

CLUSTERING PROCESSES – EMERGING OPPORTUNITIES FOR BACKWARD REGIONS IN POLAND

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Abstract

Regional development is driven by many factors. The role of cluster initiatives in economic and social development is becoming increasingly important. High levels of unemployment and migrations of qualified workforce are severe problems that less developed regions are facing. Therefore, various cluster initiatives are often perceived as a panacea. Clusters stimulate innovations and contribute to the increase of competitiveness of local economies. Clusters and cluster-based regional development policies is a conception that is growing in prominence in recent years. Anticipated support for the clusters and clustering processes by the European Union funds in a time perspective of 2007-2013 requires multi-pronged research on the development of clusters. Although in Poland clustering processes are something relatively new, one could already observe some noteworthy successes in this field. More than 50 aggregations have emerged since 2005, some of them are now considered as clusters.

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1. The concept of clusters

The clusters and cluster-based policy (also termed cluster-oriented policy) is a concept that gained significant prominence and attracted attention of many researchers and policy makers in recent years (Brodzicki and Szultka 2002: 45). Currently, the clusters are regarded as the most mature forms of organization of

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production capable to maintain processes of economic development. At the same time, the concept of clusters is anew way of thinking of competitive advantage of businesses, competitive economies, that in practice, however, require significant involvement on the part of governments, self-government authorities, entrepreneurs and various interest groups (Tamowicz 2002: 32).

Many surveys carried out in recent years identified the role of clusters in regional economies and described factors that simulate and hamper development of clustering processes and emergence of clusters. In the United States alone researchers identified almost 380 clusters functioning in all sectors of the US economy. In Europe, particularly intensive are surveys made in the UK, Germany and France. On the basis of these observations and analyses many European regions and cities have developed and successfully implemented their own cluster-oriented policies. The importance of clusters is also recognized by the European Commission and Organization for Economic Co-operation and Development (Szultka, Brodzicki and Wojnicka 2004: 5).

American economist Michael E. Porter (Szultka et al. 2004: 7) defined clusters as a 'geographical concentration of interrelated companies, specialized suppliers, service providers, businesses operating in similar sectors as well as related institutions (e.g. universities, normalization organizations and institutes as well as branch associations). In certain fields these organizations collaborate and compete as well. Clusters achieving critical mass (essential number of companies and other institutions that form an agglomeration) and gaining tremendous competitive advantage in certain areas, are a striking feature of almost all national, regional, state and even big city economies, mainly in countries with highly developed economies.' (Porter 2001).

Operation in clusters bring significant benefits to all involved companies, farms, service providers, scientific institutes and other organizations, enables them to expand, gain new markets (especially international markets), develop innovations in production, services and management (Szymoniuk 2003). On the basis of a survey of 160 clusters identified in different parts of the world Enright (Enright 2001) pointed out that approx. 70% clusters showed very strong competitive position and 60% demonstrated high competitiveness (Brodzicki and Szultka 2002: 48).

Today, cluster structures are regarded as increasingly important stimulators of regional economical growth; they contribute to the development of export, attract foreign capital investments and increase competitive advantage of regions. Co-operation links between cluster participants, thanks to the synergy effect, boost their competitive positions and improve business operations. Moreover, clusters contribute to many positive social effects, e.g. reduction of unemployment and stimulation of local democratic processes.

According to the classification adopted by the European Union, the regions of eastern Poland, however having huge development potential, are

regarded as the most underdeveloped European regions. The European Union through a variety of programs supports and promotes clustering processes and development of regional clusters. This policy not only resulted in closer co-operation between companies already co-operating (cluster awareness process) but also stimulated new co-operation links and thus contributed to the emergence of new regional and supra-regional cluster structures. A survey carried out in 2007 identified a number of various clusters and cluster initiatives functioning in the Lublin Region, e.g.: Ecological Food Valley (Dolina Ekologicznej Żywności), Lublin Regional Cultural Heritage Cluster (Klaster Kultury Lubelszczyzny), Lublin Wood Association (Stowarzyszenie Lubelskie Drewno), Lublin Region Restaurateurs' Cluster (Klaster Restauratorów Lubelszczyzny), Association of Foundry Components Manufacturers KOM-CAST (Stowarzyszenie Producentów Komponentów Odlewniczych KOM-CAST), Association of Aviation Companies AVIATION VALLEY (Stowarzyszenie Grupy Przedsiębiorców Przemysłu Lotniczego DOLINA LOTNICZA, Innovative IT Supra-regional Cluster (Podkarpacko-Lubelski Innowacyjny Klaster Informatyczny – Ponadregionalny Klaster Informatyczny), Polish Medicine Cluster (Klaster Medycyna Polska), Knowledge Cluster – Lublin, the City of Knowledge (Klaster Wiedzy – Lublin Miasto Wiedzy), Loessial Ravines Land (Kraina Lessowych Wąwozów).

