

ARE CLUSTERS VIABLE SOLUTIONS FOR
LAGGING REGIONS? EMPIRICAL EVIDENCE
FROM CEE COUNTRIES

Abstract

This paper discusses to what extent clusters can flourish and generate significant outputs for the lagging regions, aiming to point out criteria and classifications resulted from the international literature typologies of a particular relevance for the study of clustering phenomenon in such regions. Then, it concentrates on empirical evidence from various Central and East European countries, so as to provide some reflections on the most appropriate support policies for cluster development based on successful experiences recorded by less developed regions in these countries.

Keywords: clusters, lagging regions, typologies, support policies.

JEL CODES: R12, R58

**REPREZINTĂ CLUSTERELE
SOLUȚII VIABILE PENTRU
REGIUNILE RĂMASE ÎN
URMĂ? ANALIZA
EMPIRICĂ A EXPERIENȚEI
ȚĂRILOR DIN EUROPA
CENTRALĂ ȘI DE EST**

Daniela-Luminița CONSTANTIN

Professor Ph.D., Administration and Public
Management Faculty, Bucharest Academy of Economic
Studies

E-mail: danielaconstantin_2005@yahoo.com

Rezumat

Această lucrare își propune să investigheze în ce măsură clusterelor se pot dezvolta și genera output-uri semnificative pentru regiunile rămase în urmă, pornind de la criteriile și clasificările rezultate în urma studierii tipologiilor prezente în literatura internațională cu privire la studiul clusterelor în asemenea regiuni. În continuare, lucrarea se concentrează pe analiza empirică a inițiativelor de succes din unele țări central și est-europene, astfel încât să furnizeze propuneri utile legate de cele mai potrivite politici de sprijin a dezvoltării clusterelor în regiunile rămase în urmă din aceste țări.

Cuvinte cheie: cluster, regiuni rămase în urmă, tipologii, politici.



1. INTRODUCTION

In the last decades clusters have become a very attractive concept for the economic practice: they are approached as a key source of competitive advantage, mainly in relation with their capacity to be critical drivers of innovation, which is heavily concentrated from geographical viewpoint. As argued by the European Cluster Memorandum (European Cluster Alliance, 2007), clusters stimulate the emergence of new ideas in networks of cooperating business firms and institutions, lowering the barriers for transforming new ideas into businesses. In line with this overall orientation, the strong cluster support offered by the EU has been conceived in tight relation to those cohesion policy programmes aiming at fostering regional innovation and knowledge-based networks. Indeed, the last two decades have shown an enormous concern with science and innovation-based growth.

Nevertheless this “obsession with high-tech industries” has begun to encounter sharp criticism by several authors (e.g. Tripl, 2010, p.193), the idea that medium and low-tech industries can be also innovative and can provide substantial impulse to regional growth getting more attention. Even if systematic studies devoted to clusters in traditional, mid- and low-tech sectors and appropriate policies are much less numerous, empirical evidence about successful experiences is emerging in various countries. This issue has a specific significance to the less developed regions, usually confronted with economic structures dominated by mid- and low-tech industries. In our view it can become an interesting niche for the cluster-devoted research in the forthcoming years, the factors and the policies conducive to effective clusters in these regions requiring a deeper exploration (Constantin et al., 2011a).

This perspective is particularly important for the less developed regions in the transition and developing countries in Central and Eastern Europe. These countries have suffered a stressful and often painful process of economic restructuring and the initially lagging regions, where forced industrialization and urbanization in the communist period resulted in a more rapid development, have been the first affected by the transition process. At present they display big gaps in economic and social terms in comparison with both national, EU and other developed countries average. It is obvious that – at least in short and mid-term – such regions cannot become winners in the international regional competition. But, at least, rational economic and social policy can help to transform them into relative losers (instead of absolute ones) and, further on, in relative winners (Nijkamp, 1997).

Various research studies addressing the specific problems and difficulties in the lagging regions of the transition countries from Central and Eastern Europe have identified possible reactions regarding appropriate economic and social policy measures. Some of them take into consideration the role of

cluster initiatives as a response to poor competitiveness, low level of innovation, high levels of unemployment and out-migration of the highly-skilled labour force.

