept. Analysis of information sources shows that technical and methodological framework for cluster policy formulation have not been clearly and unambiguously studied in science. The most important methodological document on cluster policy is the European Cluster Memorandum signed by the Member States of the European Union in 2006 [3]. It defined the essence and importance of clusters in innovation development and identified the key provisions of cluster policy. One of the essential methodological issues is the role of government in the formation of clusters. The following factors can be associated with the state's growing influence on clustering processes: market weakness, increase in the volume and value of public goods; an objective priority of public interest in the context of globalization; the need to protect the national economy in the international economic relations; the need for institutional regulations in the national and global economy. Foreign experience demonstrates that the numerous cluster initiatives running in major developed countries over the last few years have been brought forward by local or regional governments. In relatively small developed countries and in a number of developing countries, the government plays an essential role in the cluster development initiative, especially when local and regional government agencies cannot partner with the private sector. A number of decisions on clusters have been adopted at national level in countries with centralized decision-making process.

Keywords. cluster policy, industrial parks, competitive economy, innovation activity

1. Introduction. The formation and development of a competitively oriented national economy plays the key role in the recognition of the efficiency of a country's economy. As specified in the political programs of many countries, the competitiveness of the national economy is a key development priority.

The Global Competitiveness Index (GCI) of the CIS countries for 2008-2009 has the following rankings: Russia — 4.31 (51st place), Kazakhstan — 4.11 (66th place), Azerbaijan — 4.1 (69th place), Ukraine Belarus — 3.95 (82nd place), Georgia — 3.86 (90th place), Moldova

— 3.75 (95th place) [1]. The low level of the global GCI indicators in post-Soviet states being makes the problem of forming a competitively oriented national economy highly relevant.

Today, along with adapting strategic analysis tools to the world practice, there is a great need to develop new approaches to the economic justification of development concepts and strategies. Globalization processes are an objective condition for changing the paradigm of competitive management, which consists in the intensification of international competition that characterizes the world economy, the rejection of the traditional industry policy and the transition to a new, cluster system.

2. Problem statement. *Technology clusters*, such as technology parks, technopoles, scientific and technological centers, are very popular, well known and studied in the modern economy. Their importance in catalyzing innovation activity is undisputable.

Production cluster is a network of enterprises and organizations (including specialized service providers, manufacturers and buyers) which are concentrated around a science and education center, interconnected through mutual cooperation geographically and have partnership relations with local institutions and governing agencies with the purpose of stepping up the competitiveness of regions and the national economy.

The features of a production cluster that distinguish it from a technology cluster are as follows: manufacturing of a “core” product (the product with the largest share in the cluster production volume that defines the cluster name); cooperation relations with competitors (implementation of joint projects around common interests, such as education, science, marketing); combination of businesses with the completed production cycle (from raw materials to finished products).

International practice proves the importance of clusters in the development of regional and national economies, which is confirmed by the following conditions.

1. Clusters have positive external impacts. External impacts are due to the effect of one company’s actions on other companies. The benefits of the cluster are distributed over all contact areas: new manufacturers from other industries accelerate the development of the entire group, stimulating the development of research and development; network cooperation leads to free information exchange through the channels of suppliers or consumers that are in contact with many competitors and through rapid spread of innovation; internal cluster relations create conditions for emerging competition methods that create conditions for innovation.

2. The cluster form of business organization causes a particular kind of innovation to emerge — a “general innovation product”. A cluster based on vertical integration forms a specific system of dissemination of new knowledge and technologies rather than a spontaneous concentration of various scientific and technological inventions. Besides, the most important prerequisite for the efficient transformation of inventions into innovations and competitive advantages of innovations is the creation of a robust communication network involving all cluster participants. Within the framework of international technological cooperation, it is particularly important to have ties stimulating the formation of international clusters. Clusters create conditions for the formation of regional innovation systems.

3. Being the “development points” of the domestic market in the economy of the entire country or a region, clusters perform the function of assimilation of the international market. The presence of clusters in many industries accelerates the process of emergence of competitive factors through joint investment (as part of network cooperation and public-private partnerships) directed to the development of technology, information, infrastructure, education.