2. Clusters in the Lublin Region

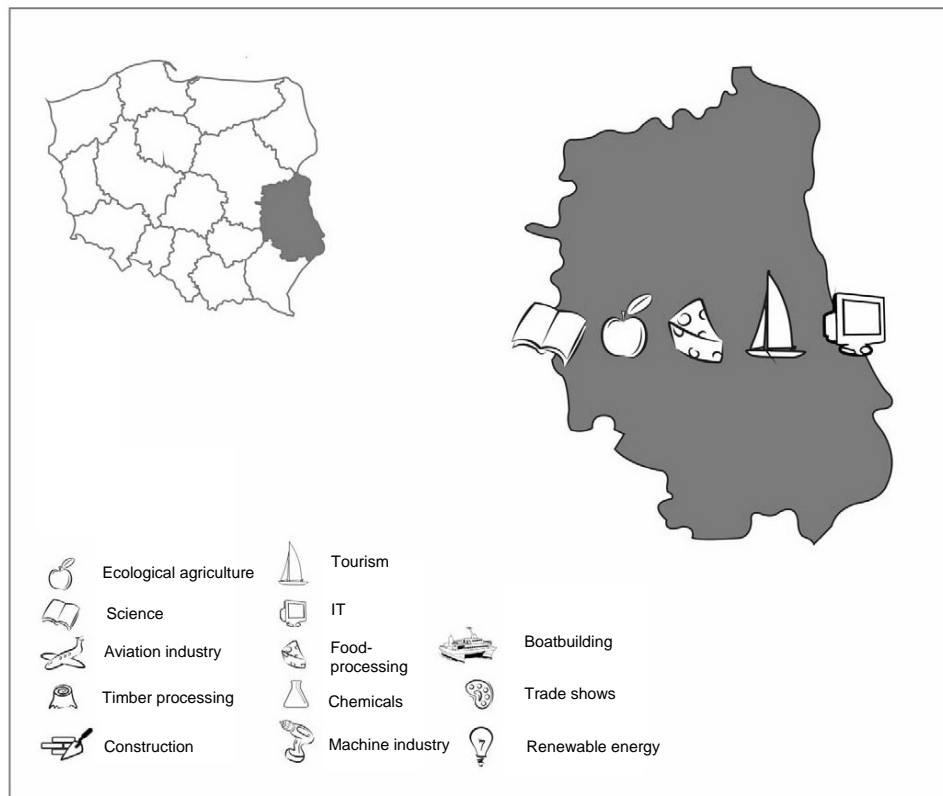
In terms of area the Lublin Region is one of the largest Polish regions. Its area exceeds 25,000 sq. kilometers, which stands for 8% of total Poland's area. The region inhabits almost 2.2 mln people (population density represents 71.3% of the country's average). Urbanization index of the region equals 46.7% of the country's average. Gross domestic product per capita generated in this region in 2005 amounted to 17,591 Pln (i.e. 68.3% of Poland's GDP per capita). In the Lublin Region dominates agriculture and food processing industries. The Lublin Region is one of the most economically underdeveloped Polish regions with weak industry, relatively low investment outlays, outdated infrastructure and small number of cities.

Current trend of cluster-oriented policies may be a real chance for backward regions to make up for the lost time and reduce regional disparities. Regional integration processes are at the centre of attention of regional economists for a couple of years now. Developed reports and surveys form a solid base for the development of regional development policies by the local self-government bodies ('Analiza klastrów gospodarczych w województwie lubelskim' 2006). For example, a number of benefits resulting from clustering processes for the local and regional economy were listed in 'Regional Strategy

of Innovation – Innovative Region, Transforming Ideas into Action, developed in 2004. Clusters are perceived by many representatives of regional and local self-government bodies as well as many prominent academics as an important instrument of regional development policies (Plawgo 2007).

The region has developed however some industrial sectors, which include furriery and clothing industry, machine and automobile industry, chemicals and furniture industry. Main industrial heartlands are: Lublin, Świdnik, Puławy, Chełm, Krasnystaw, Zamość, Biłgoraj, Biała Podlaska and Kraśnik ('Program wspierania przedsiębiorczości województwa Lubelskiego' 2007).

Fig. 1. Sectoral specialization of cluster structures emerging in the Lublin Region



A number of companies, leaders in their sectors, are based in the region. However a broad range of business activities performed and the lack of closer co-operation links between regional companies pose a significant hurdle for clustering processes that could lead to the formation of classical industrial

clusters. Therefore, innovative approach to manufacturing processes and development of hi-tech sectors may vastly increase competitiveness of industry.

