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THE INDIVIDUALISATION OF DISCONTINUITIES IN DEEPLY DISADVANTAGED AREAS OF ROMANIA[1]

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ABSTRACT - This study is a continuation of research on deeply disadvantaged areas, adding new elements to finalise a methodology in their treatment field. It also brings practical elements related to the individualisation of the main territorial discontinuities at the level of some problem areas for all the development regions of Romania. The basic hypothesis is that in the treatment process of deeply disadvantaged areas, knowing the gaps within them is of utmost importance. These gaps are highlighted by physiognomic, functional and especially by mental discontinuities. The indicators used and the amendment with qualitative indicators may lead to the individualisation of such discontinuities, which separates the very poor areas among the poor ones. Possessing such territorial partitions, the transition to their characterization and of insertion environment is easy, in order to assess the real possibilities of future development.

Key words: territorial discontinuities, deeply disadvantaged areas, uneven development, Romania

INTRODUCTION

The deeply disadvantaged areas are the areas characterized by development indicators placed well below the regional average (Ianoş, 2000, 2001). In this study we do not aim to reconsider the basic conceptual elements, but to show how discontinuities could be individualised within these areas. Such an approach can be the basis of a high-performance management of their dynamics within to reduce the gap in relation to disadvantaged areas at regional level.

Therefore, in the treatment of deeply disadvantaged areas is essential to dissect their internal structures and to individualise the main mechanisms that determine changes at micro-and medium-scale. In this regard, an important step is to detect the discontinuities related to development in the deeply disadvantaged areas. Even if the spatial projection of such discontinuities at micro scale seems less legible, it is essential to know the morphogenesis and to individualise the main factors in their development and disappearance (Merenne-Shoumacher and Bianchet, 1994a, 1994b).

INSTRUMENTS AND METHODS OF DISPARITIES INDIVIDUALISATION

Analyzing the statistics and real possibilities to measure, quantitatively and qualitatively, the main components able to indicate the levels of development of basic units of a deeply disadvantaged area, a comprehensive list of indicators was shaped. Some of them are only qualitative expressing: the general physiognomy of settlements, the infrastructure maintenance level, overall behaviour of the population and the assessment of the creative capacity of communities (Dramowicz, 1985; Ancuța 2008). The difficulty in measuring these indicators led to the use of an assessment scale from 1 to 100, in the area concerned. Statistics, namely the information contained in the BDL and in the census volumes of 2002, provides mainly demographic and less economic information. Moreover, the local economy and infrastructure are deprived of information that leads to a direct assessment of the types of activities and their intensity at commune / city level.

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In these conditions, the quantitative indicators used are largely those used in the individualisation of deeply disadvantaged areas. They were grouped into four broad categories, reflecting the demographics, economics and workforce, infrastructure and standard of family life. The analysis of elementary indicators in terms of concrete values led to the establishment of the following system of indicators:

- *demographic indicators*: the dynamics of the number of population between the last two censuses (%), the net internal migration (% 0), the infant mortality (% 0), the share of high school and higher education graduate population (%);
- *economic indicators*: the number of firms per 1,000 inhabitants (% 0), the turnover by communes (Euro/inhabitant), unemployment rate (%), share of unskilled workers in total employees (%);
- *infrastructure indicators*: the share of dilapidated buildings (%), the share of housing completed in 2005 of total dwellings (%), the number of pharmacies per 1,000 inhabitants (% 0);
- *standard of living indicators*: habitable surface per inhabitant (m² / inhabitant), the share of population without running water (%), the number of doctors per 1,000 inhabitants (% 0).

Development aggregate index values vary from one area to another, according to its extension and the existence, in general, of a city of over 10,000 people within it. This explains the fact that the largest range of variation is noted in the deeply disadvantaged areas selected from the North-East region (NE2, for example, recorded a range of about 20 units) and the South region (S4, with a range of almost 16 units).

The processing of the quantitative indicators was made after standardizing them. The result was a specific development indicator for each commune / city, which later was mapped. The qualitative indicators were used only to correct and justify the method of aggregation of some basic administrative entities within the deeply disadvantaged area.

THE DEMARCATION OF CHARACTERISTIC AREAS BY REFINING THE ANALYSIS AT THE LEVEL OF EACH DEEPLY DISADVANTAGED AREA

The basic idea around which the concept of treatment of deeply disadvantaged areas was built has been to individualise, at the level of each of these areas, the characteristic spaces with similar values of the development level. Obviously, overall, the entire selected area is low developed, but considering the extension and functional complication, including within their interior, differentiation processes take place, which suggests the need for controlled interventions at these levels.

