COORDINATES AND REPRESENTATIONS OF ARCHITECTURE FOR A REGIONAL CROSS-BORDER DEVELOPMENT STRATEGY

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Abstract: The general objective of the wider research this paper is part of is to analyze in a multidisciplinary framework the economic development poles of the Romanian border areas and to identify the ways to building a viable strategy in a cross-border framework. One of the specific objectives is to design a complex model that shapes an adequate architecture for a development strategy for a cross-border area. A result that meets this objective is an architectural tridimensional model for building a development strategy for a cross-border area that is presented in this paper, based on the growth/development poles. The description includes the main coordinates and representations of the model, where the building framework is the institutional system layered on many levels, the main levels being structured by the economic sectors and where the solidity points are the growth/development poles from the cross-border area.

Keywords: cross-border; development poles; economic development

JEL Classification: P25; P48; R11

Introduction

Most of the cross-border areas are weakly developed, mainly in the context of the gravity towards the national centers. The differences between the administrative structures and competences, between fiscal and social legislation, the cooperation difficulties between SMEs based on a lack of cross-border suppliers and markets, differences between legislation and spatial planning, differences between the environmental and waste legislation, the differences between the exchange rates, the existence of different transport systems, labour markets, wages levels, social security systems, the natural emergence of a special type of "cross-border tourism" based on economic interests and with impact on the environment protection, the existence of preconceptions, stereotypes or tensions in the communities from both parts of the border, the distance between center and periphery – all these are putting pressure on cross-border areas and constitute challenges of a cross-border region that aims to balance economic and social development on long term.

Moreover, we should consider the changes in Europe – that becomes a meeting place for diversity in many fields – economic, political, institutional, cultural or professional. Therefore, we notice the increase of border permeability inside the European Union in parallel with the decrease of border permeability between the European Union and its neighbours, issuance of financial incentives,

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legal pressure, ideas and paradigms more focused on the cross-border cooperation process, re-shaping of the role of national governments as "guardians" of cross-border relations, the reconfiguration of the border status between two sovereign states from separator of countries to a mixture of functional spaces, such as economic, social, legal or identity.

Considering this framework, the governance of the cross-border regions cannot be approached in the traditional political or territorial sense, an approach placed in the context of networks of public and private actors that bring together different social systems based on different value systems being more appropriate instead, decisions being less dependent on the national level. The cross-border regions become forms of institutional building due to difficult changes along the borders, to involvement of different types of local governance and to interactions among multilevel governance networks - local, regional, European and even global. In the configuration of these regions it is worth retaining that on one hand the cross-border transfer of the organizational knowledge is most effective when the needed knowledge is simple, explicit and independent, on the other hand the differences between the individualist and collectivist cultures influence the process of knowledge transfer (Bhagat et al. 2002). Repeated and good quality interactions, based on principle involvement, favour trust, mutual understanding, internal legitimacy and mutual commitment, therefore it generates and sustains a capacity for joint projects.

1. Research issues

This paper is part of a wider research that aims to analyze in a multidisciplinary framework the economic development poles placed in the Romanian border areas and to identify how viable development strategies in a cross-border context can be built. Still, even if the research was focused on a specific territory, the proposed theoretical model is based on a wide general literature and it can be considered as well in any European territory, for other cross-border regions. Our endeavours are based on a few hypotheses. Firstly, the cross-border areas are peripheral areas but with good potential that can be capitalized on, in conditions of proper solutions. Secondly, the theoretical literature about regional development, growth and development poles, clusters and other similar aspects, offers many approaches, models and solutions that can be adapted to a cross-border context. To this we add a third hypothesis, one that considers that the empirical studies about cross-border cooperation at different borders between Members States or between these and partner countries offer real models of cross-border cooperation rich in lessons learnt and potential solutions for specific issues that can be adapted to other cross-border areas. The fourth hypothesis is based on the fact that the cross-border areas have
some specific features and their approach needs a multidisciplinary analysis framework that should consider issues as regard to at least geopolitical, legal, sociological, administrative science or innovation systems. The fifth hypothesis considers distinctions between the cross-border areas between Member States and the cross-border area between Member States and EU partner countries, as having different characteristics, if we consider at least legislation differences and the permeability degree of the borders. The last hypothesis relies on the fact that, in conditions of cooperation and joint development will in cross-border areas, a model can be identified for building a long term strategy for developing a cross-border area.