4. Major manufacturers of the cluster create demand for specialized material and technical resources and services. Intra-cluster relations ensure the development of external sources

(“outsourcing”), which accelerates the development of small and medium-sized businesses in the region by small and medium-sized businesses producing products, jobs and services for key subjects of the cluster, thereby increasing their competitiveness [2].

5. Competition among cluster manufacturers leads to deeper specialization in the cluster, a search for new fields and cluster expansion, ultimately giving rise to new businesses that increase the profitability of regional production, solve employment issues and raise the integration potential.

6. Clusters are one of the institutional forms of ensuring frontier co-operation in trade, agriculture, tourism, transport and infrastructure; they facilitate economic development of frontier areas.

7. The development of clusters enhances connections between industries, stimulating economic growth. Entering foreign markets, competitors inside a cluster develop joint marketing programs and ensure an increase in export volumes. All of this contributes in general to socio-economic development and the competitiveness of regions and the national economy.

The development of clusters enhances connections between industries, contributing to economic growth. Entering foreign markets, competitors inside a cluster turn into partners and develop joint marketing programs, ensuring an increase in export volumes. All of this, in general, stimulates socio-economic development and the competitiveness of regions and the national economy.

Methodological aspects of cluster policy formation

Foreign experience demonstrates that countries’ strategies in cluster policy differ depending on national traditions and culture of their strategy engineering process, as well as on the cluster concept. Analysis of information sources shows that technical and methodological framework for cluster policy formulation have not been clearly and unambiguously studied in science.

The most important methodological document on cluster policy is the European Cluster Memorandum signed by the Member States of the European Union in 2006 [3]. It defined the essence and importance of clusters in innovation development and identified the key provisions of cluster policy.

One of the essential methodological issues is the role of government in the formation of clusters. The following factors can be associated with the state’s growing influence on clustering processes:

- market weakness, increase in the volume and value of public goods;
- an objective priority of public interest in the context of globalization;
- the need to protect the national economy in the international economic relations;
- the need for institutional regulations in the national and global economy.

Foreign experience demonstrates that the numerous cluster initiatives running in major developed countries over the last few years have been brought forward by local or regional governments. In relatively small developed countries and in a number of developing countries, the government plays an essential role in the cluster development initiative, especially when local and regional government agencies cannot partner with the private sector. A number of decisions on clusters have been adopted at national level in countries with centralized decision-making process.

A new era in the development of industry began under the leadership of President Ilham Aliyev in 2004. During this period, some of the revenues from the oil and gas sector have been directed to the development of various industries, state programs for the optimization of the industrial structure in the regions have been developed, substantial work has been done to

address the energy supply problem, the overall infrastructure has been improved, and numerous projects for the opening of new production facilities have been implemented. The favorable business environment created in the country and the important decisions in the field of business regulation played a significant role in the development of industries. Due to the state support measures in the field of business development carried out in recent years, the share of the private sector in the GDP in 2015 was 81.2 percent. The number of businesses was 677,000, including 100,000 legal entities [4].

Since 2012, innovations in the regions have been supported by the state as part of cluster policy in Azerbaijan. The cluster approach stimulates the growth of territorial and socio-economic development, competitiveness of industries and the region, labor productivity, budget revenues, etc.

As a follow-up to the work done, the year 2014 was declared the "Year of Industry" in the Republic of Azerbaijan by Decree No. 212 of the President of the Republic of Azerbaijan dated 10 January 2014, and the plan of industrial development measures was implemented. Also, the State Program for Industrial Development in the Republic of Azerbaijan for 2015-2020 was approved by Decree No. 964 of the President of the Republic of Azerbaijan dated 26 December 2014. The implementation of the planned state policy has created conditions for the formation of sustainable financial resources in the country and thereby for the development of all industries. The volume of industry has grown almost twice over the last ten years, which is mainly due to the non-oil sector.