The method for delimiting the characteristic areas was based on the values recorded by the general index of development of each commune / city. The main steps in the demarcation process were the following:

a) the cartographic transposition of the development index values obtaining maps with specific values of each commune or town;
b) the aggregation of the relatively homogeneous areas at the sample scale (we mention that the analysis was conducted on selected areas, resulting at national level, 48 entities;
c) the determination of the level of development in relation to the average level of the area analyzed and qualitative assessment of the development level;
d) the correction of primary aggregations by taking into account qualitative indicators;
e) making compromises in the generalization of the levels of development process, taking into account the geographical position compared to some urban or rural areas with central place functions;
f) the proper demarcation of the characteristic areas of each of deeply disadvantaged areas;
g) assigning codes to be more easily identified in the analyses and to facilitate, subsequently, the extrapolation of development models.

The selected areas have a very different structure. Despite the fact that these rise serious problems related to remaining behind, which explains their individualisation through obvious discontinuities in the development level of most indicators, by their extension show the existence of other internal discontinuities. This demonstrates the importance of multi-scale analysis in the spatial individualisation of territorial development phenomena.

The demarcation of characteristic areas was made by generalizing the development index values, assigning a qualitative assessment to each new individualised area. The four types of assessment: high, medium, low and very low development, keep their compare force only within the selected area, due to the placing of the referential system at the deeply disadvantaged area level. In order to reflect the method of the results generalization in levels of development, we randomly present a deeply disadvantaged area with inter-communal differences (Figure 1a) and the situation after generalization (Figure 1b).