With these hypotheses in mind we had four research questions: which are the actors that should be involved in building a development strategy for a cross-border region?; what are the steps that can be made in building a development strategy as being viable – adapted to the region needs, assumed by the actors involved in implementation, realistic, based on real existing or potential resources and able to capitalize the existing potential of the cross-border region?; can a complex model that catches a proper architecture for building a development strategy for cross-border regions be shaped? What is the role of the growth and development poles and what is the meaning that we may assign to it?

From this we established four research objectives:

- **Objective 1** – to identify the relevant actors that may be involved in building a development strategy for a cross-border region and also their role in an institutional system;
- **Objective 2** – to identify the coordinates and stages for the building of an institutional development strategy;
- **Objective 3** – to create a complex model which should comprise a suitable architecture for the elaboration of a cross-border region;
- **Objective 4** – to determine the role that the growth and development poles have in the process of preparing a development strategy of a cross-border region.

The actual paper provides answers to three out of the four objectives and describes one of the important results, the tri-dimensional architectural construction model for the development strategy of a cross-border region respectively, focused on the growth/development poles, shortly named DEV-CBC. The other results of the wider research are: a theoretical model for the institutional structure of actor networks which are involved in the elaboration of a development strategy for a cross-border region, a theoretical model structured in the stages to be followed in the elaboration of a development strategy for a cross-border region, two research instruments in the field in order to obtain the necessary data for the elaboration of a cross-border development strategy, a pre-implementation
assessment tool of the development strategy of the cross-border region and a framework for validation and update of the architecture, in a certain cross-border region, namely Suceava- Botosani-Chernivtsi.

It is important to keep in mind that in our research we give a larger meaning to the notion of the development pole, by including, besides the notion outlined by the theoretical framework and by the different entities, structures or entities which constitute activity concentrations and which have as their aim community development – urban areas, growth poles, clusters, urban development poles. We have chosen this extended approach while considering that the previously mentioned points generally have economic development potential, and they usually include either entities with a research-development and innovation capacity (universities, research institutes, excellence centres), they have an adequate business infrastructure or at least the development potential for it, they are accessible (by vehicle, train, airplane or by ship), they include entities which offer public services and they have the capacity of administrative association.

In this paper, for a first representation of the architecture we propose an architectural tridimensional model for building a development strategy for a cross-border region, based on development/growth poles.

2. Literature review

The existence of much research about the regional economic growth and development poles and also the increasing importance of this field led to the identification of features and experiences, out of which just a part are referred to in this paper, the conclusions being relevant for our research.

The approach of the economic development of cross-border regions may start from the usual regional economy theories (Solow, 1956) (Swan, 1956) (Richardson, 1973) (Armstrong and Taylor, 2000) (McCann, 2001), economic growth (Myrdal, 1957) (Romer, 1986) (Lucas, 1988) (Kaldor, 1970) and development poles (Perroux, 1995) (Neubauer, 1976) and it may continue with their adaptation, still considering a few specific elements: geographical placement in the neighbourhood of main cities or development of economic areas with a high potential, cultural differences between communities from each part of the border, historical events more or less controversial that mark the actual diplomatic relationships, legal differences, provisions of the treaties or agreements between the two countries, etc.

The analyzed theoretical frame offers us much needed indications in our endeavor, referring to the dependence between productivity and the technological progress, a faster innovation rhythm and
promotion of investments in human capital contributing significantly to the development process. The change of the nature of the international trade relations from the competitive advantage to the competitive advantage based on a better use of inputs, in a more productive way, gives a new sense to the knowledge economy (Asheim, 2000) and it increases the importance of the perspectives and strategies that guarantee the innovative capacity of the region for the economic growth, contributing to the openness of the economies to the external markets, macroeconomical stability, increase in governance and public institutions quality, enforcement of the law, increase in corruption level, orientation to the economic principles of the competitive markets, losses in governmental expenses and so on, as factors evaluated by Bari. Beyond these, we can consider also the accumulation of the capital goods and human capital in regions, efficient distribution of resources and technological endowment, if we are concerned about the investment need in a higher professional qualification and in innovation promotion, as long as services companies and institutions are opened to this (Iordan, Pauna, & Andrei, 2008). The efficient use of ICT benefits supposes an ongoing competition in infrastructure, networks and connected applications, fact that supposes a fructification of the innovative potential of the universities and research centers, but in cooperation with profit entities, in view of calibration with real market and consumer needs.