Their arguments mainly refer to the contribution of clusters to stimulating innovation and increasing competitiveness of local economies and individual businesses (Bojar et al., 2008; Bojar, 2007; Molnar, 2001). Small and medium enterprises (SMEs) are especially taken into consideration by cluster formation initiatives, considering their potential to create a significant number of new jobs, to improve industrial relations and to provide a superior working environment for employees, to create a diversified and flexible industrial base by creating a pool of entrepreneurs willing and able to take risks, to stimulate competition for small and large firms alike, leading to an energetic enterprise culture, to stimulate innovation (Armstrong and Taylor, 2000). The capacity of clusters to attract foreign capital investment is also envisaged.

Though, the simple presence of clusters in a less developed region does not automatically mean more competitiveness and prosperity. A series of policy measures meant to improve the frame conditions for business firms and overall regional development should accompany clusters formation, as a coherent package including economic, legal, institutional, infrastructure, cultural and socio-political elements. The aim of such a package should be the definition of a "regional profile", stressing and taking advantage of the specific feature of each local area (Funck and Kowalski, 1997). Moreover, the SMEs of a cluster should be integrated in a coherent network which creates links, relations, exchanges between them and other actors within the region (banks, universities, research institutes, training centres, consulting firms, chambers of commerce, associations of producers, local public administration) (Cappellin, 1998; Sohn and Lee, 2009). The creation of all these conditions can also contribute to attracting foreign investors, with all advantages entailed by this process: foreign partners do not contribute only to the diffusion of new technologies but also bring about new ways of behaviour, new business routines, new mentalities, which are essential for the success of new market economies (Constantin, 2006). In addition, a learning process for the establishment of local clusters and networks is still required for new market economies and transition countries (Steiner, 2002).

Based on these overall considerations, this paper proposes a discussion on the cluster typologies provided by the international literature, aiming to point out those criteria and resulted classifications of a particular relevance for the study of clusters in lagging regions. Some reflections on the most appropriate support policies for cluster development in these regions are also provided, based on various successful experiences recorded by less developed regions in Central and East European countries.

2. CLUSTER TYPOLOGIES RELEVANT FOR LAGGING REGIONS

Researchers' efforts to categorise clusters have revealed a large variety according to many criteria that can be used, resulting in a wide cluster typology (Bojar, 2007). Among them, the most frequently employed refer to the type of product and/or services the firms provide, the sector of activity (Ketels, Lindqvist and Sölvell, 2006), the number (and type) of horizontally connected sectors, the importance attributed to technology (Porter, 1990), size, the number of newly generated jobs (or retained ones), the territorial spreading of the participants in the cluster (Van der Linde, 2003), the evolution from the perspective of the life cycle, the development stage, etc. For this paper we have selected those criteria that have proved to be the most relevant for conducting empirical research in the case of clusters in lagging regions.

In this register, McCann (2001) proposes a cluster typology which distinguishes between pure agglomeration, industrial district and social network, taking into consideration a series of characteristics such as firm size, relations between firms, membership, access to cluster, space outcomes, notion of space, analytical approaches, etc.

From another perspective, Porter (2003), quoted by Ketels (2003) and ECO (which has operationalised Porter's types of industries in its own methodology), points out various dimensions clusters may differ in: "the type of products and services they produce, the locational dynamics they are subject to, their stage of development, the business environment that surrounds them" (p. 4), etc. For example, if the locational dynamics of the cluster constituent industries is considered, one can distinguish between "local" industries, which serve only local markets and their spatial distribution mainly depends on population, "natural resource-dependent industries", which serve global markets and their spatial concentration depends on the location of natural resources and "traded" industries, which serve markets in many regions and countries and their presence in a given location is clearly determined by the attractiveness of that location (Ketels, 2003, p.5).

In addition, Sölvell et al. (2003) distinguish between static clusters, characterised by firms' isolation and lack of competition, lack of advanced suppliers, basic human capital, lack of trust and networks and few supporting institutions and dynamic clusters, where the main attributes are the manifestation of local rivalry and international competition, the existence of specialised, local suppliers, an advanced training and scientific infrastructure, highly developed social capital and advanced institutions promoting collaboration and cluster initiatives.