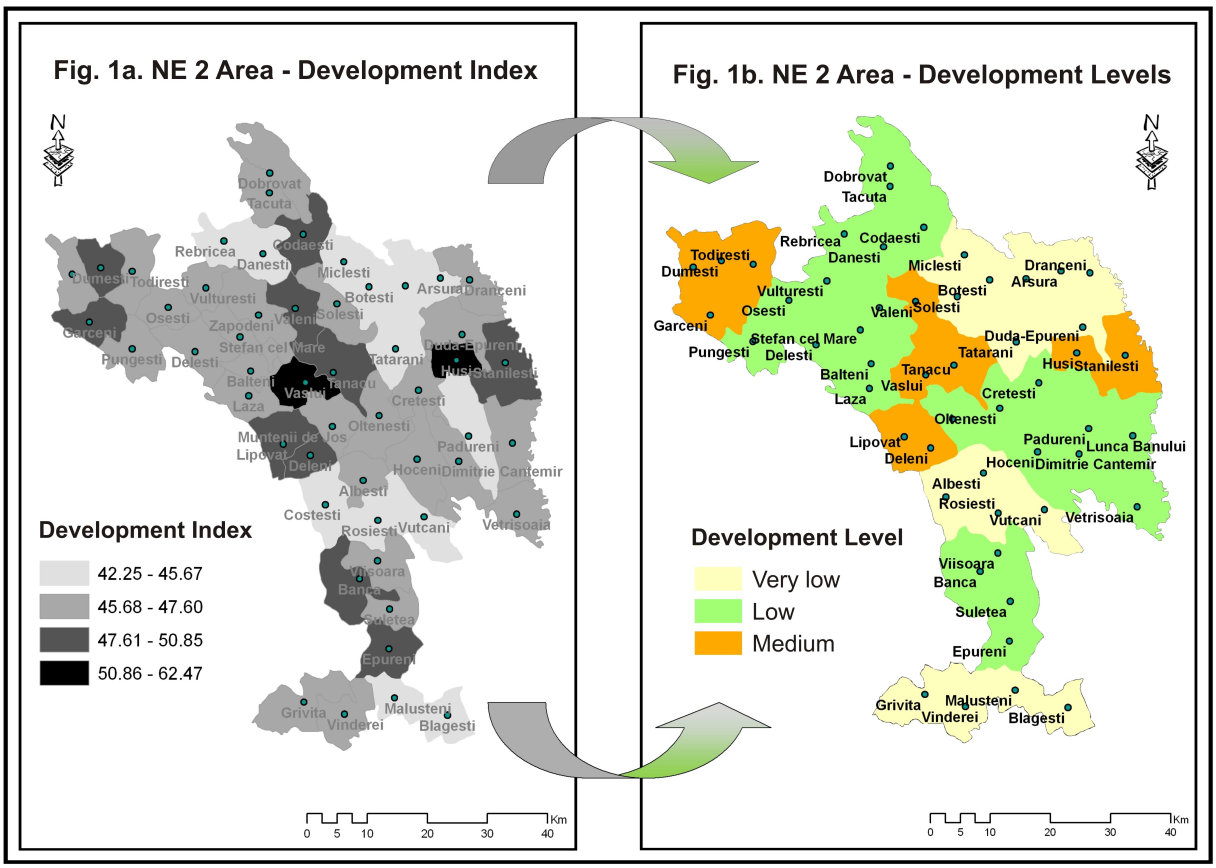

Figure 1. *The development index (a) and the development levels (b) in the NE2 Area*

The multitude of situations was an important effort of generalization, including some of the qualitative indicators, others of geographical position and, moreover, the purpose for which to recourse to such an internal review was always considered. The latter led to the idea of fragmenting a relatively homogeneous area in order to provide the basis of a subsequent functional building. A very large area, apparently homogeneous, but with opposite directions flows, can not be managed in terms of subsequent treatment. Therefore, its fragmentation becomes a necessity for building an institutional framework to implement inter-local development policies.

THE CHARACTERIZATION OF SPATIAL DISCONTINUITIES WITHIN EACH DEEPLY DISADVANTAGED AREA

The analysis of all the breaks occurred between the individualised characteristic areas highlights a variety of situations, depending on which some types result, defined by the depth of the gap, the homogeneity, the fragility, and the duration of discontinuity.

In accordance with the depth of the gap, we select few significant examples among the characteristic areas:

a) Deep discontinuities, individualised between areas with opposite levels of development, between those with high development and low or very low development, respectively: between NE4c and NE4b, SE4a and SE4b, S3a and S3b, SV5a and SV5b, V4b and V4c, NV5e and NV5d, C6c and C6b;
b) Diffuse discontinuities or no discontinuities. Although they are not so obvious, boundaries were drawn, demarcating the characteristic areas that could be viable in the implementation of some real inter-local development policies. As examples, we mention the boundaries between the areas: NE3b and NE3f, SE3a and SE3b, S5a and S5f, SV1c and SV1f, NV2a and NV2c, C3b and C3c.

In relation to the discontinuities degree of homogeneity, meaning to maintain the same intensity of the discrepancies along a boundary, we note:

a) Homogeneous discontinuities, meaning the same gap throughout its length: NE3a and NE3b, SE3c and SE3d, S2i and S2k, SV3a and SV3b, V3a and V3b, NV1a and NV1c, C5a and C5b;
b) Heterogeneous discontinuities, with highly variable differences from one area to another: NE3c and NE3d, SE4b and SE4c, S3a and S3b, SV4c and SV4d, V3b and V3c, NV5d and NV5c, C6b and C6c.

The fragility of these discontinuities considers their trend of turning into continuities. Research has individualised those discontinuities defined as close gaps, which means a very high fragility and others defined by maximum gaps, meaning a reduced fragility. In other words, it is about the state of discontinuities, some situated at the "instability" threshold and others with a higher degree of stability. In this regard, there were individualised:

a) Discontinuities with high fragility, located in similar areas in terms of levels of development and where, usually, the gap between them must be emphasized. This category includes discontinuities such as those separating the areas: NE3b and NE3f, SE3b and SE3c, S7b and S7c, SV4c and SV4d, V4a and V4b, NV4g and NV4f, C3b and C3c;
b) Discontinuities with low fragility, located between areas with major gaps, which can hardly be dimmed: NE5c and NE5e, SE3d and SE3e, S3a and S3b, SV4a and SV4d, V4b and V4c, NV1b and NV1c, C5b and C5d.

Assessments of the duration of discontinuities from these levels could be made only indirectly, in the absence of real opportunities to compare two time sequences of the internal structures of deeply disadvantaged areas. However, the three categories of discontinuities were indirectly used in order to understand the mechanisms behind the production of discontinuities.

From the detailed study on the characteristics of the areas within deeply disadvantaged areas, the mechanisms that produce spatial discontinuities and induce their dynamics have been known and described. In such action, the first step was individualising the factors that may cause discontinuities, ranking and analyzing the interactions between them.

