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## The Primary Sector Cluster of Wałbrzych – Enterprise and Innovation for Wałbrzych Agglomeration

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### Abstract

*World practices justify companies' actions in clusters, due to their mutual network connections and direct cooperation with science, education and administration institutions.*

*Such enterprises become more competitive and are successful when cluster development influences not only companies' progress but also the whole regions in which they are located. They allow regional development potential to be used in a more efficient way and to attract external investors.*

*The article deals with the problem concerning the meaning of clusters, based on the example of the primary sector cluster of Wałbrzych, used for developing enterprises and innovations of Wałbrzych agglomeration. The presented theoretical issues concerning indicators of regional development and clusters, 'Europe 2020' strategy and town twinning, indicate the importance of effective cooperation among: business, science and public administration.*

**Key words:** agglomeration, cluster, enterprises, innovation, town twinning, 'Europe 2020' strategy.

**JEL Classification:** O3

### 1 Introduction

The changes in world economy, related to the processes of advancing globalization, resulted in transforming it into the knowledge-based economy, characterized mainly by the growing demand for innovative technological and organizational solutions, as well as an ongoing implementation of new research results.

The concept of clusters emerged as a result of these transformations in order to expand the regional economy potential, along with creating better cooperation conditions among the business, science and local authorities.

The article discusses the problems of clusters' significance in creating regional entrepreneurship and innovation of Wałbrzych Agglomeration. The presented theoretical issues, concerning indicators of regional development and clusters, the "Europe 2020" strategy and town twinning aim at emphasizing the importance of effective cooperation between business, science and public

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administration, which is ultimately supposed to be beneficial for all the participants covered by the industrial group - Wałbrzych Cluster of Raw Materials.

## 2 Cluster Definition

The cluster concept appeared for the first time in neoclassical economy. A. Marshall, in his study entitled “Principles of Economics” (1890), introduced the term of an “industrial district” and identified it with the regional cluster of enterprises representing the same sector (Marshall, 1920). His theses were based, among others, on observations of small craft companies operating in textile, metal and manufacturing sectors.

According to Marshall, these enterprises were benefiting from the fact of functioning in the geographical proximity and entering into cooperative relations, as well as confrontations with other enterprises in the sector (Gorynia, 2008).

Clusters became increasingly popular in the business community after the publication by an American economist M. E. Porter, also referred to as the creator of clusters, who published the study entitled “The Competitive Advantage of Nations” in 1990.

Based on the research conducted in ten highly industrialized world countries he presented the innovative theory of national and regional rivalry based on factors related to geographical location of sectors and companies.

M. E. Porter defined a cluster as a geographical agglomeration of mutually related companies, specialized suppliers, units rendering services, firms functioning in similar sectors and the related institutions (universities, standardizing units, sector associations, etc.) in particular areas, both competing and cooperating with each other (Porter, 2001).

Apart from the classic definition by M. E. Porter there are many other definitions of a cluster in the subject literature, which explain its importance as the:

- ✓ geographical agglomeration of similar, related or complementary enterprises, cooperating with each other, taking advantage of the same specialized infrastructure, job market and specialized services, facing similar opportunities and threats (Rosenfeld, 1997);
- ✓ agglomeration of economic entities operating in close proximity (Enright, 2001);
- ✓ groups of the related industry sectors characterized by two key determinants specifying that enterprises covered by a cluster have to be related and located in close proximity (Bobrecka-Jamro, 2008);
- ✓ grouping of enterprises and institutions for which membership constitutes an important element of competitiveness, whereas non-profit institutions frequently represent the critical component in cluster success accomplishment (Bergmann, 1999);
- ✓ sector and geographic agglomeration of enterprises which manufacture or sell similar or complementary products and come across similar challenges or opportunities (Brodzicki, 2002);

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- ✓ geographical agglomeration of companies linked by vertical and horizontal relations, taking advantage of the same local infrastructure, presenting a common vision of development, cooperating and at the same time competing in some segments of the market (Cooke, 2002);
  - ✓ grouping of organizations in a given territory, along with the entire network of their internal and external relations and links, following a well-defined vision and common business goals, for the realization of which the process of cooperation and interaction construction and development is initiated and based on the establishment of development of mutual trust and confidence among people involved in the formation of these enterprises and organizations (Skawińska, 2009);
  - ✓ organizational system determined in terms of its structure and function, operating based on administrative and legal rules in a certain socio-economic environment, the efficiency of which is determined by the influence of external environment and the characteristics of its internal conditions and their mutual analogy and interdependence, which altogether are subject to impacts of common systemic processes and mainly: stability, cooperation, specialization and identical nature (Mrozowicz, 2010).