The development of the regional economies can be significantly stimulated by concentrating the public investments in a limited number of cities and by supporting the network of growth poles, both in urban and rural areas, through directing significant funds towards the local development poles (Dobrescu and Dobre, 2014). A proper vision pursues the integration and implementation of the collaborative networks in polycentric territories, through the cooperation among areas and small and medium cities, both, at the borders inside the European Union and at the borders between the European Union and neighbour countries. The networks of urban development poles, together with the networks of growth poles can form polycentric systems that balances the negative space generated by the concentration and economic development, plus, the support networks of growth poles, from rural and urban areas, can support these if the local investments are directed strategically and complementary in the region. Cities are seen as growth poles because they have the capacity to induce a rapid economic growth, to create jobs, to stimulate productivity growth, to influence the development of small and medium cities and the neighbour rural areas, and therefore can contribute to the development of the regions where there are located. Moreover, the functional area of the cities goes most of the times beyond the administrative area, therefore the cities’ growth can lead to an enlargement of the functional area around (Banca Mondiala, Ministerul Dezvoltarii Regionale Si Administratiei Publice, Ministerul Fondurilor Europene, 2013). If a pattern of polycentric
development is respected, that includes more growth poles, we can notice that the economic areas
can be larger and, in the long term, the urban development can stimulate the rural development.

As to what concerns the clusters as growth and development sources, one of the conclusions
relevant for our research, based on the information about clusters in Romania, on the scientific
literature and also on Porters’ remarks, is that, as regard to the cross-border areas between Romania
and its neighbours, there is a starting potential for building a cooperation network that may include
clusters as long as in the regions along the borders there are clusters covering a variety of fields. A
second conclusion is that, both the scientific literature and experience offer guiding marks for an
investigation tool for the potential of a cross-border cooperation network that includes clusters. Some
issues that should be worth investigating are: the potential competitive advantages through
knowledge, relationships, motivation; the existence of multiple links and synergies between
industries and institutions from both countries; the innovative potential generated by universities,
research centers or active companies in the innovation area; the potential usage of the historical
heritage that can be preserved and recovered in relation with tourism, urban development,
environmental management; the level of cooperation among enterprises, local and regional
administration, research institutes, business associations (as catalysts), in each country and at cross-
border level, between entities from both countries; the potential of including multinational companies,
urban centers, the level of support for companies from the local and regional administration and, not
the least, the motivation or objectives concerning cross-border activity, in the neighbourhood or
toward other common markets. In a separate paper we investigated the clusters issue in the scientific
literature and experience and the conclusions of that review were mentioned (Slusarciuc and
Prelipcean, 2014).

The existence and development of clusters draw some significant effects for region
development, namely, the considerable involvement of the institutions and government, job
specializations for a certain industry that can be a competitive advantage for the region, continuous
innovation – sophisticated methods, advanced technologies, unique products or services. The
innovation potential of clusters is generated mainly by including the academic and research
institutions, educational institutions, innovation and engineering centers, excellence centers and
active innovative enterprises, as members (Romanova and Lavrikova, 2008).

On the other hand, the clusters by themselves are not enough to cover the weaknesses of the
business environment; a solution could be in this case to include them as part of a strategy for
competitiveness increase, based on regional strengths and clear and coherent objectives (Anicic et al.
2013). Also, it should include actions for capacity building in mutual cooperation at local level and
network approach, that ensure an extension of business relations, monitoring of development trends, share of information about enterprises strategies, openness to new ideas, collaboration with successful business, in order to save time and other resources.

Apart from the remarks above, the existence of some approaches in the cross-border relationship among clusters, based on the neighbourhood of the countries or on identification of common target markets, confirms to us one of the research hypotheses, namely, the existence in the practical field of models and solutions that can be adapted to the cross-border context (Altmann, 2014). An important conclusion, based on the lessons of the reviewed examples (Slusarciuc and Prelipcean, 2014), refers to the fact that, as long as a consistent potential for cross-border networks can be identified, a future strategy for developing a cross-border area should include tools for collective knowledge and learning inside networks, for detecting and improving the management abilities of clusters and for strengthening of cooperation inside and around clusters.

The review of these approaches and some other multidisciplinary approaches allowed us to identify necessary guiding marks in shaping the proposed models and it confirmed some of the research hypotheses, namely the fact that the cross-border regions have some specific characteristics and their study needs a multidisciplinary frame of analysis that should include also geopolitical, legal, sociological, administrative issues and also the fact that the cross-border areas placed between European Union member states have different characteristics compared with the ones placed between European Union and partner countries, at least from the point of view of legal differences and borders permeability (Slusarciuc, 2015).