THE INDIVIDUALISATION OF THE POTENTIAL FACTORS THAT GENERATE DISCONTINUITIES

Many of the current discontinuities come from historic times, since we discuss about deep rural areas, where the development was extremely slow, and phenomena such as depopulation, could have only adverse effects. The variety of practical situations led us to the idea that we can talk about a

very large variety of factors with determining role in the dynamic of discontinuities. Among these factors, the historical, economic, demographic, cultural, and political ones stand out. Natural factors are rather premises of the process of discontinuities morphogenesis, blocking or amplifying the differential development trends at micro-scale level. Historical factors have a great impact on the discontinuities at this level and are found in the territorial-administrative structures, in the first place (François, 2002; Grasland, 1997). As areas at micro-scale level are involved, the gained or lost function of centre of commune was essential in the development of a community, in changing the hierarchies at the base of settlement systems. To the differentiated developments of the territories at this level, the cultural heritage and the promoted local policies have consciously or unconsciously contributed.

But the economic and demographic factors had the most important direct impact on spatial discontinuities morphogenesis at micro-scale. The quality of demographic characteristics, for a long time appeared to be inversely proportional to the level of development. Thus, communes with a high natural growth had a low level of development, while those with an aging population were at the opposite pole.

The generalization of the level of training and disseminating good practices seem to cancel the historic advantage and the one of traditions related to infra local space organization. At the same time, the existence of only one type of resources and the practice of a subsistence economy had an impact on the current level of development of some specific areas.

At the level of each category of factors, elementary factors are individualised. Thus, historical factors include the infrastructure legacy (physical and social), administrative organizational structures, historical function of some settlements, cultural factors refer to intangible cultural heritage, customs and traditions in the area management, the population mentalities, religious beliefs and their spatial projection and political factors refer to the succession of decisions taken at different levels and their impact on territorial management at micro-scale. This last category of factors had severe adverse effects on deeply disadvantaged areas through the co-operativisation processes, after the Soviet model. It was found that there is a development gap between the collectivisation communes and those in which private property has continued to exist, to the advantage of the latter. The discontinuities generated by such decisions are noted at the level of some deeply disadvantaged areas covering the mountain area, as well as the depression area (V2, NV1, NV6, C7).

In the category of economic factors, we note those which were the basis for industrialisation, agricultural development and tertiarisation (including also natural resources). The industrialisation policies promoted during the totalitarian regime produced large discontinuities at the level of the deeply disadvantaged areas (NE5, NE3, S5, SV2, V2, NV6, C7). The transition to market economy has maintained the same discontinuities, but promoted by the loss of located industrial activities as a result of some wrong decisions. Demographic factors can be summarized in the following subcategories: those related to the natural population growth, to short distance and long distance movements with two directions: internal and external. The impact of these factors in producing discontinuities is very different and difficult to assess in relation to the development process. This is because, statistically, the rural areas with many immigrants for work seem to be developed, due to the remittances, but on the long term these areas may be the major losers.

The diversity of the local and inter-local development process shows that making a global hierarchy of the factors generating positive discontinuities at those levels is difficult, considering that these are at the basis of territorial development. In the case of the most characteristic areas, it seems that economic factors, combined with the cultural ones, are deciding factors in the local development (Jumper et al. 1980).

Regarding the inter-local development, the historical and political factors are fully exploited. The first exploit the role played by some rural or urban settlements in the local or regional history, the existence of functions related to the geographical position that favoured the functioning of some localities as traditional fairs. The political factors are related to certain positions held by a number of settlements either as *"plase"* capitals in the interwar period, or as district residence, which has imposed them in the local systems of settlements.

The method of ranking the factors generating development had on its bases the construction of a graph and an associated matrix for each of the characteristic areas among the selected areas. Marking the existence with 1 and the non-existence of a determining relation with 0, different values for each factor were obtained horizontally. Depending on the sum of these values, the ranking for each characteristic area of the factors impacting on local development was made. In the deeply disadvantaged areas, selected by characteristic areas, it was revealed that agriculture revitalization has more than 37%, local industrial exploitation of agricultural products 23%, 21% SME development, the remaining 19% belonging to other factors.

For each of the main factors able to generate discontinuities at the characteristic areas and at the deeply disadvantaged areas level, an analysis has been undertaken, able to emphasize their ability to induce changes. As mentioned, the punctually located factors are the most recommended to produce discontinuities in the development at different scales. Among these, the industrial activities, the location of major tourist accommodation, the location of shopping centres, logistics centres or science parks stand out. Stimulation by tax incentives of the preferential location of these types of activities in localities with central functions, induce, directly and indirectly, development toward the adjacent areas. In relation to the specific of internal and external environment of the characteristic area, the alternative of stimulation of urban or rural areas located close to it may be chosen, from where the step by step diffusion may accelerate the development of the area and eliminate the existing discontinuity producing others. The factors supporting the rapid translation of discontinuities and their removal by development could be characterized for each of the characteristic areas of the deeply disadvantaged areas.