Aviation industry is the most conspicuous hi-tech sector developed in the Lublin region. Aviation companies based in south-eastern Poland, clustered in the industrial cluster named 'Aviation Valley', represent 90% of all aviation companies run in Poland. The aviation sector tends to grow rapidly (www.dolinalotnicza.pl).

Association 'Aviation Valley' is one of the most mature innovative clusters in Poland. Development of this cluster was given the highest priority in Regional Strategy of Innovation for the Podkarpackie Region in 2005-2013. Aviation Valley cluster encompasses also two adjacent regions – Lublin and Małopolska. Moreover, cluster development strategy includes cross-border co-operation with companies and universities in the Ukraine and Slovakia ('Program Operacyjny Rozwoju Województw Polski Wschodniej' 2006).

Worth mentioning are activities and initiatives promoting regional craftsmanship clusters undertaken by the Lublin Chamber of Crafts within the framework of Action 2.6 of the Integrated Regional Development Operational Program 'Innovative craftsmanship co-operation network in the Lublin Region. The Chamber identified and prepared for registration 6 initiatives, including 'Lublin Wood Cluster' ('Lubelskie Drewno'), 'Lublin Onion Cake' ('Lubelski Cebularz') grouping bakers, clusters encompassing hairdressers and beauty parlors, automobile cluster grouping companies manufacturing automobile spare parts and emergency road service, as well as education cluster embracing SMEs involved in training on ISO norms and standards.

The only registered cluster is 'Lublin Wood Cluster'. This innovative cluster, which from the beginning of 2007 operates in a form of association, is now grouping 23 members – businesses and other organizations involved in timber processing and construction industries, as well as a number of institutions engaged in promotion of regional innovativeness. The cluster was meant to promote inexpensive housing, technological spillovers, encourage closer co-operation between companies, including establishment of co-operation links with foreign partners, and thus counteract social and economical marginalization of the region.

'Cluster of Restaurateurs – promotional pillar of the Lublin Region' ('Klaster Restauratorów – filarem promocji Lubelszczyzny') was formed in June 2006. The cluster initiative was co-funded by the European Union and the Polish government. It was organized to function as a joint representative and lobbying body, promoting local and regional traditional cuisine, culture as well as other regional attractions. Within the framework of the project a special coordination unit was establish, which was to collect and distribute relevant business information and other useful data among cluster members, organize business

meetings, trade shows and provide training. The project expanded over time to encompass also local hotel industry.

As mentioned earlier, agriculture is one of the most important sectors of the regional economy. In terms of arable area the region is ranked the third in the country and its share in the total agricultural production is 8.3% (which is 3.5 times higher than a share in the overall industrial production) (Concise Statistical Yearbook 2006). Most arable land in the region is of good and very good quality¹. Main agricultural production includes crops, potatoes, sugar beets, vegetables, tobacco and hemp. Moreover, the region is the main producer of fruits, particularly raspberries, and milk, honey and herbs. Pig, cow and horse breeding are also well developed.

For many years, due to spatial proximity of numerous farms producing quality produce, the food processing industry is one of the best developed sectors of the regional economy. The sector's sales volume accounts for almost 30% of the total sale generated by this region ('Program Wspierania Rozwoju Przedsiębiorczości Województwa Lubelskiego' 2007).

In the context of potential development of regional agricultural clusters we cannot however overlook activities and initiatives undertaken by various producer groups. Such groups can potentially play an important role in the clustering processes and development of regional agricultural clusters. In general, the producer groups have similar goal to those of classically understood clusters. Both clusters and producer groups are aimed at improvement of competitive position of their members, reduction of costs and thus increase of revenues achieved by farmers, quality improvement, joint planning and logistics, and flexibility in responding to the market needs and trends.

Up to 2006 the producer groups register kept by the Marshal of the Lublin Voivodship (the Lublin Region self-government authority) listed 11 agricultural producer groups, 14 provisionally accepted groups of fruit and vegetable growers and 2 accepted organizations of fruit and vegetable growers. The most groups is engaged in fruit, vegetable, tobacco and hop growing.

The first attempts to establish clusters based on existing regional producer groups date back to 2005, when within the framework of the EU-funded program promoting various regional clusters three cluster initiatives were initiated: 'Chmielaki Nadwiślańskie', 'Epoka Gryczoka!' and 'Klaster Kalafiorowo-Brokułowy'. All of these initiatives were designed to encourage closer co-operation between producers, food-processing companies, suppliers and buyers. Despite established formal structure and the group leaders the groups failed to develop into clusters.