Porter (1990) also discusses other two types of clusters, based on the links between firms, as follows: vertical clusters, where firms are linked through buyer-seller relationships and horizontal clusters, where firms might share a common market for products, use a common technology, labour force skills and similar resources (see also Isbasoiu, 2006, p.4).

According to the stage of development, Enright (1998, 2000, 2001) highlights three main categories of clusters, namely potential clusters, where some good opportunities and some key elements are already in place, latent clusters, which comprise a large number of firms but of a low level of interaction because of the lack of trust, low cooperation and high transaction costs, and working clusters, represented by well-developed industrial districts. They have been added to more categories, referring to "policy-driven", characterized by government support but lack of critical mass and "wishful thinking" clusters, also policy-driven, but without critical mass or any political advantage (see also LEED-OECD, 2004 and Teräs, 2009).

Many of the criteria and characteristics discussed in the above typologies are clearly summarised in the classification proposed by Torre (2008), who combines the cluster groups based on the localisation of inter-firm relations with those resulted from the organisation of inter-firm relations. In Torre's classification, besides the clustering case revealed by Porter and characterised by important degrees of localisation and organisation inter-firm relationships, other clustering cases from these combined viewpoints are revealed. Thus, there are cases characterised by strong inter-firm relationships but weak local embeddedness, which correspond to the clusters analysed at national and regional level in a broad sense, as well as clusters with a strong spatial concentration but weak internal local bonds. The latter category is specific to many production systems not included in the initial Porter's definition but largely targeted at present by innovation policies aiming to create synergies at local level (e.g. competitiveness poles). This category also applies to many of those "clusters" identified in various emerging markets.

3. SUCCESSFUL EXPERIENCES IN LAGGING REGIONS OF EAST EUROPEAN COUNTRIES

As many comprehensive, comparative studies have demonstrated, cluster policies are still at an early stage in many countries (Europe INNOVA, 2008). Especially in Central and East European countries such policies started being applied after 1999, with significant variations in their outcomes. It seems that countries like Czech Republic, Hungary and Poland have encountered encouraging results and are of a particular interest to our research considering several success stories in lagging or declining regions.

Like in Romania's case, these countries have been/are confronted with problems specific to low tech clusters in such regions: stagnating demand, high competition, 'lock in' into old technology paths. Old clusters in these regions have been characterised by fragmentation in terms of ties with the region and networks oriented towards old trajectories (Tödling and Tripl, 2004; Tödling and Tripl, 2008; Skokan, 2009).

The responses have been found in active policies able to revitalise the old clusters and to build new ones, three gradual types of renewal being envisaged, as follows: innovation-based adjustment of old clusters (incremental change), creation of clusters in traditional industries that are new for the region (diversification) and creation of new clusters based on knowledge-intensive industries (radical change) (Tödling and Tripl (2008), quoted by Skokan (2009)).

Relevant examples are the Moravian-Silesian region in the North-West of the Czech Republic, the Dél Dunántúl region in the South-West of Hungary, the Lublin region situated in the Eastern part of Poland, all of them being included in the "Convergence" club, with GDP/capita levels below 75% of the EU average (the last two regions even below 50%).

Thus, in the Moravian-Silesian NUTS 2 region, characterised by an economic structure largely based on coal, steel and heavy engineering industry the cluster-based renewal policy has focused on a differentiated support in the three main directions mentioned before: the modification of the existing development paths for metal, engineering, wood and construction clusters, the creation of new directions of development by widening the economic base for automotive, energy and tourism clusters and the management of a major shift in development trajectory for IT, envicrack and hydrogen clusters (Skokan, 2009, p.2009). Both knowledge-promotion institutions (universities, research centres) and foreign firms have played a crucial role in this cluster-renewal process, encouraged by well-driven national programmes. The "Cluster Support Programme", for example, using state budget and EU financing, was set-up aiming at building competitive regions (except Prague) by bringing local actors (from industry, services and R&D) and assets together.