3. Coordinates and mapping shaping DEV-CBC

In the beginning of this section we consider relevant to delimit the meaning of a cross-border region in the framework of this research and of the models, instruments or recommendations that we propose. The architecture that we set was build having in mind the geographical areas placed along any of the Romanian borders (in our specific study case) with neighbouring countries and which includes at least one county in Romania and an equivalent administrative unit on the other side of the border: regions in Bulgaria, districts in Serbia, counties in Hungary, regions in Ukraine and departments in Republic of Moldova. The same delimitation can be considered regardless of the border, inside the European Union or with its neighbours, containing NUTS 3 units. Also, for cooperation cases among more restricted geographical areas, our proposals are valid but the implementation needs to be simplified as the case may be.
The proposed architecture for building a development strategy for a cross-border region has as skeleton-structure the institutional system layered on more floors, the main levels are formed by the economic sectors and the abutments are the development/growth poles placed in the cross-border region.

In our endeavours we take into consideration two sets of coordinates: the first set refers to the strategy from the point of view of the economic sectors and the exploitation of opportunities from each economic sector and the second set refers to the approach through levels/layers of the entities and it is the one in which we can identify the poles or relevant “nodes” on which a regional cross-border development strategy can be built. The two coordinate sets have common elements represented by either the domains approached or the entities that are interest “nodes”. Besides the coordinate sets we propose a series of reinforcement marks which bring long-term value, flexibility and stability to the development strategy.

Regarding the first set of coordinates, structured on the main economic sectors, the strategy DEV-CBC should target the identification and usage of the opportunities for each economic sector, setting up objectives in the following areas:

- The primary sector – agriculture, fishing (based on the Local action groups – LAG – and the transfer of the working models where is the case), forestry (through joint restocking projects or projects based on alternative materials as sustainable development approach). The poles or “nodes” used in this sector are LAGs, local/regional administrations, rural administrations, agricultural or local producers associations, etc.

- The secondary sector – support for existing small enterprises production or starting new ones in those fields that can represent competitive advantage of the cross-border region, support for use and revival of the traditional crafts, including the construction technology, identification of technologies or innovative products that can be developed at regional level based on existing resources, etc. The poles or “nodes” used in this sector are the commerce chambers, business associations, enterprises, universities, research and development centers, clusters and local/regional administrations, as support entities for economic development by incentives or facilities offers.

- The tertiary sector – the development of tourism services at regional level, support services for the productive sector, etc. The poles or “nodes” used in this sector are the commerce chambers, business associations, enterprises, universities, research and development centers, clusters and local/regional administrations, as support entities for economic development by incentives or facilities offers.
- The quaternary sector – it intervenes as support for the basic sectors mentioned above and it is focused on: building a good governance at regional level among all the actors involved in DEV-CBC building, cooperation development in research areas, initiation of cultural and educational exchanges that indirectly facilitates consolidation of the cross-border partnerships at regional level and the knowledge transfer among the partners from both sides of the border, the involvement of the civil society and the nongovernmental associations as legal entities that represent the citizens and promotes their interests and needs in different fields.

The second set of coordinates is built on levels/layers and on each layer we can identify the relevant poles/nodes. In Figure 1 below, the representation of the tridimensional model based on planes, main poles/nodes for each plane and examples of possible relations between these is shown.

Therefore, we distinguish five levels, ordered from bottom to top, taking into consideration the priority in establishing the development objectives and building of the DEV-CBC:

- The level of urban areas – the main actions are: to identify the growth/development poles in the area, the metropolitan areas, in both states, to identify the existing partnerships and the potential ones, the main cross-border projects implemented or planned. The main actors are the local and regional administrations from towns/cities.

- The level of rural areas – the main actions are: to identify the local action groups in the member state (Romania in our study case), the agricultural and local farms associations, the rural areas, both in the member state and in the neighbour state, to identify the existing and potential partnerships, the main cross-border projects implemented or planned. The main actors are the rural administrations, LAGs and agricultural or local farms associations.

- The level of innovation - the main actions are: to identify the research and development centers or the ones with high innovative potential, both in the member state and in the neighbour state, to identify the existing and potential partnerships, the main cross-border projects implemented or planned. The main actors are universities, research and development centers, and clusters.

- The level of business entities – the main actions are: to identify the relevant business crowdings, the main enterprises or multinational companies in the region, the representative entities for the business sectors, and it has as actors the enterprises, chambers of commerce, business associations and clusters.