¹ Good and very good soils, i.e. soils class I through III b, represent 40%, medium class soils - 36%, and lower class soils - 24% of total arable area in the Lublin Region.

Paradoxically, weak industrialization is one of the most significant advantages of the region. The regional agriculture characterized by relatively low use of agricultural science and chemicals, favorable climate and soil conditions, terrain configuration, low emission level and environmental burden may turn these features into successful development strategy. The region has a great potential to become a prominent vendor of ecological produce and foodstuffs. Recently observed growing demand for such products creates tremendous opportunities for the regional agriculture and related sectors. Between 2004 and 2006 the number of ecological farms increased from 393 up to as many as 1,072 (which gave the Lublin Region the third position in the country). In 2006 in Poland operated 156 ecological food-processing companies, including as many as 25 located in the Lublin Region ('Stan i tendencje rozwoju rolnictwa ekologicznego w Polsce'). Ecological farming uses less pesticides, herbicides and chemical fertilizers (if any) and therefore generates less pollution to soil and underground waters. Ecologically oriented farming is conducive to the self-regeneration of the environment, helps protect biodiversity and retain desired biological balance (Szymoniuk 2007).

The project named 'Strategy for Ecological Food Valley' that was implemented in the Lublin Region has laid the foundations of the first in Poland special cluster initiative focused on the production of ecological food and produce. Upon completion of this project, in 2007 there was established Association 'EkoLubelszczyzna'. The main purpose of this organization includes implementation of developed within the framework of the project strategy for regional ecological agricultural cluster. Association 'EkoLubelszczyzna' groups agricultural advisory and training centers, research and certification bodies, ecological organizations, organizations promoting healthy lifestyle and nutrition, regional ecological agro-tourism farms as well as farms and companies involved in promotion, marketing and production of ecological foodstuffs (Szymoniuk 2007). The project 'Strategy for Ecological Food Valley' was given high priority in the regional strategy for development of the Lublin Region.

It is a well known fact that education level significantly determines development potential of regions. In terms of intellectual potential, the Lublin Region is ranked very high among the other 16 regions of the country (depending on a survey on 4th or 5th position). The region has a well developed network of universities as well as public and private schools of all educational levels and profiles. In the city of Lublin alone there are 5 public universities and several privately owned colleges. In recent years 9 new colleges have been established in the region. Moreover, the capital of the region is home to the European College of Polish and Ukrainian Universities. The region has several widely recognized scientific and research-and-development institutes, e.g. two Puławy-based scientific units – the Institute of Veterinary Medicine and the

Institute of Soil Science and Plant Cultivation (IUNG), Institute of Rural Medicine in Lublin, and renowned Institute of Agrophysics of the Polish Academy of Sciences, to mention just a few. The total number of students enrolled at all regional universities and colleges nears 92,000, and the city of Lublin boasts the highest per capita rate of academics and students among all Polish regions.²

Developed links between science and scientific institutions and businesses, mutual collaboration of these sectors, and dissemination of knowledge and state-of-the-art technology are crucial for regional economic development and social growth. Such linkage reinforces regional development potential and competitive position. The regional authorities have already announced Regional Scientific and Technological Park to be opened in 2009. The project is expected to increase the knowledge spillovers and encourage transfers of new technologies to businesses ('Program Operacyjny Rozwoju Województw Polski Wschodniej' 2006).

In recent years the Lublin city authorities won considerable funds to support developed innovative project named 'Lublin – the City of Knowledge', implemented within the framework of Integrated Regional Development Operational Program for 2004-2006, Action 2.6 – Regional Strategy of Innovation and Knowledge Transfer. The project, aimed at strengthening co-operation between existing scientific institutions, is coordinated by the city authorities. The other partners to the project are public universities and scientific institutions based in Lublin, including the University of Maria Curie-Skłodowska, the Medical University, the University of Life Sciences, the Lublin University of Technology, the Lublin Catholic University of John Paul II, as well as the Institute of Agrophysics of the Polish Academy of Sciences. The project was designed to encourage closer co-operation links between regional scientific and research-and-development institutes, especially those sharing overlapping scientific, education and research interests, stimulate clustering processes and thus lay the foundations of the regional cluster of knowledge. The project is expected to prompt intensified transfer of knowledge and innovative technologies to businesses, lead to better utilization of existing regional human capital, identified within the framework of the other program 'Regional Intellectual Capital'³, and thus increase competitive advantage of the region.