Under the leadership of the President of the Republic of Azerbaijan Mr. Ilham Aliyev, complex measures are being implemented to diversify the non-oil sector, to create new production areas based on competitive and export-oriented innovations, to intensify economic activity and to support business activity. The infrastructure required for the efficient business activity is being created and preferential treatment is introduced in industrial parks, which play an important role in the development of industry; the interest of entrepreneurs in industrial zones is growing. As a result of the implementation of the investment promotion mechanism, investment promotion certificates were issued to 182 projects in a short time; as a result of their implementation, over 1.6 billion manat will be invested in the national economy and around 12,000 new jobs will be created. 62% of these projects are industry-related [5].

With the purpose of supporting the activity of small and medium-sized businesses in industry and increasing the employment of the population, the head of state signed the Order on establishing the Hajigabul Industrial Site.

SOCAR Polymer was founded on 16 July 2016 in order to enhance the country's chemical industry. The company's production facilities include two plants, one producing polypropylene (PP) and the other high-density polyethylene (HDPE). These plants are currently being constructed in the grounds of the Sumgayit Chemical Industry Park (SCIP). The PP and HDPE plants with the capacity of 18,000 and 120,000 t/yr, respectively, will be commissioned in 2018. The reason for founding SOCAR Polymer LLC is that our country currently exports low-density polyethylene and imports high-density polyethylene, and the main purpose of the SOCAR Polymer project is to eliminate imports in this field. Along with the domestic market, the products will be exported to the Turkish and European markets. The work on commissioning the production lines with annual capacity of 180,000 tons for polypropylene based on the Canadian technology and 120,000 tons for high-density polyethylene based on the Austrian technology has been in progress since the beginning of 2018. Propylene and ethylene produced by the Azerkimya Production Association are used as raw material. About 3,000 workers are involved in the construction of the facility. SOCAR Polymer LLC is negotiating on creating clusters around these facilities in the future.

Integration of national clusters into the international cluster network for Azerbaijan enhances the competitiveness of enterprises on international level by increasing the quality and rate of economic growth, raising the level of the national technological base, and the performance of advanced management methods.

The search for sources of financing of innovation activities being crucial for the national economy, the formation and development of clusters can be one of the most effective mechanisms for spurring foreign investment, including foreign economic integration processes.

The functioning and development of clusters in the region creates conditions for improving the competitiveness of the business environment through the opportunities of employing additional kinds of services by establishing mutually beneficial relations between enterprises and organizations, siting them close to each other, cutting transport costs, supplying new ideas, developing innovative infrastructure, collaborating with organizations with developed infrastructure and established domestic and foreign relations.

Based on the above, it should be noted that the cluster policy of innovation development is the main strategy of regional innovation development in the conditions of the modernization of the Azerbaijani economy. Cluster, in its turn, is a kind of regional innovation system that organizes the essential elements, which design, manufacture and implement innovations.

The global economic crisis has raised the issue of Azerbaijan's transition to the path of innovation development to a new level, which, in turn, requires a revision of key sources of strategic directions of competitively oriented economy. It is necessary to change the direction of economic development, accelerating economic development, ensuring economic security and reducing dependence on the world market.

Statistical data analysis shows the presence of a number of problems hindering the efficient implementation of the innovative potential of Azerbaijan. The results of innovative development are far from satisfactory. The share of Azerbaijan in the global market of high technology products is only 0.3%, much smaller than that of developed countries. The efficiency of the high technology sector in Azerbaijan is very low. Apart from that, the share of R&D expenditure in the GDP in Azerbaijan is 1.16%, which is due to the fact that, unlike the Western countries, the main source of funding for science in Azerbaijan is the state, not the private sector. These figures indicate the weak sensitivity of Azerbaijani enterprises to innovation [6].

Thus, we can conclude that the only condition for the integration of the Azerbaijani economy into the global economic community as an equal participant rather than a primary producer is to transition the structure of all sectors of the national economy to the innovative mode involving economical use of raw materials. The first steps have been taken in this direction; however, it is necessary to speed up these processes to maintain the existing scientific and educational potential and create a competitive and beneficial partnership in the field of science.

International practices show that countries with a high innovation potential have an independent position. Innovation is a driving force of all social development, the source that boosts economic growth. Building a national innovation system is one of the main objectives of the Azerbaijani economy.

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