In the Dél Dunántúl region - South-West of Hungary the economy is dominated by the agricultural sector and agri-food industries, with meat and milk processing and production of beer, wine and sugar playing a major role. Tourism sector is also of a big importance, given the surrounding location of the Balaton Lake. At the same time, there is a high concentration of research institutes and universities: among them, the University of Pecs is the third largest and most diversified institution of higher education and research in Hungary. This profile has been turned to good account by a rational orientation of the support policies that have made processed food, leather products, sporting and recreation and health

care very successful clusters, proving that innovation is a possible ingredient in low or mid tech industries too. Thus, two of these clusters – leather and processed food – are among the 50 most specialised clusters in the EU-101 and the 50 most dominance-based on the share of total employment in the EU-10, respectively (Sölvell, Ketels and Lindqvist, 2006). A strong incentive is being provided by the multi-source financed „National Pole Programme”(started in 2006) set-up as a multi-stage hierarchy system comprising many actors, from both public and private sectors and having a strong focus on the country’s 8 pole cities and cluster development (ECO, accessed in February 2010).

The Lublin region, situated in the Eastern part of Poland, proves a strong orientation towards fruit and vegetable production and processing, ecological food and agro-tourism clusters, given its agriculture-based economic profile (Szimoniuk, 2003; Bojar et al., 2008). The benefits are visible for all participants: strengthening the farmers’ position on the market, the reduction of operational costs, the increase in farming profitability, the improvement of quality through the encouragement of new technologies to be used in agro-food production, the improvement of planning and delivery timing and the adjustment of production to the market needs (Bojar, 2007). The implication of local government and region’s universities in nationally conducted cluster support programmes has created a very stimulating environment, contribution to the attraction of foreign investors as well. In order to help spreading knowledge about clusters, raising awareness about their benefits, defining areas of potential cooperation, explaining forms of cooperation a “National Training Programme on Clustering” (for both entrepreneurs and public institutions’ staff) was set-up, targeting existing embryonic clusters and encouraging the creation of new ones, by using both state and EU financing.

All these three examples have proven that clusters can flourish and bring substantial benefits to lagging regions too, provided the right choices are made in terms of geography, stage of development, resource constraints, special societal needs and cluster policies are oriented in line with rational priorities, local preferences, market imperfections, etc. According to Rosenfeld (2002) the measures for cluster support in less favoured regions should gravitate around key actions such as: understating and benchmarking regional economies, engaging employers and institutions, organising and delivering services, building a specialised labour pool, allocating and attracting resources for investments, stimulating innovation and entrepreneurship.

Hence, there is no unique recipe for lagging regions to be suggested for all clusters, the specific regional context requiring to be considered (Rosenfeld, 2002; Hospers and Beugelsdijk, 2002).; Leick,

¹ The 2004 New Member States.

2010). Studies undertaken in this direction (e.g. Leick, 2010; Constantin et al., 2011b) recommend for lagging regions the promotion of cluster policies specific to local production systems of industrial district type – as described by Becattini (1990). Such policies appear as an appropriate organisational form, in accordance with the still incipient stage of cluster development. The choice for local production systems of industrial district type emphasizes the systems of specialised manufacturing dominated by SMEs, turning to good account their potential advantages: flexibility, creativity, the high motivation of both management and workers, links with innovative firms and markets, etc. (Crouch and Voelzkow, 2004).

4. CONCLUDING REMARKS

The question of clusters in lagging regions, usually confronted with economic structures dominated by mid- and low-tech industries, can become an interesting niche for the cluster-devoted research in the forthcoming years.

This inquiry has clearly pointed out that there is no single recipe for less developed regions to follow so as to meet the needs of all clusters; on the contrary, successful cluster policies need to take into account the specific regional context.

Considering their still incipient stage as well as successful experiences of other Central and East European countries, local production systems seem to be the most appropriate organisational form for clusters development in the two analysed regions, with a special emphasis on ‘soft’ measures, able to strengthen the local networks and to ensure cluster identity.

ACKNOWLEDGEMENT

This article is based on some of the research results obtained within a project funded by the CERGE-EI Foundation under a programme of the Global Development Network (GDN) – Regional Research Competition, RRC – IX, 2009-2010. All opinions are those of the authors and are not endorsed by CERGE-EI or GDN.

REFERENCES

- Becattini, G. (1990). The Marshallian industrial district as a socio-economic notion, in F. Pyke, G. Becattini, W. Sengenberger (Eds.), *Industrial Districts and Inter-firm Co-operation in Italy*, International Institute for Labour Studies, Geneva, pp. 123-135
- Bojar, E. (2007). Clusters – The Concepts and Types. Examples of Clusters in Poland, in E. Bojar, Z. Olesinski (Eds.), *The Emergence and Development of Clusters in Poland*, Difin, Warsaw, pp. 11-30

ARE CLUSTERS VIABLE SOLUTIONS FOR LAGGING REGIONS?
 THE CRITICAL CHALLENGES FOR MIGRATION POLICY IN THE EUROPEAN UNION?