- The level of other structures – the main actions are: to identify the institutions and organizations acting on relevant fields for the region, such as public health, environmental protection, civil defense, social institutions and NGOs or border and custom institutions.
Concerning the possible relations among the actors we can identify the following types of connections:

- **Connections type 1** – connections between entities from the same country and the same plane – these are the simplest type and usually are long term connections, therefore the partnership has been calibrated and consolidated;

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1 The structural and informational concept belongs to the author of the paper and the electronic design was prepared by Sergiu Dascalu, implementation and monitoring officer in the Regional Cross-Border Cooperation Office of the Romanian-Ukrainian Border.
• Connections type 2 – connections between entities from the same country and different planes – we cannot establish the characteristics, these may be traditional partnerships, with solid ground, but may be new partnerships, initiated lately. Most of this type connections are traditional;

• Connections type 3 – connections between entities from different countries and the same plane – in this area there are already significant partnerships, due to the cross-border cooperation programmes on each of the five borders of Romania, already at the fourth programming generation\(^2\). These partnerships already passed through at least two implemented joint projects and they identified a proper cooperation way. Also, in this category we may include new partnerships, at their first cross-border partnership exercise;

• Connections type 4 – connections between entities from different countries and different planes – in this area most of the partnership are new, at their first partnership exercise, constituted usually as consequences of the other types of connections.

A complete tridimensional representation of all the existing and potential connections in a cross-border region is difficult to design with respect to simplicity and clarity of the representation, but, as an easy way of working we recommend the deconstruction by maps representation for each of the five levels and by maps for the connections type:

- map of urban centers and metropolitan areas,
- map of rural areas and LAGs,
- map of business structures and enterprises crowdings,
- map of clusters, universities and research & development centers,
- map of other institutions and organizations acting in relevant fields for the region,
- network-map of the existing partnerships,
- network-map of the potential partnerships.

The last ones may be also deconstructed in maps that combine fewer levels, especially the ones with common “nodes”. Also, if it will be the case, a map of disadvantaged areas for which relevant objective may be set could be prepared.

The maps are relevant in order to identify the existing resources concerning development/growth poles that may attract in the development process other entities from different

\(^2\) The first pilot initiative was represented by EBI - External Border Initiative Programme (2003), followed by the Neighbourhood Programmes (2004-2006), then Joint Operational Programmes (2007-2013) and now started or are under preparation and approval the future Joint Operational Programmes for 2014-2020.
levels. Also, the potential of the cross-border region in terms of partnership and cooperation or new development areas that had not previously been optimally used may be identified.

Complementary, next to the sets of coordinates, we propose some **stiffening marks** that bring value, flexibility and stability for DEV-CBC in the long term. These marks may be used depending on the specificities of the cross-border region and on the real state of facts when the analysis for the strategy will be prepared:

- The initiation of reconciliation activities in order to overpass the disadvantageous historical context deeply imprinted in the memory of the communities from the cross-border area;
- The use of the significant contribution that national minorities may bring for building an improved framework for cooperation in the border area;
- The identification of twin or pair cities, placed nearby the border, on each of the two sides, and the intensification of the collaboration between them, through formal and informal actions;
- The identification of the metropolitan areas located nearby the border and their integration in the DEV-CBC with specific measures or actions;
- The identification of natural sites as cooperation themes, the sites being a space for solving, in a cross-border context, some international environmental protection issues, with the support of previous actions that NGOs ran;
- The identification of joint projects that may be implemented in more stages in a longer period of time;
- The set up or identification of formal existing network structures that may be used as starting points for building the institutional system that ensures continuity and attracts financial resources;
- The initiation of setting up branches of representative business associations on both sides of the border;
- The identification of ample events that can be organized jointly;
- In the long term, the identification of cooperation opportunities between three countries that cover a certain cross-border region.

The two sets of coordinates, together with the marks and representations described above, constitute the basic architecture for a development strategy in a cross-border area, built around development/growth poles.
Conclusions

This paper confirms one of the main hypothesis of our larger research, namely that, beyond the differences inside the cross-border region, between the communities from both sides, under the condition that a strong will for cooperation and joint development of the cross-border area exists, a model for approaching a long term strategy building for a cross-border region has been identified.

One of the main representations of the architecture proposed is a tridimensional model for building a development strategy in a cross-border region, based on growth/development poles.

The architecture proposed for the construction of a development strategy for a cross-border region has as framework-structure of the institutionalized system situated on several levels, where the main levels are composed by the economic sectors and in which the strong points are the growth/development poles situated in the cross-border region. In our approach we take into consideration two sets of coordinates: the first set refers to the strategy from the point of view of the economic sectors and the use of opportunities from each economic sector and the second set refers to the approach through layers/plans of the entities and it is the one in which we can identify the poles or relevant “nodes” on which a regional cross-border development strategy can be built. The two coordinate sets have common elements represented by either the fields they activate in or by the entities that are interest “nodes”. Besides the coordinate sets we propose a series of stiffening marks which bring long-term value, flexibility and stability to the DEV-CBC.

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