The analysis of the above-mentioned formulas, used in the subject literature, allows for concluding that the concept of “cluster” is both extensive and ambiguous. In spite of that, however, it is characterized by the following common features:

- ✓ geographical proximity of related enterprises functioning in similar sectors;
- ✓ horizontal or/and vertical interactions and relations between companies and public institutions, as well as research and development centres;
- ✓ competition and cooperation.

The numerous benefits resulting from clustering, for both individual entities and agglomerations in which they function, have transformed them into the real engines of regional economic growth. There are many advantages of an effective cluster functioning. The most important ones mainly refer to its participants.

The strengths derived from belonging to the group have impact on the development of an agglomeration entrepreneurship, innovation and are considered to represent the positive externalities.

The subject literature distinguishes the division of benefits resulting from a cluster existence into the following ones:

- ✓ hard, derived from effective business transactions, successful investments, expenditure reduction; they have positive influence on the growth of profits and employment in enterprises; they are characterized by higher efficiency of local supply chain, faster access to innovative technologies, new sales and purchase markets, lower transport and raw materials costs, higher productivity of specialized workforce, faster and easier access to specialized services, supply and sales stability, increased opportunities for new technologies and innovation implementation; they result in development, orderly arranged flow of information about the market and competition, as well as lower costs of an enterprise functioning (Kuciński, 2010);
- ✓ soft, which place major emphasis on learning, knowledge sharing, implementation of innovations, imitations and improvements, as well as influence the organizational culture;

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they are invisible, not focused directly on profit, however, exert crucial impact on the operations of enterprises and agglomerations in which they function; their advantage results from work resources mobility and also formal and informal flow of information; they include, among others: common goals in case of establishing associations, learning processes resulting in technology and innovation transfer, higher confidence among the entities representing a given structure, access to industry expertise, back up from personnel and supervision (cooperation with institutions, schools, training centres, etc.), development of brand identity in the region, higher clout and influence, the establishment of entrepreneurs' awareness (Klimczuk, 2008).

### **3 Clusters in the New Perspective of “Europe 2020” Strategy**

The emergence of clusters initiated a spontaneous market process which the local authorities are attempting to follow and support. Local production systems impose the new role to be performed by local authorities. The dialogue between enterprises, science representatives and public administration, the cooperation among which is of utmost importance in stimulating innovation, turns out to be most effective at the local level (Olesiuk, 2009). The European Union actions became an incentive for regional authorities to conduct an effective and awareness based policy focused on clusters' support and identification (Grabowska-Pieśła, 2007).

This process was reflected in the incentive oriented policy based on local production systems presented at OECD (Organization for Economic Cooperation and Development) forum.

The idea of clusters creation became an important component of the European Union economic policy, as part of “Europe 2020” Strategy priorities (research and innovation, “green” economy, cohesive society) focused on the establishment of effective conditions supporting the development of cluster initiatives, their larger number at the global level along with the innovation potential advancement and the improvement of international cooperation in the area of clustering. The above-presented guidelines also encourage regions to move towards open innovation, following the vision of partnerships between public and private sector entities, universities and also other human-oriented knowledge centres, which aim at the modernization of the “triple helix” concept. This theory deals with analysing relations between universities, government and economy, the mutual impacts, creating tripartite relationships and the feedback between each interacting element and the society (Leydesdorff, 1996).

The authors of “Europe 2020” Strategy indicate the mutual learning of the institutions responsible for the cluster policy, or the exchange of good practices which are supposed to facilitate the cooperation effect at different levels.