- Bojar, E., Bojar, M. and Zminda, T. (2008). The clusters as a factor attracting foreign direct investment in less developed regions, in *Romanian Journal of Regional Science*, 2 (1), pp.54-67
- Bojar, W. (2007). The Role of Groups of Agricultural Producers in the Process of Cluster-formation in the Lublin Region, in E. Bojar, Z. Olesinski (Eds), *The Emergence and Development of Clusters in Poland*, Difin, Warsaw, pp.149-157
- Cappellin, R. (1998). The Transformation of Local Production Systems: International Networking and Territorial Competitiveness, in M. Steiner (Ed.), *Clusters and Regional Specialization*, Pion, London, pp. 57-80
- Constantin, D.L. (2006). SMEs and Territorial Networks: The Emerging Framework in Romania, in P.Nijkamp, R.L. Moomaw and I. Traistaru-Siedschlag (Eds), *Entrepreneurship, Investment and Spatial Dynamics*, Edward Elgar, pp. 165-181
- Constantin, D.L., Dragusin, M., Goschin, Z. and Pauna, C. (2011a). *Clusters in lagging regions: A bird's eye view on relevant international literature*, paper presented at the 8th International Conference of Romanian Regional Science Association, Cluj-Napoca, June
- Constantin, D.L., Pauna, C.B., Bodea, C.N. et al. (2011b). *Clusters in Lagging Regions*, VDM Verlag, Saarbrücken
- Crouch, C. and Voelzkow, H. (2004). Introduction, in C. Crouch, C. Trigilia, H. Voelzkow, P. Le Gales, *Changing Governance of Local Economies. Responses of European Local Production Systems*, Oxford University Press, pp. 1-10
- Enright, M.J. (1998). Regional Clusters and Firm Strategy, in A. Chandler, P.Hagstrom, O. Solvell (Eds), *The Dynamic Firm*, Oxford University Press, pp. 315-342
- Enright, M.J. (2000). The Globalisation of Competition and the Localization of Competition: Policies Toward Regional Clustering, in N. Hood and S. Young (Eds), *The Globalisation of Multinational Enterprise Activity and Economic Development*, London, Macmillan, pp. 303-331
- Enright, M.J. (2001). Local Partnerships, Clusters and SME Globalisation, in *Enhancing SME Competitiveness*, Paris, OECD, 2001, pp. 115-150
- Europe INNOVA (2008). *Cluster Policy in Europe. A brief summary of cluster policies in 31 European countries*, Oxford Research AS, Retrieved from http://www.clusterobservatory.eu/upload/Synthesis_report_cluster_mapping.pdf
- European Cluster Alliance (2007). *The European Cluster Memorandum*, Retrieved from www.proinno-europe.eu/NWEV/uploaded.../Cluster_Memorandum.pdf
- Funck, R.H. and Kowalski, J.S. (1997). Innovative Behaviour, R&D Development Activities and Technology Policies in Countries in Transition: The Case of Central Europe, in Bertuglia, C.S., Lombardo, S., Nijkamp, P. (eds), *Innovative Behaviour in Space and Time*, Springer-Verlag
- Hospers, G.J. and Beugelsdijk, S. (2002). *Regional cluster policies: learning by comparing?*, in *Kyklos*, Vol. 55, No. 3, pp. 381-402
- Ketels, C. (2003). *The development of cluster concept – present experiences and further developments*, Paper prepared for the NRW Conference on Clusters, Duisburg, Germany, December, Retrieved from http://www.isc.hbs.edu/pdf/Frontiers_of_Cluster_Research_2003.11.23.pdf
- Ketels, C., Lindqvist, G. and Sölvell, Ö. (2006). *Cluster Initiatives in Developing and Transition Economies*, Centre for Strategy and Competitiveness, Stockholm