THE IDENTIFICATION OF INTERACTIONS CHAINS IN THE MOMENT OF STIMULATING ONE OF THE FACTORS AND THE ESTIMATION OF THE EFFECTS ON THE DEVELOPMENT

In order to estimate the effects on the development, an attempt was made through identifying the route of the amplification of a factor's influences in the case of its stimulation. It is clear that developing an area inside of a deeply disadvantaged area is made only by inducing a change at the level of one of the factors. Simulations revealed two types of interaction chains: one that means diffuse interactions in time (generated by the change produced in a spatially extended area), and the second, peculiar to relatively rapid interactions determined by implementing a precisely oriented activity such as industry or services (Navalpotro, 2000; Suarez-Villa and Roura, 1993).

The most durable chains of interactions are built with a precisely oriented productive activity as a deciding factor: industrial exploitation of wood or agricultural products, or of rocks or minerals. These chains have an activity of agglomerating other activities, resulting in an economic diversification of the characteristic area. Simulations for characteristic areas within NE5f, SE4d, S5c, SV2, V6, NV1c, C3d, confirm the amplifying effects of these precisely oriented interventions, exploiting local resources through SMEs.

For example, in the case of SE4d area, expanded on the territory of 6 communes, if there is an intervention through stimulating the development of agricultural exploitation activities in this area at the level of Balta Albă, successive changes in the use of agricultural land of the communes Grădiştea, Vâlcelele, Boldu, Galbenu and Ghergheasa will take place. Much of the agricultural products obtained will generate streams converged to Balta Albă. The increase in the income achieved from the real possibility of exploitation of agricultural products will result, at economic level, in the revitalisation and the diversification of service activities. Multiplying these activities will have direct effects on local demographics, decreasing the definitive departures, on the physical and social infrastructure, on the training level of the population. Obviously, the main effect will be the construction of a new gap between Balta Albă and the other communes, the first following to be pushed outside the area and turn into a continuity.

The obtained results were the basis for the individualisation of the main factors that may cause the emergence and development of a discontinuity at the level of characteristic areas in deeply disadvantaged areas. These were very useful to characterize the internal environment of each area.

The internal context is shown by the different structure of each deeply disadvantaged area, taking into account the particularities of the characteristic areas. Thus, we distinguish very complex areas like those in the North-East and South Regions, but also others, relatively simply structured as in the South-West, West or North-West Region. For example, the NE5 area has 3 areas with average levels of development, 2 with low levels, and 4 with very low levels. In contrast to this complex situation, we note the SV2 area, with 2 areas with low levels of development and one with average level.

To this statistical approach, we need to add the geometry of the configurations that increase the complexity character. The discontinuities separating this type of areas are rarely linear, in most cases being very festooned. Hence, the difficulty of establishing generally applicable patterns in the treatment of such areas is explained (Alden and Boland, 1996; Trachen, 1985).

The analysis of the external environment has highlighted the particular influence of several factors on the general characteristics of deeply disadvantaged areas. Among these, it is notable the level of ruralisation, the density and quality of transport infrastructure, including the accessibility, the structure and the dynamics of the regional economy, regional settlement system characteristics, cultural differences. The reflection in the regional spatial structures causes an asymmetric aspect in the regional development, with breaks of symmetries on large areas (North-East Region, South Region, North-West Region) and a circular appearance in a developed regional area (West and Center Regions).

CONCLUSIONS

The main conclusion is that the territorial dynamics is high differentiated and that the research at lower levels should be intensified. The individualisation of discontinuities in deeply disadvantaged areas leads to the demarcation of other areas with different levels of development.

To induce development at the deeply disadvantaged area level is to mitigate the gaps "in the top direction" on the development scale and implicitly to destroy the individualised discontinuities. Knowing them is essential in the management of poverty and backwardness, through supporting the unequal development in limited periods of time. Breaking of symmetry in territorial development generates impulses and related phenomena which propelled with different speeds the communes' development.

Moreover, this analysis leads to the testing of new typologies of discontinuities related to territorial development. Alongside the new typology, one can associate relevant instruments that lead to their increase or extinction. Basically, we consider this study a step towards the development of an integrated treatment of deeply disadvantaged areas.

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