The innovation concept was also highlighted in the strategic assumptions presented by the European Commission as the one which should cover the ideas and actions in the area of engineering, biotechnology, eco-technology and nanotechnology, and also implement entrepreneurship models in creative companies – in order to break their patterns and functioning methods adopted in a particular sector and also innovative administration – creating unique

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solutions for running a company which aim at revolutionizing the entire sector and offering innovative products and services.

The factors responsible for cluster formation are characterized by the specific nature of a given agglomeration and its location. In many cases these determinants are of historical (traditional) nature and result from experience in performing particular activities in the area, or the access to different categories of resources (natural, capital, low or high-qualified labour, human capital, knowledge, especially the tacit one, etc.) and also the occurrence of other sector specific determinants, e.g. proximity and low costs of accessing a significant sales market.

#### **4 The Origins of Wałbrzych Cluster of Raw Materials**

Wałbrzych Agglomeration (WA) covers 1 887 km<sup>2</sup> (9,46%) of Lower Silesia region area with the population of over 427,3 thousand. It is made up of 23 public administration units<sup>1</sup>.

Wałbrzych Agglomeration aims at strengthening and dynamization of the factors influencing the development of innovative activities in its area, primarily considered as: the establishment of research and development centres, effective actions for the incubation of local innovative companies, propagation of innovative culture and upgrading adequate qualifications of employees. Moreover, efforts are taken to eliminate the existing barriers for entrepreneurship development in its municipalities, i.e.: the absence of an organization for entrepreneurs' integration, the lack of incentives for small and medium companies, poor transport accessibility, no adequate human capital, small socio-economic scale of particular municipalities and their insignificant involvement in the initiatives for the business environment activation. It searches for a permanent place in the process of positive changes occurring in Lower Silesia region. Many of its functional areas require developmental transformations, which should put into practice the opportunities resulting from the chances generated by the environment and the internal advantages among which there are undervalued natural and infrastructural resources.

Wałbrzych Agglomeration looks into the future through the need of establishing new developmental conditions. The main emphasis is placed on the need for economic changes, however, considering the fact that the richness of natural environment, historical buildings and constructions fit well within the modern economic, social and ecological challenges, appreciated on the markets of territorial products. The projects within the framework of assumed development have to be compatible with the possibilities of local and supra-local political determinants and also adjusted to market realities. The urge to make economic investments has to be supplemented by modernizing the existing residential resources, municipal infrastructure and the initiated ventures aimed at the establishment of modern social capital<sup>2</sup>.

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<sup>1</sup> Boguszów-Gorce, Czarny Bór, Dobromierz, Głuszyca, Jaworzyna Śląska, Jedlina Zdrój, Kamienna Góra City, Kamienna Góra Municipality, Lubawka, Marcinowice, Mieroszów, Nowa Ruda City, Nowa Ruda Municipality, Radków, Stare Bogaczowice, Strzegom, Szczawno Zdrój, Świebodzice, Miasto Świdnica City, Świdnica Municipality, Walim, Wałbrzych, Żarów.

<sup>2</sup> *The strategy of Wałbrzych Agglomeration development in the period 2013-2020.*

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WA policy addresses mainly the changes related to the European Union financial perspective in the period 2014-2020, the recently defined EU priorities included in the Strategy “Europe 2020” and the principles of town twinning which, in the EU policy, presents one of the basic standards underlying the Communities’ functioning mechanism and granting aid to the EU Members States. It consists in extensive cooperation and dialogue between all entities involved in regional policy at local, regional and state level. It combines the equality of competencies, the voting rights and also co-responsibility for the actions performed.

Partnership within the framework of the program for regional development stands for equal treatment of all participants despite the differences in major goals underlying their functioning. Moreover, it is fundamental in terms of cooperation and collaboration for the benefit of regional development.

The municipalities covered by WA, while signing the agreement with the Czech Kralowohradecki Kraj, following the EU strategy for town twinning, specified their priorities referring to economic and trade cooperation, the enhancement of tourism and also cultural and scientific exchange. The implementation of such projects aims at the revival of these regions.