- LEED (2004). *Clusters of enterprises and the internationalisation of SMEs: The case of the Romanian region of Timisoara*, OECD – LEED seminar, Timisoara
- Leick, B. (2010). *Regional clusters in traditional industries and cluster policy: the case of East Germany "Musicon Valley"*, paper presented at the Annual Conference of Regional Studies Association, May, Pecs, Hungary
- McCann, P. (2001). *Regional and Urban Economics*, Oxford University Press
- Molnar, T. (2001). Regional characteristics of social and economic structures in Western Transdanubia, in *Journal of Central European Agriculture*, 2 (1-2), pp. 17-26
- Nijkamp, P. (1997). *Northern Poland regional development initiative and project. Some theoretical and policy perspectives*, Department of Spatial Economics, Free University of Amsterdam, mimeo
- Porter, M.E. (1990). *The Competitive Advantage of Nations*, Free Press, New York
- Porter, M.E. (2003). *The Economic Performance of Regions*, in *Regional Studies*, Vol. 37, No.6-7, pp. 549-678
- Rosenfeld, S.A. (2002b). *Creating Smart Systems. A guide to cluster strategies in less favoured regions*, paper prepared for EC-DG Regio, Retrieved from http://ec.europa.eu/regional_policy/innovation/pdf/guide_rosenfeld_final.pdf
- Skokan, K. (2009). *Regional Clusters and Transformation of Old Industrial Regions*, Proceedings of the 3rd Central European Conference in Regional Science – CERS, Ostrava, October, pp. 770-783, Retrieved from http://www.cers.tuke.sk/cers2009/PDF/02_55_Skokan.pdf
- Sohn, D.W., Kim, H. and Lee, J.H. (2009). Policy-driven university-industry linkages and innovation networks in Korea, in *Environment and Planning C: Government and Policy*, Vol. 27, Issue 4, pp. 647-664
- Sölvell, Ö., Ketels, C. and Lindqvist, G. (2006). *Industrial Specialization and Regional Clusters in the Ten New EU Member States*, paper presented at DRUID Summer Conference, Copenhagen, June, Retrieved from <http://www2.druid.dk/conferences/viewpaper.php?id=572&cf=8>
- Sölvell, Ö., Lindqvist, G. and Ketels, C. (2003). *The Cluster Initiative Greenbook*, The Competitiveness Institute (TCI)/Vinnova: Gothenburg, Retrieved from www.cluster-research.org
- Steiner, M. (2002). Clusters and networks: institutional settings and strategic perspectives, in McCann (ed.), *Industrial Location Economics*, Edward Elgar, pp. 207-221
- Teräs, J. (2009). *Non-metropolitan regional clusters: critical success factors*, EPROCA General Assembly, Snowpolis Ltd, Vuokatti, Finland, Retrieved from http://www.prodemic.fi/data/attachments/TerasJukka_2ndGA.pdf
- Tödtling, F. and Trippel, M. (2004). Like Phoenix from the Ashes? The Renewal of Clusters in Old Industrial Areas, in *Urban Studies*, No.41, pp. 1175-1195
- Tödtling, F. and Trippel, M. (2008). Cluster renewal in old industrial regions: continuity or radical change?, in Karlsson, Ch. (Ed.), *Handbook Of Research On Cluster Theory*. Edward Elgar Publishing, 2008. pp. 203-218
- Torre, A. (2008). First Steps Towards a Critical Appraisal of Clusters, in U.Blien, G. Maier (Eds), *The Economics of Regional Clusters – Networks, Technology and Policy*, Edward Elgar, pp. 29-40

ARE CLUSTERS VIABLE SOLUTIONS FOR LAGGING REGIONS?
THE CRITICAL CHALLENGES FOR MIGRATION POLICY IN THE EUROPEAN UNION?

- Tripl, M. (2010). *Low-tech innovation in a high-tech environment: the case of the food industry in the Vienna metropolitan region*, in *Regional Responses and Global Shifts: Actors, Institutions and Organisations*, Abstracts of the Annual Conference of the Regional Studies Association, Pecs, Hungary, May, pp. 193-194
- Van der Linde, C. (2003). *The Demography of Clusters – Findings from the Cluster Meta-Study*, in Brocker, J., Dohse, D. and Doltwedel, R. (Eds), *Innovation Clusters and Interregional Competition*, Berlin, Heidelberg, New York, pp. 130-149