Moreover, the region offers the flawlessly clear environment, beautiful landscapes, health resorts, and numerous sometimes undiscovered tourist attractions, places of interest, nature monuments and rich multi-cultural heritage, which create vast opportunities for development of tourism, especially in rural traditionally poor areas. There are already some initiatives that capitalize on

² Based on: www.lubelskie.pl

³ Based on: www.lublin.eu

these assets; one of them was termed 'Loessial Ravines Land' ('Kraina Lessowych Wąwozów').

The cluster was initiated by the representatives of three local communities (gminas) – Nałęczów, Wąwolnica and Wojciechów, as well as several local tourist organizations. Initially the cluster operated under the name 'Local Tourism Organization – Nałęczów Land' and it rapidly expanded over time. Today 'Loessial Ravines Land' has as many as 68 members, including several communities: Nałęczów, Wojciechów, Wąwolnica, Opole Lubelskie, Kazimierz Dolny, Karczmiska, Wilków, Puławy, Janowiec, Poniatowa, and the city of Puławy.⁴

The cluster offers a wide range of tourist services, provides information, booking and necessary assistance for tourists visiting the region, promotes regional tourist attractions, a unique beauty of this loessial land with its numerous picturesque ravines, and undertakes many valuable cultural and environment protection initiatives.

Long-lasting difficulties associated with the successful promotion of regional tourist industry and culture led to the initiation of another cluster initiative named 'the Lublin Region Culture Cluster' (Klaster Kultury Lubelszczyzny). The main goals of the project, which is part-funded by the EU's European Social Fund within the framework of the Integrated Regional Development Operational Program, include attempts to establish strong co-operation links between a wide array of local and regional institutions, including self-government units, scientific and RAD institutes, non-government organizations (NGO) and businesses involved in widely understood cultural activities. Under this project, among other activities, it was developed a dedicated web site offering comprehensive information on cultural activities and events scheduled in the region. The project gained wide recognition, including that of the European Commission as a unique undertaking in terms of building cluster structures in such a difficult field as culture.

The following clusters and germs of potential regional clusters have been identified so far:

- Ecological Food Valley (Dolina Ekologicznej Żywności),
- Lublin Regional Cultural Heritage Cluster (Klaster Kultury Lubelszczyzny),
- Lublin Wood Association (Stowarzyszenie Lubelskie Drewno),
- Lublin Region Restaurateurs' Cluster (Klaster Restauratorów Lubelszczyzny),
- Association of Foundry Components Manufacturers KOM-CAST (Stowarzyszenie Producentów Komponentów Odlewniczych KOM-CAST),

⁴ More on the subject: www.naleczow.org.pl

- Association of Aviation Companies AVIATION VALLEY (Stowarzyszenie Grupy Przedsiębiorców Przemysłu Lotniczego DOLINA LOTNICZA),
- Supraregional IT Cluster (Podkarpacko-Lubelski Innowacyjny Klaster Informatyczny – Ponadregionalny Klaster Informatyczny),
- Polish Medicine Cluster (Klaster Medycyna Polska),
- Knowledge cluster – Lublin, the City of Knowledge (Klaster wiedzy – Lublin Miasto Wiedzy),
- Loessial Ravines Land (Kraina Lessowych Wąwozów),
- Tourist and agritourist cluster,
- Machine cluster (Klaster maszynowy),
- Food cluster (Klaster spożywczy), and several producer groups based clusters (currently inoperative):
 - Epoka Gryczoka,
 - Święto kalafiora i brokuła,
 - Chmielaki nadwiślańskie.

Summary

The emergence of cluster structures in the Lublin Region is a quite new phenomenon. Therefore, it is extremely difficult to assess now its impact on the regional economy. However, keeping in mind past experience and observations of other regions it seems to be well grounded to assume that in the nearest future, at least some of identified clusters and cluster initiatives, will bear expected fruits – increase the competitiveness of regional economy and contribute to the leveling disparities between underdeveloped Lublin Region and other European regions.

Even though, the clusters identified in the Lublin Region operate in several different sectors, all of them are equally important to the regional economy and social development. Many authors observed that effective clusters lead to the improvement of local productivity (Mariussen 2001). Moreover, spatial proximity of companies stimulates and supports their innovativeness (Marshall 1925, OECD 2000), and developing clusters typically contribute to the formation of new business establishments (Sternberg 2001), which obviously translates into new jobs. Clusters stimulate positive externalities, including development of business-supporting specialized services, infrastructural investments and the growth the population revenues (Tamowicz 2002: 34). Crucial role in this process typically is played by the local and regional self-government bodies. Difficult to overestimate is the role of policies formed and applied on the state and the EU levels. On the long run properly designed and

prudently applied cluster promoting policies can create vast opportunities for underdeveloped regions.

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