The identified strategic challenges for Wałbrzych Agglomeration development do not refer only to relationships between the municipalities it covers, but also the cooperation of public institutions functioning in its area supported by science and business.

The concept of Wałbrzych Cluster of Raw Materials establishment resulted from the above-mentioned activities and is focused on reinforcing innovation processes, entrepreneurship and WA macro-region activation. Another advantage supporting such decision is associated with the rich raw materials base of Lower Silesia resulting from its location and the diversified geological construction of its particular parts.

Lower Silesia territory covers the Sudeten, characterized by the complex internal structure range of block mountains, and the lowlands much more monotonously constructed, located to the north from the Sudeten. Each geological unit is characterized by diverse accumulations of useful minerals. The Sudeten deposits are usually more easily accessible, but less abundant and characterized by a more complex form and internal structure than the deposits occurring in the substrate lowland areas. Due to the fact that in an economic assessment of a deposit value its volume, form and construction simplicity are crucial, therefore the deposits occurring in the northern part of the discussed area gain importance in terms of its deposit base. This regularity applies mainly to the deposits of the highest economic significance, i.e. metal ores (copper ores), energy resources (lignite, hard coal, natural gas), rock and chemical raw materials (granites, basalts, gabbros, syenites, malaphyries, porphyries, amphybolites, gneisses, migmatites, serpentinites, marbles, metamorphic shales, limestones, dolomites, sandstones) and other raw materials which, although often devoid of economic significance, deserve attention because of their rarity, frequently decisive about the specific nature of the region, and along with the proper dissemination of their occurrence they stand the chance of becoming the symbol of Lower Silesia.

The increasing prices of raw materials and resource priorities included in the EU programs and also the local ones, characterized by the occurrence and exploitation of such raw materials in

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Lower Silesia as copper, nickel, rock salt and lignite, have also become an incentive for Wałbrzych Cluster of Raw Materials.

Wałbrzych Cluster of Raw Materials has been created following the initiative of Agorereg Regional Development Agency from Nowa Ruda and also industrial enterprises, research units and local authorities of WA in order to exploit the already used and the new raw materials in an effective, innovative and following sustainable development principles way.

The leading assumption was to develop and strengthen regional entrepreneurship, economic entities operating in Wałbrzych Agglomeration in the broadly defined raw materials area. The action program was concentrated on transforming the “traditional” extractive industry into the knowledge-based one, i.e. on the implementation of new technologies and new products, in accordance with the principle of “zero emission, zero waste”, increasing added value of extractive industry final products and opening new jobs, especially at SME level, as well as the revitalization of historic sites associated with former industrial activity.

The specialization of the discussed industrial cluster is based on native enterprises and the abundance offered by Nowa Ruda, Głuszczyca, Mioszów and also Kamienna Góra areas, which are exceptionally rich in rock minerals: granites, basalts, porphyries and semi-precious stones.

Cluster activities result from the policy presented in the current Strategy of Lower Silesia region Development, i.e. generating added value to the products processed from natural raw materials and economic support for taking advantage from scientific achievements, promoting the usage of regional natural resources and strengthening competitiveness of local enterprises by attracting innovations and investments.

## **5 Final Remarks**

Wałbrzych Cluster of Raw Materials stands the chance of becoming the example for taking advantage of economic potential which creates innovative enterprises of private sector along with the support of public authorities, scientific and other institutions. Having observed its initial phase one can easily notice that the effectively functioning SME sector, embedded in local community and based on local natural and human resources, is crucial for its success. The cluster is designed to develop the potential ingrained in Wałbrzych Agglomeration resulting from its natural and human resources and also its geographical location. It takes up investments aimed at economic potential strengthening of the associated municipalities and breaking the existing barriers in entrepreneurship. It develops in cooperation with the institutions of business environment which, on the other hand, participate actively in the business incubation processes. It implements modern technologies and innovative capacity, recognized as the basic factors responsible for regional competitiveness and economic development, resulting from the functioning of innovative companies operating within the cluster. These businesses combine technologies from the area of science and employ highly qualified experts, which is translated into numerous aspects of the socio-economic sphere, e.g. stronger ties between science and economy, human resources qualifications, creating new knowledge, value and quality, opening new, innovative businesses and also disseminating innovation on other markets.

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Wałbrzych Cluster of Raw Materials opens opportunities for the development of entrepreneurship and innovation of Wałbrzych Agglomeration by influencing the market through specialized production factors among which knowledge and high quality human capital are the most important ones. The main goal to carry out is to stimulate the scientific infrastructure development and its more extensive implementation by economic entities. The enhancement of knowledge transfer, learning processes as well as innovation assimilation and generation, supported by creating innovation and entrepreneurship oriented culture in the region, combined with a high potential job market attracting well qualified personnel, have been adopted as the leading objectives of WA.

## References

- ASHEIM B. T., 2006, COENEN L., *The role of regional innovation systems in a globalising economy: comparing knowledge bases and institutional frameworks of Nordic clusters*. [W:] *The Changing Economic Geography of Globalization. Reinventing space*. Ed. Giovanna Vertova. London, New York: Routledge.
- BERGMAN E. M., FESER E. J., 1999, *Industrial and regional clusters: concepts and comparative applications*, Regional Research Institute, West Virginia University.
- BOBRECKA-JAMRO D., SZPUNAR-KROK E., FILIPIAK-DYLEWSKA B., 2008, *Clusters – the essence and importance in increasing enterprise competitiveness*. [In:] *Entrepreneurship, innovation, foresight. Economic, social and ecological aspects*. Red. Leszek Woźniak. T.1. Rzeszow University of Technology Publishing House.
- BRODZICKI T., SZULTKA T., Warszawa 2002, *The concept of clusters vs. competitiveness of enterprises*] published by IBnGR, Organization and management nr 4 (110).
- COOKE P., HUGGINGS R., 2002, *High technology Clustering in Cambridge*, in A. Aming, S. Goglio and F. Sforzi, (eds) *The Institution of Local Development*, London, UK.
- ENRIGHT M. J., Kilonia 2001, *What we know and what should we know, paper prepared for the Kiel Institute International Workshop on Innovation Clusters and Interregional Competition*.
- GORYNIA M., JANKOWSKA B., Warszawa 2008, *Clusters vs. international competition and enterprise internationalization*, Difin.
- GRABOWSKA-PIEŚLA A., RZEWUSKI T., Szczecin 2007, *An innovative role of a port as the main integrator of Zachodniopomorski TSL Cluster*, Scientific Bulletins of Szczecin University no. 453, Economic problems of services no. 8.
- KLIMCZUK M., Białystok 2008, *The conditions for agri-food processing cluster existence in Podlaskie region. Research results of local authorities, Eastern Poland – development management*, B. Plawgo (red.), Stanisław Staszic College of Public Administration in Białystok. KUCIŃSKI K. (red.), Warszawa 2010, *Entrepreneurship vs. regional development in Poland*.



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- LEYDESDORFF L., ETZKOWITZ H., 1996, *Emergence of a triple helix of university-industry-government relations*, „ Science and Public Policy”.
- MARSHALL A., London 1920, *Principles of Economics*, Macmillan and Co. 8th ed.
- MROZOWICZ K., Kraków 2010, *Entrepreneurship clusters from the perspective of an organization theory*, Quarterly Science and Economy.
- OLEKSIUK A., Bydgoszcz-Warszawa 2009, *Regional competitiveness vs. technological parks and industrial clusters*, Oficyna Wydawnicza Branta.
- PORTER M.E., Warszawa 2001, *Porter about competition*, PWE.
- ROSENFELD S. A., 1997, *Bringing Business Clusters into the Mainstream of Economic Development*, European Planning Studies, Vol. 5, Nr 1.
- SKAWIŃSKA E., ZALEWSKI R. I., Warszawa 2009, *Business clusters in the development of regional competition and innovation. World – Europe – Poland*, PWE.
- The strategy of Wałbrzych Agglomeration development in the period 2013-2020.